Advisory Board Report 2020 - 2023

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designing interactive technologies to foster a sustainable, inclusive, and aesthetically pleasing future.

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Statement of the President

As we reflect upon the past years, it's imperative to recognise the journey we've embarked upon and the milestones we've achieved. The Interactive Technologies Institute, established through a visionary partnership with Carnegie Mellon University, has grown from its roots in the Madeira Islands to become a beacon of interdisciplinary research at Instituto Superior Técnico, University of Lisbon.

Our history has been shaped by our commitment to exploring the vast breadth of human-computer interaction. We've always been motivated by the possibilities of what could be - how digital technology, when used responsibly, can pave the way for an inclusive and sustainable future. Our numerous research projects, many of which have received the support of international funding bodies, have led to groundbreaking tools and methods and demonstrated our capability to innovate and push research boundaries.



Our partnerships - with leading academic institutions, industries, and government bodies – have allowed our institute to flourish. These collaborations have elevated our research and enabled us to impart valuable skills and knowledge to the next generation of researchers, ensuring they are prepared to navigate the everevolving digital frontier. At our labs, in the Creative Hub of Beato and the "Matadouro" of Funchal, our talented faculty, researchers, and students join hands to redefine the boundaries of what's possible.

We believe in the power of an interdisciplinary approach, bringing together the brightest minds from diverse fields to tackle the multifaceted societal challenges of our times. We are committed to ensuring that digital technology remains a force for good—enriching lives, preserving our environment, and paving the way for an inclusive digital future.

Inclusivity, sustainability, and collaboration are the pillars of the Interactive Technologies Institute. We are motivated by a future where technology is not just innovative but is also ethically designed, keeping the well-being of society at its heart.

As we progress, we promise to remain at the forefront of research, design, and interdisciplinary collaboration. With your continued support and trust, we will shape a future where the harmonious blend of humanity and technology brings forth unparalleled beauty and purpose.

Thank you for being a part of our journey.

Warm regards,

Nuno Jardim Nunes

History

Emerging from the <u>Carnegie Mellon International Partnership</u>, the Interactive Technologies Institute is a research institution dedicated to advancing digital technology and its applications across various fields. Established in 2010 in Madeira Islands, Portugal, the Interactive Technologies Institute later relocated to <u>Instituto Superior Técnico</u>, <u>University of Lisbon</u>, where it has since become a hub for interdisciplinary research, attracting experts from engineering, design, social sciences, arts, and humanities.



The institute's founding vision was to create a unique environment fostering innovation and collaboration in the interdisciplinary field of human-computer interaction. Inspired by our partnership with HCII at Carnegie Mellon University, we sought to bring a fresh vision to a different society, economy, cultural and environmental context. From the outset, the Interactive Technologies Institute has concentrated on understanding the intricate relationships between humans, the environment, and technology to shape a sustainable and inclusive future for all. Over the years, we have undertaken numerous research projects, leading to the development of innovative tools and novel design methods. These projects have often been supported by prestigious funding bodies such as the European Commission and the Portuguese Foundation for Science and Technology, resulting in numerous publications, patents, and spin-offs.

Our commitment to interdisciplinary research has facilitated the creation of robust partnerships with leading academic institutions, industry, and government agencies worldwide. Moreover, the institute's educational programs have played a crucial role in training the next generation of researchers, equipping them to address the challenges of a rapidly evolving digital landscape. Critically, since digital is the technology of scale of the 21st century, solutions for our most pressing problems will need to leverage responsible and sustainable digital technologies.

Bringing together faculty members from <u>Instituto Superior Técnico</u>, <u>Faculty of Fine</u> <u>Arts</u>, and <u>Faculty of Architecture</u> of the University of Lisbon and the <u>University of</u> <u>Madeira</u>, our labs are situated in the <u>Creative Hub of Beato</u> (in Lisbon) and at the "Matadouro" of Funchal (in Madeira Islands). The Foundation for Science and Technology, the European Commission, and benefactors such as <u>Fundação</u> <u>Santander</u>, <u>Feedzai</u>, <u>WYGroup</u>, and the Municipalities of <u>Lisbon</u> and <u>Funchal</u> generously support the research at Interactive Technologies Institute.



Hub Criativo do Beato



Centro Cultural e de Investigação do Funchal – "Matadouro"

Vision

At ITI, we explore the entanglements between people and digital technologies. Our focus is on thoughtfully designing innovative interactive systems and services that harmonise the relationships among humans, the environment, and technology, fostering a sustainable, inclusive, and aesthetically appealing future for all.

Central to our vision is the belief that digital technology should be a force for good, enriching people's lives while preserving the natural world. We strive to pioneer eco-friendly and sustainable interactive technologies that minimise their ecological footprint and contribute to the global effort to mitigate environmental challenges. By fostering collaborations with environmental experts and policymakers, we aim to shape the digital landscape to align with environmental conservation and promote responsible technology consumption.

Additionally, inclusivity is at the core of our mission. We aspire to create interactive systems that cater to the diverse needs of all individuals, breaking down barriers and promoting accessibility for everyone, regardless of age, ability, or background. Our team actively engages with marginalised communities to understand their unique challenges and co-design solutions that empower them to participate fully in the digital world. By placing human values and ethical considerations at the forefront of our work, we aim to cultivate a future where technology is innovative and genuinely beneficial to humanity. Through our unwavering dedication to research, design, and collaboration, the Interactive Technologies Institute seeks to shape a future where the intertwining of people and digital technologies uplifts society, fosters sustainability, and nurtures a shared sense of beauty and purpose.

Mission

At the Interactive Technologies Institute, we foster innovation, collaboration, and progress in digital technologies. Our institute is a hub for researchers from diverse disciplines, including engineering, design, social sciences, arts, and humanities, all united by a common vision: to create meaningful connections and bridges through interactive technologies.

Our overarching mission is to promote the responsible and sustainable use of digital technology to address the challenges of the 21st century. We believe the key to progress is creating scalable, inclusive, aesthetically pleasing, and environmentally conscious solutions. To achieve this, we are guided by the following principles:

- Understanding the Human Impact: We recognise the profound influence of digital technologies on individuals and society. As such, we are committed to thoroughly analysing these technologies' social and ethical consequences on people's lives. By understanding the implications, we can proactively shape technology to benefit humanity and minimise adverse effects.
- 2. Building an Inclusive Future: We firmly believe in the power of technology to be a force for positive change. Our primary focus is inclusivity as we develop new tools and design methods. We strive to ensure that our interactive technologies are accessible to all individuals, regardless of their backgrounds or abilities. Furthermore, affordability is critical to our mission, ensuring that our innovations are within reach for as many people as possible.
- 3. Cultivating Creativity and Risk-Taking: Innovation thrives in an environment encouraging experimentation and risk-taking. We foster a culture of creativity and boldness, empowering our researchers to explore novel ideas and challenge conventional norms. By embracing this spirit, we continually push the boundaries of what's possible, paving the way for groundbreaking digital technologies with sustainability at their core.
- 4. **Pioneering Sustainable Solutions:** Sustainability lies at the heart of our mission. We are driven to develop digital technologies that meet the needs of the present and safeguard the future. Our commitment to sustainability

extends beyond environmental concerns to encompass social and economic aspects, contributing to a more balanced and equitable world.

5. **Bridging Disciplines and Perspectives:** As an interdisciplinary institute, we cherish the diverse perspectives that researchers from various fields bring to the table. By fostering collaboration and knowledge-sharing, we create a dynamic ecosystem that enriches our understanding and accelerates the development of impactful solutions.

We actively engage with academia, industry, and communities in pursuing our mission. Through fruitful partnerships and knowledge exchange, we seek to make a positive and lasting impact on society. Ultimately, the Interactive Technologies Institute endeavours to be at the forefront of shaping a brighter, sustainable, and inclusive future powered by interactive technologies.

LARSyS

The Interactive Technologies Institute is one of the founding members of LARSyS Associated Laboratory, the highest-ranked research institution in the Portuguese Science, Technology, and Innovation System.

LARSyS, short for "Laboratory for Robotics and Engineering Systems," brings together four research centres, namely, the Institute of Systems and Robotics (ISR), the Institute for Systems and Computer Engineering, Research, and Development (IN+), the Marine Environment and Technology Centre (MARETEC), and the Interactive Technologies Institute (ITI). These centres provide specialised expertise in various knowledge domains through ten dedicated Laboratories and/or Research Groups. The affiliation of expert researchers in these centres ensures that LARSyS operates at the forefront of international excellence.

LARSyS seeks an enhanced capacity to support public policies on a broad set of Portuguese and European societal challenges by fostering research at new knowledge frontiers across different disciplines while pursuing world-class excellence in R&D. The scientific research agendas of the LARSyS groups are complemented and extended through a set of 5 interdisciplinary Thematic Lines:

- OCEANS: Exploration and Exploitation
- URBAN: Sustainability
- AIR: Aeronautics and Space Systems
- LIFE: Engineering for and from the Life Sciences
- INTERACTION: Cognitive Robotics and Human Experience

The key thrust of LARSyS activity is threefold: research and development, advanced training, and technology transfer and outreach activities. Since its inception, LARSyS has been committed to scientific employment and research track career development.

As one of the constituting members of LARSyS, the Interactive Technologies Institute contributes to this wider agenda and benefits from the opportunities and responsibilities in terms of advanced training of PhD students and post-docs but also for developing research track careers and assisting Portugal in key areas of public policy while participating in outreach activities and public service.

Governance structure



Figure 1: IST/ITI Governance Model



Figure 2: LARSyS/ITI Governance Model

SWOT Analysis

Strengths

- · High potential research faculty
- Institutional support and strategic alignment
- •International connections and highquality graduate education
- •Attractiveness and high quality of life in Portugal
- •Cooperation with industry

Opportunities

•Increased importance of HCI and design innovation in ICT

Increased relevance for ERA ICT related challenges

•Agility and empowerment of the young research team

•End-user demand for design innovation and interdisciplinary challenges

•Lower costs of research and availability of talent

 Increasing entrepreneurship mindset of our Researchers

Weaknesses

·Limited participation in the ERA

•Lack of research management structure

•Lack of academic career prospects for interdisciplinary faculty

•Lack of in-house and large-scale deployment equipment

Insufficient laboratory space

•Precarity of research track positions

Threats

•Brain drain

•Competition to hire talented researchers

•Dependency from the National research funds

 Internal resistance to interdisciplinary areas

•Lack of career development opportunities

Strategic Ambitions

The researchers of ITI organize themselves in research groups by scientific affinity and through association with funded research projects. Each research group has a leader (Principal Investigator), who is either the main person responsible for the funded project or appointed to the role by senior members of the institute to cover specific research areas of direct interest to ITI.

Research Capacity

Establish ITI as an active player in the European Research Area by building an experienced partnering network of European excellence centres that will strengthen our research capacity through know-how exchange, infrastructure setup, EU funding access and brain-drain prevention.

Strategic Planning

Focus ITI research strategy on key application domains corresponding to important societal challenges aligned with the ERA strategic planning: entertainment and assistive technologies, creative media and digital culture, and sustainability for smart cities.

Human Resources

Reach distinctive and critical human capital in interactive technologies by overcoming the fragmentation of competencies (typically driven by academic and not research requirements) that is currently straining ITI's existing human resources.

Networking

Overcome the brain drain by recruiting high-quality experienced researchers, engineers, and established scientists, and promoting free exchange of knowledge and people within and across the partner network.

Critical Design and Critical Making

Improve innovation performance by creating a unique research infrastructure based on an open innovation model that leverages an international living lab for testing innovative interactive technologies and their social impacts.

Intellectual Property

Substantially improve the RTD indicators and contribute to changing the economic and development paradigm, which is presently under pressure to recover from the financial crisis.

Start-ups and Spin-Offs

Boost the potential of ITI to generate innovative ideas that can be turned into new marketable interactive systems and services through the attraction of industry and the generation of start-ups and spin-offs.

Development Paradigm

Enhance the use of generated knowledge by instituting an effective strategy for managing intellectual property.

Our numbers

Students

Students	2020	2021	2022	2023*
PhD Graduated	6	24	10	4
PhD Ongoing	63	56	84	94
Master Graduates	47	67	69	-

Table 1: ITI's PhD, Master and Graduate students' evolution 2020-2023*



Figure 3: ITI's PHD, Master and Graduate students' evolution 2020-2023*

Publications

Publications per type	2020	2021	2022
Book chapter	5	10	22
Demo/Poster/WiP	0	10	12
Full paper	12	32	40
Journal	50	59	108
Other	33	4	3
Short paper	0	4	7
Workshop chairing	0	2	2
Total	100	121	194

Table 2: ITI's publications per type evolution 2020-2022



Figure 4: ITI's publications per type evolution 2020-2022

Publications per Classification	2020	2021	2022	Total
А*	5	2	12	19
Q1	19	26	74	119
А	0	17	5	22
Q2	15	28	17	60
Other	61	48	86	195
Grand Total	100	121	194	415

Table 3: ITI's publications per classification evolution 2020-2022



Figure 5: ITI's publications per classification evolution 2020-2022

Researchers and Faculty

Researchers and Faculty	2020	2021	2022	2023*
Research Faculty	2	4	5	8
Faculty	15	16	18	19
Total	17	20	23	27

Table 4: ITI's Research Faculty and Faculty numbers evolution 2020-2023*



*Figure 6: ITI's Research Faculty and Faculty numbers evolution 2020-2023**

Funding

Funding Source	2020	2021	2022	2023 *
National Funding	€975 773	€1 137 559	€1 093 023	€1 890 480
FCT (Pluriannual)	€291 439	€499 071	€446 144	€319 628
FCT (Projects)	€219 439	€259 463	€125 746	€50 404
FCT (Researchers)	€135 000	€135 000	€135 000	€180 000
Other	€329 895	€244 025	€386 133	€1 340 448
International Funding	€404 687	€646 851	€499 594	€1 204 367
Horizon	€404 687	€646 851	€499 594	€1 196 867
Other				€7 500
Industry			€75 000	€90 000
National				€15 000
Sponsorship			€75 000	€75 000
Total	€1 380 461	€1 784 410	€1 667 617	€3 184 847

Table 5: ITI's Funding per source evolution 2020-2023*



Figure 7: ITI's Funding per source evolution 2020-2023*

Impact cases

ITI generates a unique combination of strong research and innovation potential, enabling interdisciplinary work among scientists and engineers to examine and communicate emerging technologies' impact in key areas of contemporary life. Leveraging design innovation, ITI is well-positioned to generate novel products, systems, and services these emerging technologies might support. Prototypes and research demos function as tangible and accessible demonstrations that can be used to examine how contemporary scientific research could transform our lives in the near and distant future. The potential of HCI to reshape the current interdisciplinary research landscape lies in a novel relationship between science and design used to support interdisciplinary work and foster dialogue with the population of users.

The Bauhaus of the Seas

Presented as a <u>manifesto</u> in 2020, the **Bauhaus of the Seas (BoS)** was first devised as a situated vision that responded to the <u>New European Bauhaus</u> challenge posed by the European Commission President, Ursula von der Leyen, in <u>September 2020</u>. The BoS vision incorporated an understanding of the climate crisis as a global, complex hyperobject emerging from the human exceptionalism of generations schooled in the dichotomy of humans vs nature. This vision evolved towards a New European Bauhaus mobilisation around the most definitive global natural space and the most critical shared space in the EU and the world: the seas, oceans and other water bodies, stating that only an interdisciplinary, intergenerational and interspecies movement that addresses the sheer complexity and scale of the problem will allow us to enact meaningful change.

In 2021, this continental-wide mobilisation began gathering researchers and entrepreneurs, designers and architects, artists and thinkers to share ideas and proposals for this movement in the context of the New European Bauhaus initiative. Such gatherings included a one-day <u>conference in Lisbon</u> and a two-day <u>co-design event in Venice</u>. Created from that mobilisation, the Bauhaus of the Seas Sails consortium was created. In 2022 EU funding was granted under <u>the 2022 call</u> for the development of the first New European Bauhaus 'lighthouse <u>demonstrators'</u>. Coordinated by ITI, this consortium was awarded €5 million under the <u>Grant agreement ID: 101079995</u>. Officially launched in Lisbon at the start of 2023, the Bauhaus of the Seas Sails consortium encompasses <u>18 academic</u>.

<u>cultural and territorial partners</u> located in 7 cities and regions across 4 aquatic ecosystems (Lisbon and Oeiras in Portugal, Venice and Genova in Italy, Malmø in Sweden, Hamburg in Germany and Rotterdam in the Netherlands).

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- Speech of the Comissioner Elisa Ferreira about the Bauhaus of the Seas <u>https://ec.europa.eu/commission/presscorner/detail/en/speech_23_4617</u>
- Bauhaus of the Seas Conference in Lisbon https://www.maat.pt/en/event/bauhaus-seas
- Bauhaus of the Seas Conference in Venice https://www.unive.it/pag/16584/?tx_news_pi1[news]=11320&cHash=167a093cc Oeabb541f6ee9772c838375
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Interactive Storytelling for Good

Over the years, ITI researchers have delved deep into interactive storytelling, specifically locative interactive storytelling, seeking to harness its power for societal good. Typically, locative storytelling applications or websites are accessed through location-aware smartphones, with content and interactions triggered by the user's location or interaction within the environment. Thus, the experience is a mixed reality, combining digital and real place elements. Through innovative deployments, the team has demonstrated how these digital interventions can foster a greater understanding of cultural heritage, promote social inclusion, feel

aware of, and connected with nature, and bridge divides in multicultural societies. These interventions have contributed to i) elevating cultural heritage and promoting inclusivity, bringing to the forefront marginalised voices and fostering a more holistic understanding of cultural heritage through novel tools for discourse; ii) reframing public spaces: site-specific narratives transform spaces into arenas of learning and engagement, reshaping perceptions of locals and visitors; iii) engaging the youth: digital interventions, especially in museum settings, can rejuvenate interest in cultural heritage among younger audiences; iv) promote locals and tourism engagement with protected biodiversity and natural heritage.

This impact case enhanced public engagement through location-based narratives and digital interventions that heighten levels of immersion and engagement. Digital storytelling tools, created and tailored for migrant and marginalised communities, facilitate intercultural dialogues and understanding through gamified experiences in museums and augmented reality to foster novel experiences of cultural heritage. Furthermore, tools that generate digital twins of natural and culturally entangled landscapes make these twins visible and explorable via transmedia gaming to local and tourist communities, increasing their connectedness to nature and promoting ecological behaviour. Finally, these interventions have driven policy and practice, providing valuable insights for policymakers and practitioners in cultural and nature preservation, social inclusion, and digital engagement.

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- http://undocs.org/A/HRC/52/35

Mobilising Digital Technology for COVID-19 Response and Beyond

Funded by Research4COVID as a response to the pandemic, ITI was involved in several small R&D projects innovatively leveraging the ubiquity of mobile computing and models to monitor and foster behaviour change essential for mitigating the spread of COVID-19. Through a unique blend of engagement, gamification, crowdsourcing, and citizen science, Maré provided a digital platform designed with a human-centric approach, prioritising user privacy and voluntary participation. This novel approach uniquely supports the transition from lockdown to the "new normal," offering tangible benefits to public health systems and communities. This research generated several real-world deployments used by hundreds of thousands of people, mostly in the Madeira Islands and the IST community. Examples include the Madeira Safe to Discover App, the Técnico Go App, and the COVID-19 Dashboards and maps used by regional and national authorities.

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Communicating the Effects of Sustainability and Climate Change

In the context of growing urgency around climate change, a group of ITI researchers mobilised to leverage Human-Computer Interaction (HCI) and data visualisation to facilitate a nuanced understanding of complex climate change and sustainability narratives. By eschewing the prevailing "doom-and-gloom" approach, the research adopts a data humanism design strategy to foster meaningful interactions, presenting climate change data in a contextualised, personalised, and actionable manner. This research was applied to several case studies highlighting the power of data humanism to convey the interdependence of complex social-ecological phenomena. Four case studies include recycling, natural solutions for carbon sequestration, the collaborative decision of the new airport of Lisbon and the Ukrainian war. ITI's approach intended to reframe climate narratives in all case studies, moving away from the prevalent negative framing. The research emphasises the importance of positive, story-driven, and actionable communication to engage diverse audiences of non-experts with complex climate topics. Parallel to research on sustainability narratives targeting the public, work was done on how sustainability is approached within the HCl community. In particular, the Triple Bottom Line (TBL) framework was adopted as a critical lens to understand how the pillars of sustainable development (environmental, social, and economic) play into the HCI discourse on sustainability. The research identified critical gaps in current Sustainable HCI (SHCI) research – particularly, an imbalance in addressing the economic angle. The multidisciplinary approach adopted by ITI's researchers allowed us to put forward an approach for SHCI research to actively challenge the broadly accepted narrative of economic theory and ultimately include the re-design of our economic system into our research agenda.

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- SYNTECS SustainablY aNd digiTally driven hiErarchical laser texturing for Complex Surfaces

Inclusive Learning: Robots and Collaborative Tools for Children

Children with visual impairments (VI) face significant challenges in collaborative classroom settings, hindering their ability to participate and thrive in these environments fully. Traditional learning setups often overlook the unique needs of these children, leading to a lack of inclusion and potential isolation. This research underscores the importance of leveraging technology, specifically social robots, and collaborative environments, to champion the cause of inclusive learning. As we progress in the digital age, ensuring that every child, regardless of their abilities, gets an equal opportunity to learn and grow becomes paramount. The innovations and findings presented in these papers pave the way for a more inclusive future in education. Innovations in this context pioneered by ITI include i) a community-based design process initiated to understand the barriers faced by visually impaired children and ii) The development of a mediator robot to promote inclusion in group discussions among children with and without visual impairment, and iii) a comprehensive study to understand the trade-offs between remote and co-located collaboration in the context of inclusive education.

Creativity plays a detached role in current discussions about the essential 21stcentury learning and innovation skills Communication and collaboration skills have also been underlined as important in problem-solving, especially in overcoming cultural, geographical, and language boundaries in today's super diverse communities. A strong claim is made for a change in educational policy and curricula in order to teach and learn such skills. Multiliteracies is a particularly influential theoretical answer to this call, offering a reconceptualisation of literacy pedagogy, considering that the meaning-making processes involved in the new 21st-century super diverse communicative landscape are essentially multimodal and that the multiple modes with which we make meanings, such as still and moving images, sound, music, touch, should be at the core of literacy learning. Such changes are demanding and require new learning tools and teaching practices. The Mobeybou project aims to investigate (i) to which extent the use of a kit of innovative multimodal digital tools (a digital manipulative, a story maker, and a set of interactive story apps) for the co-creation of cross-cultural narratives can promote the development of multiliteracies, collaboration skills, and intercultural sensitivity in Early Childhood, (ii) and how teachers/educators can support children in this learning.

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- November 2021 Rádio Antena 1 Semana da Ciência <u>https://www.youtube.com/watch?v=bD1w-93pMHo</u>
- BEST APP The Mobeybou apps integrated the three finalists for BEST APP at the <u>comKids festival</u>, one of the most relevant festivals on digital media (<u>presentation here</u>)
- The project Mobeybou was selected by ELINET The European Literacy Policy Network as a good practice example of materials that enhance digital literacy skills in early and primary years' education. <u>https://elinet.pro</u>
- The app Mobeybou in Brazil integrates the Brazilian repositorium @digitalij.
 Mapping and preserving digital literature for children and young people.
 https://linktr.ee/digitalij
- January June 2023 we carried out a 6-month certificated course for pre- and primary school teachers in which each teacher carried out an intervention with the Mobeybou materials in their class. 52 teachers completed the course.
- October 2023: We have been contacted by the ANEIS The National Association for the Study and Intervention in Giftedness, to carry out an intervention with these children using the Mobeybou materials. https://www.aneis.org/aneis/

Multimodal Interfaces for Planetary Ground Robots

ITI and ISR are/have been involved in two Mars analogue field missions (i.e., AMADEE-20 and AMADEE-24 Mars simulations) organised by the Austrian Space Forum. The main goal of AMADEE-20 was to achieve more effective remote execution of exploration operations using our multimodal interfaces and obtain valuable insights to understand the challenges of teleoperation in planetary environments. Our research focused on two problems: 1) dealing with situations where the robot loses traction and cannot comply with the operator's commands. 2) enhance the operator's awareness of the robot's attitude (orientation in space). The focus for AMADEE-24 is 1) the teleoperation improvement of the rover from the habitat and 2) providing an effective visualisation tool that can effectively enhance the decision-making of the flight planning team. ITI was also involved in the ESA-funded project aiming to develop an advanced haptic interface to drive a planetary ground robot. Based on Sigma.7 (a commercial haptic device currently on the International Space Station), the developed interface can control the rover for driving and provide haptic feedback to the user on driving states.

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- Thomas Krueger, head of the Human-Robot Interaction Lab at European Space Research and Technology Centre (ESTEC), European Space Agency (ESA)
- MEROP R&D project "Towards More Effective Remote execution of exploration OPerations using multimodal interfaces" in the context of "AMADEE-24 Mars simulation" - <u>https://oewf.org/en/amadee-24/</u>
- MEROP R&D project "Towards a More Effective Remote Operation of Planetary ground robots using multimodal interfaces"
- Presence in Portuguese Press Releases (e.g. Telejornal SIC, Jornal Público, RTP, Expresso, Exame Informática, Observador, etc.) in the context of AMADEE-20: <u>https://www.youtube.com/watch?v=jNBDWwmy7To</u>
- <u>https://www.publico.pt/2019/11/13/ciencia/noticia/investigadores-portugueses-</u> vao-participar-missao-simulada-marte-1893543
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Future Energy Systems

The future energy landscape is characterised by a shift towards decentralised power grids with a dominant presence of renewable energy sources and distributed energy resources. This transition not only addresses environmental concerns but also promotes a more sustainable, resilient, and inclusive energy system that benefits individuals, communities, and the planet as a whole. In this context, providing eco-feedback to consumers and prosumers is vital, empowering them to make informed decisions about their energy usage and generation. This not only helps individuals save on their energy bills but also maximises their selfsufficiency and enables them to contribute surplus energy to the grid, supporting grid reliability and earning revenue.

Over the years, the ITI has made significant research contributions in this area, particularly in the residential sector, by investigating the long-term effects of eco-feedback technology through a series of real-world deployments. Smart meter data analytics is another game-changer in this context. By processing vast amounts of data generated by smart meters, it is possible to gain insights into consumption patterns, detect anomalies, and optimise grid operations in real-time. This enables predictive maintenance, load forecasting, and the identification of opportunities for grid improvements. It also supports demand response programs, where consumers and prosumers can adjust their usage in response to grid conditions, enhancing grid stability and reducing the need for costly infrastructure upgrades.

Several research initiatives have been developed by the ITI researchers in this area. For example, in the field of Non-Intrusive Load Monitoring (NILM), through the proposal of algorithms, metrics, and performance evaluation methodologies. Another research area is that of forecasting, with recent efforts in developing lightweight methods for forecasting net-load demand at the LV distribution level. Other important research efforts include the development of methodologies for understanding smart-meter data, including methods to automatically identify usage patterns in residential appliances or quantify the demand-response potential of industrial devices such as espresso machines. While realising the smart grid will represent a remarkable achievement, the path forward presents unprecedented challenges, primarily centred around the imperative to decarbonise our energy systems fully.

In this transformative journey, we are actively pioneering new research frontiers, including the exciting realms of pro-social and privacy-aware energy engineering. Equally vital is our commitment to addressing the pressing need for decarbonisation within the shipping industry, recognising its growing significance in our sustainable energy landscape. This mission holds particular importance for countries like Portugal, which boasts extensive coastlines, and places like Madeira, an island heavily relying on maritime resources for tourism and transportation.

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Multisensory and Intelligent Creative Embodied Interaction

The creative industries are rapidly transforming, with new technologies and specialisations emerging constantly. There is an increased interest in using technology in dance. Emergent technologies such as virtual reality, biosignal sensors and motion capture systems are assisting in the digital transformation of dance creation and its experience by audiences in novel multisensory formats. These topics have been explored in Moving Digits: Augmented Dance for Engaged Audience (MODI), a Creative Europe project (<u>https://movingdigits.eu</u>, 2018-2020). We are on the verge of a new wave of transformation in dance, enabled by Artificial Intelligence (AI) and audiences' desire for a higher involvement in performances through technology. These topics are further explored in another Creative Europe project: Movement, Digital Intelligence and Audience Interaction (MODINA, 2023-2026, <u>https://modina.eu</u>). ITI led the former and is a partner with Nuno Correia (ITI) as Principal Investigator. This line of research around multisensoriality, AI, and embodied interaction applies to fields beyond dance, such as sports, well-being, rehabilitation, games, and entertainment.

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- MODINA: Project 101099581, Creative Europe.
- The EU selected moving Digits as impact case study (high impact project) for the launch event of the current Creative Europe programme, 2021-2027 (Lisbon, 17-19 June 2021)
- 2 best paper awards (DIS 2022, Tallinn University award for best paper in exact sciences 2023)
- 4 software systems released as open source so far (<u>https://github.com/hci-dance-visuals/</u>)
- Dr. Atau Tanaka, Professor of Media Computing Goldsmiths, University of London (expert in embodied interaction)
- Dr. Sarah Fdili Alaoui, Associate Professor at LISN-Université Paris Saclay (expert in dance and HCI)

Enhancing Healthcare and Medical Performance through Novel Interactive Technologies

The rapid evolution of technology has influenced multiple sectors, and healthcare is no exception. Integrating Artificial Intelligence (AI) and eXtended Reality (XR) in healthcare and medical settings promises to revolutionise patient care, diagnosis accuracy, surgical outcomes, therapeutic interventions, palliative care, health literacy, medical education and training. By incorporating novel interactive technologies into futuristic yet achievable medical interfaces, we address realworld problems that significantly impact the lives of patients and experts daily. For instance, interactive technologies, such as intelligent agents that assist breast cancer diagnosis or AR headsets that empower surgeons with 'x-ray vision,' are paving the way for a new era of medical practice. As these technologies evolve and integrate seamlessly into healthcare, they will improve patient outcomes and revolutionise the medical landscape. ITI's contributions in this domain have impacted multiple areas, including i) enhancing clinical accuracy and improving clinical workflow: AI and AR have shown potential in improving diagnostic accuracy, reducing errors, aiding in more precise surgeries, reducing cognitive workload, more comfortable postures during surgeries, and quicker diagnosis; ii) revolutionising training: XR tools like PIÑATA and DENTIFY provide interactive and immersive learning environments, ensuring better training outcomes for medical professionals; iii) increased adoption and satisfaction: understanding the right balance of trust, security, and risk management, the adoption of these novel technologies can see widespread acceptance among healthcare professionals, leading to overall better patient care.

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Next steps

ITI's primary goal is to develop interdisciplinary research in HCI in a welcoming environment for top researchers in engineering, social and behavioural sciences, design, and the frontiers of arts and humanities. We want to keep investing in a professional infrastructure that promotes innovation, warranting our interdisciplinary research's results become relevant to companies and impact society and the economy.

Attract and retain experienced researchers from other parts of the world who will develop their scientific careers in ITI and, therefore, contribute to building critical mass and the internationalisation and development of the affiliated academic institutions. International partnerships are the pillar of ITI's medium and long-term future, and we shall work on deepening intuitional links with Carnegie Melon University and our partners in Europe.

ITI secured lab space in Lisbon at the recently established Hub Criativo do Beato in partnership with the Municipality of Lisbon. However, this new space is expensive and was only possible through donations from Fundação Santander, Feedzai and WY Group. The sustainability of this operation will need to be assessed in two years once the initial sponsorship ends. In Madeira, the cohort affiliated with eGames Lab moved to Matadouro in partnership with the municipality of Funchal. In this case, the challenge is that not all the research community shares the same physical space, contributing to a dispersion of the ITI community. In both Lisbon and Madeira, most ITI researchers are located outside the main academic campuses, which also raises challenges with visibility and building an academic culture.

The recent evolution of ITI as a multi-institutional research unit will also open new opportunities for collaboration and advanced training in design, social sciences and the frontiers with the arts and humanities. This new millennium is characterised by challenges that require bringing together disciplines to tackle complex real-world problems that rely on technology as much as they depend on a deep understanding of human needs, desires and expectations while guaranteeing that we don't compromise the future of our planet and the next generations.

Governance team

Advisory Board

Gregory D. Abowd



Gregory D. Abowd is Dean of the College of Engineering and Professor of Electrical and Computer Engineering at Northeastern University. Before joining Northeastern in March 2021, he was a Regents' Professor. He held the J.Z. Liang Chair in the School of Interactive Computing at the Georgia Institute of Technology. He served as Associate Dean of Research and Space for the College of Computing. Abowd is an internationally renowned and highly cited scientist, well known for his contributions in the general area of Human-Computer Interaction (HCI) and specifically for his groundbreaking research in ubiquitous computing. Dr. Abowd's research interests lie in the intersection between Software Engineering and Human-Computer Interaction. Specifically, he is interested in ubiquitous computing (ubicomp) and the research issues in building and evaluating ubicomp

applications that impact our everyday lives when seamlessly integrated into our living spaces.

Kristina Höök



Kristina Höök (born 1964) is a Swedish computer scientist specialising in human-computer interaction and known for her work in somaesthetics. She is a professor in interaction design at the KTH Royal Institute of Technology. Höök earned a bachelor's degree in 1987 from Uppsala University, completed a Ph.D. in 1996 at Stockholm University, and earned a habilitation in 2002 from Stockholm University. She has been a researcher for the Research Institutes of Sweden (RISE) since 1990 and became a professor at Stockholm University in 2003. She moved to KTH in 2012. Her research interests include affective interaction, somaesthetic design, Internet of things and anything that makes life with technology more meaningful, enjoyable, creative, and aesthetically appealing.

Michela Magas



Michela Magas bridges design and technology, academic research and industry. She is Chair of the Industry Commons Foundation, advisor to the European Commission and the G7 leaders, Member of President von der Leyen's High Level Round Table for the New European Bauhaus, and member of the Advisory Board of CERN IdeaSquare (ISAB-G). Michela is Founder of MTF Labs that has over the past 10 years been conducting technology experiments with its global community of 8000 contributors from the arts and sciences. In 2017 she was awarded European Woman Innovator of the Year.

Norbert Streitz



Dr. Norbert Streitz (Ph.D. in physics, Ph.D. in cognitive science) is a Senior Scientist and Strategic Advisor with more than 35 years of experience in ICT. Founder and Scientific Director of the Smart Future Initiative. launched in 2009. Before, Norbert held positions as Deputy Director and Division Manager at the Fraunhofer Institute IPSI in Darmstadt, Germany, for more than 20 years and was a Lecturer at the Computer Science Department at Technical University Darmstadt. This was preceded by being an Assistant Professor at the Technical University Aachen (RWTH). Norbert was a post-doc at the University of California, Berkeley, a visiting scholar at Xerox PARC, Palo Alto, and at the Intelligent Systems Lab, MITI, Tsukuba Science City, Japan. His projects, publications, talks, and keynotes cover a wide range of areas: Cognitive Science, Human-

Computer Interaction, Experience Design, Hypertext/Hypermedia, CSCW, Ubiquitous Computing, Ambient Intelligence, Human-Centred AI, Privacy, Industry 4.0, Automated Driving, Hybrid Smart Cities, Smart Airports, Smart Islands. Norbert was a PI of many projects funded by the European Commission as well as industry. Norbert is an elected member of the ACM CHI Academy.

Vicki Hanson



Vicki Hanson is an American computer scientist noted for her research on human-computer interaction and accessibility and for her leadership in broadening participation in computing. She was named the Chief Executive Officer of the Association for Computing Machinery (ACM) in 2018, having served as its President from 2016 to 2018. Hanson was elected a member of the National Academy of Engineering in 2020 for contributions to the design of accessible systems and for leadership in the computer science and engineering community. Dr. Hanson was a Distinguished Professor at the Rochester Institute of Technology within the HCl and Accessibility research groups. She was also Professor and Chair of Inclusive Technologies at the University of Dundee where she led multiple efforts related to inclusion of older adults and individuals with disabilities.

Board of Directors

Nuno Nunes



Nuno Jardim Nunes is a Full professor at Técnico – University of Lisbon and the President and founder of the Interactive Technologies Institute (ITI). Nuno is the codirector of the Carnegie Mellon International partnership and adjunct faculty at the Human-Computer Interaction Institute at Carnegie Mellon University. Nuno strongly advocates the role of human-centric design in participatory culture and sustainability. His research influenced how digital technologies (including sensors, ML/AI, interactive storytelling, and mixed reality) can engage and inspire digital citizens to act sustainably and connect to nature and the broader ecosystems. Recently, Nuno is coordinating the Bauhaus of the Seas, one of the lighthouse projects of the New European Bauhaus. Nuno organised several top conferences of the ACM SIGCHI.

Daniel Simões Lopes



Daniel Simões Lopes is a tenured Assistant Professor of the Computer Science & Engineering Department at Técnico Lisboa and Integrated Researcher at ITI/LARSyS. He is also a Research Collaborator at INESC ID. He holds a degree in biomedical engineering from the University of Lisbon and graduated in computational engineering under the framework of the UT Austin Portugal Program. At the educational level, he teaches Computer Graphics (undergraduate) and Virtual Reality (graduate) courses. Currently he co-supervises 5 PhD students and has graduated 35+ master students. At the Interactive Technologies Institute, he directs the Lab of xReality, which investigates novel XR interfaces with applications in 3D content creation and medical scenarios, as well as improved Computer Graphics techniques to better interact in the Metaverse. He authored 50+ scientific

papers at top venues. He also participated in 9 national research projects, being the principal investigator in 2 of them. He is member of the ACM. His main research interests are collision detection, motion processing, extended reality, and medical interfaces.

Élvio Rúbio Gouveia



Élvio Rúbio Gouveia (ERG) has a degree in Physical Education, a master's in physical education, and a Ph.D. in Sport Sciences, all from the University of Madeira. Currently, ERG is an Assistant Professor of the Department of Physical Education and Sport at the University of Madeira and a Member of Interactive Technologies Institute, a research unit from the Laboratory of Robotics and Engineering Systems. ERG also collaborates with the Centre for the Interdisciplinary Study of Gerontology and Vulnerability, University of Geneva, Switzerland. ERG has been working on the development and evaluation of strategies to promote physical activity, fitness, and quality of life in children, adults, and older adults. Focusing on the physiological assessment of human fitness and the promotion of healthy ageing, his research is grounded on a

multidisciplinary approach to several issues that affect health fitness. In the last 5 years, ERG has participated in five financed research projects. He has several papers published in Q1 and Q2 scientific journals, such as Quality of Life Research, Journal of Environmental Research and Public Health, Journal of Public Health, Achieves of Gerontology and Geriatrics, Journal of Aging and Physical Activity, Dementia and Geriatric Cognitive Disorders and Medicine and Science in Sports and Exercise.

Hugo Nicolau



Hugo is an Assistant Professor in the Computer Science and Engineering Department (DEI) of Instituto Superior Técnico, University of Lisbon in Portugal. He's also a researcher and Vice-President at the Interactive Technologies Institute / LARSyS. His research interests include human-computer interaction with a special focus on technologies that promote and support the inclusion of people with disabilities in society. Hugo's goals comprise creating meaningful technologies that empower people to address high-impact problems in areas such as education, health, and social cohesion. His research methods extend mostly from the discipline of human-computer interaction and are informed by perspectives in design justice, psychology, sociology, and disability studies.

Research Support Team

Daniel da Costa Ribeiro Communication Manager



Luísa Metelo Seixas Project Manager



Raquel Yam Executive Director



Dina Dionísio Project Manager



Susana Nóbrega Project Manager



Research Team

Integrated Members

Ana Pires IST-UL 🎑



Augusto Esteves IST-UL 🛤



Bruna Gouveia SRS 🗖



Cíntia França IST-UL 🏴



Ana Pires is a cognitive psychologist with experience in Human-Computer Interaction (HCI). She holds a PhD in Psychology from the Universitat Autónoma de Barcelona (Spain). Ana is a Research Fellow at the Interactive Technologies Institute and Co-PI of the "Interaction and Perception" research line at the Centre for Fundamental Research in Psychology from the Universidad de La República (Uruguay).

Augusto Esteves is an Assistant Professor at Instituto Superior Técnico, where he lectures and supervises projects on Human-Computer Interaction (HCI) and eXtended-Reality (XR). Augusto holds a PhD in Human-Computer Interaction from the University of Madeira.

Bruna Raquel Gouveia is an Adjunct Professor at the Saint Joseph of Cluny Higher School of Nursing, a researcher at ITI – LARSyS and CIGEV - Geneva University, and a full European Academy of Nursing Sciences member. Her research has focused on studying human development and ageing and the evaluation of complex interventions in rehabilitation and health. Currently, BRG is working in epidemiological research and developing and using innovative technologies for health.

Cíntia França holds a PhD in Sport Sciences from the University of Coimbra and a Master's in Physical Education Teaching from the University of Madeira. She is an integrated member of the Interactive Technologies Institute and at the Research Centre in Sports Sciences, Health Sciences, and Human Development (CIDESD).

Cláudia Silva IST-UL 💷



Daniel Lopes IST-UL 🗖



Diogo Cabral IST-UL



Élvio Rúbio Gouveia UMa 💴



Filipa Correia IST-UL M



Cláudia Silva received a PhD in Digital Media from the NOVA University of Lisbon within the University of Texas at Austin-Portugal Program scope in 2016. She is an Invited Assistant Professor at the Instituto Superior Técnico (IST).

Daniel Simões Lopes is a tenured Assistant Professor of the Computer Science & Engineering Department at Instituto Superior Técnico (IST) and a Research Collaborator at INESC ID. He holds a degree in Biomedical Engineering from the University of Lisbon and graduated in computational engineering under the framework of the UT Austin Portugal Program.

Diogo Cabral is a Research Fellow at the Institute of Interactive Technologies. Previously, he was an Assistant Professor at the University of Madeira (UMa), Portugal, and a post-doctoral researcher at the Helsinki Institute for Information Technology (HIIT), Finland. He received his PhD in Computer Science from NOVA University of Lisbon, Portugal, in February 2014.

Élvio Rúbio Gouveia holds a PhD in Sport Sciences from the University of Madeira. Currently, he is an Assistant Professor at the Department of Physical Education and Sport at the University of Madeira and collaborates with the Centre for the Interdisciplinary Study of Gerontology and Vulnerability, University of Geneva, Switzerland.

Filipa Correia received a PhD in Computer Science from the University of Lisbon, Portugal, in 2021. Filipa is currently an assistant researcher at the Interactive Technologies Institute in the field of Human-Robot Interaction.

Filipe Quintal UMa 🏴



Frederica Gonçalves UMa 🏴







José Luis Silva ISCTE 🏴







Filipe Quintal is a CS Engineer and assistant professor at the University of Madeira, the same university where he completed his Ph.D. "Exploring the dimensions of eco-feedback in the wild". Filipe is also a post-doctoral researcher at the Interactive Technologies Institute.

Frederica Gonçalves holds a PhD in Computer Science, specialisation in Human-Computer Interaction. She is an Adjunct Professor at the University of Madeira. Currently, she holds the position of member of the board of directors of the Agency for Innovation and Modernization of the Autonomous Region of Madeira.

Hugo is an Assistant Professor in the Computer Science and Engineering Department of Instituto Superior Técnico. He's also a researcher and Vice-President at the Interactive Technologies Institute. He completed his PhD degree in Computer Science at Instituto Superior Técnico.

José Luís Silva holds a PhD in Computer Science from the Portuguese MAP-i Consortium and performed a postdoc at the Interactive Critical Systems (ICS) team, the University of Toulouse (France). He is currently an Assistant Professor at Lisbon University Institute (ISCTE-IUL).

Lucas Pereira received his PhD in Computer Science from the University of Madeira, Portugal, in 2016. Since then, he has been at the Interactive Technologies Institute, leading the Further Energy and Environment Research Laboratory (FEELab). Since 2019 he has been an Assistant Researcher at Instituto Superior Técnico. Luciana Lima IST-UL 🗖



Luciana Lima's academic background includes Arts, Social Psychology, and Education Sciences. She did post-doctoral research in Multimedia Art at the Faculty of Fine Arts, University of Lisbon. She is currently a researcher at Instituto Superior Técnico.



Mariana Pestana IST-UL 🟴



and Technology, New University of Lisbon (FCT-UNL).

Mara Dionisio is an Assistant Professor at the University of Madeira and is currently teaching courses on the Masters of Informatics Engineering and Interactive Media Design. She graduated with her PhD in Digital Media at the Faculty of Science

Mariana Pestana is an architect and researcher. She holds a PhD in Architectural Design from the Bartlett School of Architecture (2019). She is an Invited Assistant Professor at Instituto Superior Técnico and a researcher at the Interactive Technologies Institute.

Mary Barreto UMa 🗖



Mónica Mendes FBA-UL



Mary received her PhD in Informatics Engineering in the domain of Human-Computer Interaction from the University of Madeira, where she conducted studies in the evaluation of eco-feedback technologies for families. She is currently Invited Assistant Professor at the University of Madeira, where she teaches Multimedia Systems, Interaction Design, Requirements Engineering and Interactive Systems and Technologies.

Mónica Mendes is a digital media artist, designer and assistant professor at the Multimedia Art Department, Faculty of Fine Arts of the University of Lisbon. She is also a researcher at the Interactive Technologies Institute, a collaborator at CIEBA – Centro de Investigação e de Estudos em Belas-Artes, and a founding member of AZ Labs hackerspace altLab.

Morgado Dias UMa 🏴



Nuno Nunes IST-UL



Patrícia Gouveia FBA-UL 🟴



Paulo Bala IST-UL 🏴



Pedro Campos UMa 🏴



Fernando Morgado-Dias received his PhD from the University of Aveiro, Portugal, in 2005 and is currently an Associated Professor with Habilitation at the University of Madeira and a Researcher at the Interactive Technologies Institute.

Nuno Jardim Nunes is a Full professor at Instituto Superior Técnico and the President and founder of the Interactive Technologies Institute. Nuno is the co-director of the Carnegie Mellon International Partnership and adjunct faculty at the Human-Computer Interaction Institute at Carnegie Mellon University.

Patrícia Gouveia is an artist, designer, scholar, and curator with over twenty years of research experience in arts, design, gaming, and interaction. She is an Associate Professor at the Faculty of Fine Arts, University of Lisbon, and a researcher at Interactive Technologies Institute.

Paulo Bala holds a Ph.D. in Digital Media from Universidade Nova de Lisboa. Paulo also has an MA. In Entertainment Technology from Carnegie Mellon University and the University of Madeira. He is currently a post-doctoral researcher at Interactive Technologies Institute and a teaching assistant at Instituto Superior Técnico.

Pedro Filipe Campos is an Associate Professor with Habilitation in the Computer Engineering Department of the Faculty of Exact Sciences and Engineering, University of Madeira. He is currently a Vice President of the Interactive Technologies Institute and leading the eGames Lab Agenda.

Sónia Rafael FBA-UL



Valentina Nisi IST-UL



Vanessa Cesário



Sónia Rafael holds a PhD in Communication Design from the Faculty of Fine Arts of the University of Lisbon (FBA-ULisboa). She currently serves as an Assistant Professor in Communication Design at FBA-ULisboa and collaborates with the Faculty of Architecture of the University of Lisbon (FA-ULisboa) in the field of Interaction Design.

Valentina Nisi is a tenured Associate Professor in Design Thinking at Instituto Superior Técnico, Adjunct Faculty at the HCI Institute Carnegie Mellon University (USA) and founding researcher at the Interactive Technologies Institute (ITI LARSyS).

Vanessa Cesário, a PhD holder in Digital Media from Universidade do Porto. She is a post-doctoral researcher at the Interactive Technologies Institute and an Invited Professor at Instituto Superior Técnico.

Collaborators

Albert Acedo



Albert Acedo was granted a Marie-Curie scholarship to pursue a Doctorate in 2015. In 2019, he was a postdoctoral fellow at the University of Waterloo (Canada), joining the Interactive Technologies Institute one year later. In 2021, he started a postdoctoral fellowship at Universitat Jaume I (Spain). He is now developing his project at NOVA IMS and collaborating with the Interactive Technologies Institute after winning an FCT Individual Call.

Arminda Guerra Lopes IPCB 💶



Arminda Guerra Lopes has been a professor at the Polytechnic Institute of Castelo Branco, Portugal, for twenty-five years. Arminda holds a PhD in Human-Computer Interaction from Leeds Metropolitan University in the U.K.









Fábio Mendonça UMa 🟴



Cristina Sylla has a PhD in Educational Technology, a Master Degree in Technology and Digital Art, and a Master Degree in Literary Studies. She is a principal researcher at the Research Centre in Child Studies, University of Minho, and a collaborator at the Interactive Technologies Institute.

Elisângela Brito Pessôa Vilar holds a PhD in Ergonomics and Human Factors and a Post-Doc in Design (ULisboa). She is a research assistant at the Lisbon School of Architecture, University of Lisbon, and an integrated member of the CIAUD – Research Centre in Architecture, Urbanism and Design. She is also a collaborating researcher at the Interactive Technologies Institute.

Fábio Mendonça received the BS and MSc degrees in electrical and telecommunications engineering from the University of Madeira and the PhD degree in electrical and computer engineering from Instituto Superior Técnico in partnership with Carnegie Mellon University. He works at the University of Madeira and is a researcher with the Interactive Technologies Institute.

Francisco Rebelo FA-UL



Frederico Duarte



Hildegardo Noronha UMa 🏴



Jean Rosa CMF 🌌



Marco Neves FA-UL



Francisco Rebelo is an Associate Professor at the School of Architecture, University of Lisbon, and holds a PhD in Ergonomics – Human-Centred Design from Universidade de Lisboa, aggregated in Ergonomic Design at the same University.

Frederico Duarte studied communication design and worked as a graphic designer in Portugal, Malaysia, and Italy. In 2010 he graduated from the School of Visual Arts in New York with an MFA in design criticism, and in 2021 he concluded his PhD in curatorship at Birkbeck College, University of London and the Victoria & Albert Museum.

Hildegardo Noronha, holds a Ph.D. in Computer Science - Human-Computer Interaction, from Universidade da Madeira. He also holds a BSc and an MSc degree in the same area from the same University. He has been researching since 2012 at Universidade da Madeira and at Madeira Interactive Technologies Institute, where he was a Ph.D. candidate in the projects CEDAR and LARGESCALE. He is now a post-doctoral researcher at the Interactive Technologies Institute in the project eGames Lab.

Jean Rosa holds a Doctoral and Master's degree in Computer Science from the Federal University of Bahia (UFBA – Brazil) with an exchange internship at the Interactive Technologies Institute and a Technologist degree in Internet Systems from Tiradentes University (UNIT – Brazil). He is currently a researcher at the Interactive Technologies Institute.

Marco Neves is an Associate Professor at the Lisbon School of Architecture, University of Lisbon, where he lectures in master's and doctoral degrees. He coordinates the Interaction Design Master's degree and Design, Interaction and Visualisation research group. Marco holds a PhD and a Habilitation in Design from the University of Lisbon.

Paulo Noriega FA-UL 🗖



Pedro Neves FA-UL M











Shujoy Chakraborty UMa 🛤



Paulo Noriega holds a Doctoral degree in Ergonomics (2010, University of Lisbon), a Master's degree in Human Engineering (2001, University of Minho) and a Bachelor's degree in Psychology (ISPA 1996). Currently, he is a Professor at the School of Architecture, University of Lisbon, and a researcher at the Interactive Technologies Institute.

Pedro Soares Neves holds Bachelor's degrees in Communication Design, in Architecture and a PhD in Art Sciences from the University of Lisbon. He is the promotor of the Lisbon Urban Creativity Conference and ongoing associated International Research Topic.

Pedro Valente obtained his PhD at the University of Madeira in computer science and software engineering, where he now works in the development of information. He is a member of the Interactive Technologies Institute (ITI), where he carries out research related to the development of information systems by modelling and automatic code generation, using a model-driven architecture approach, applying and developing business process-oriented and user-centred models.

Sheikh Shanawaz Mostafa received a Ph.D. from Instituto Superior Técnico, Portugal, in 2020. He won several awards and funding and worked on biomedical signals, image processing, and hardware implementation research projects. His research interests include biomedical signal processing, image processing, natural language processing, artificial neural networks, and hardware implementations. Currently, he works as a postdoctoral research fellow in ITI with ARDITI.

Shujoy Chakraborty is an Assistant Professor of Product Design at the University of Madeira and a Faculty Researcher with the Interactive Technologies Institute research unit. Shujoy holds a Ph.D. in Design (Summa Cum Laude) from Politecnico di Milano, specialised in Product Semantics and Shape Coding, focusing on the design of next-generation home appliances. Teresa Furtado FBA-UL 🏴



Teresa Furtado is an artist and Associate Professor at the Department of Visual Arts and Design of the School of the Arts at the University of Évora. She is an integrated member of the Centre for Art History and Artistic Research (CHAIA) at the University of Évora (UÉ) and a collaborator of ITI/LARSYS, CIEBA/FBAUL and CICS.NOVA research centres. She has a degree in Painting (FBAUL, PT), a MA in Printmaking (RCA, UK), a PhD in Sociology (NOVA, PT) and a PhD in Fine Arts-Multimedia (FBAUL, PT).

International Collaborators

Adriana Mendonça UCB 🛤



Antonio Ravelo ULPGC 🏴



Catia Prandi UBol 💵



Deborah Castro UGro 📁



José Nocera UWL ■



Adriana worked as a lecturer at the University of Cape Verde from 2004 to 2016. Furthermore, she held the position of National Director of Education in Cape Verde. Currently, she serves as a collaborating researcher at the Interactive Technologies Institute and as the Director of Research at TeSp Learning, actively engaging in research related to Educational Technologies and Special Education in collaboration with institutions in the UK and Sweden.

Antonio Gabriel Ravelo García (PhD) is an Associate Professor in the Department of Signal and Communications at the University of Las Palmas de Gran Canaria. He has participated in different research projects and has published numerous papers in scientific journals and conferences. His research interests include biomedical signal processing, nonlinear signal analysis, data mining and sensor-based systems.

Catia Prandi is a Senior Assistant Professor at the Departments of Computer Science and Engineering (DISI) of the University of Bologna (Italy). She is also an external collaborator at the Interactive Technologies Institute since 2016.

Deborah Castro is an Assistant Professor in Media Studies at the Centre for Media and Journalism Studies, University of Groningen (The Netherlands) and a research fellow at ITI-LARSyS (Portugal). In 2015, she received her PhD in Communication at Autonomous University of Barcelona.

José Nocera is an affiliate Full Professor at the Interactive Technologies Institute, a Professor in Sociotechnical Design, and Head of the Sociotechnical Group for Innovation and User Experience at the University of West London. He is the current Vice Chair for IFIP TC 13 for Equity and Development and Chair for the British Computer Society Sociotechnical Specialist Group.

Nuno Correia UTallin 🏴



Nuno Otero UGre 🏴



Pedro Sanches UUmea 🟴



Sabrina Scuri PoliMi 💵



Sónia Matos U Bolzano 🏴



Teresa Almeida UUmea 🟴



Nuno N. Correia is an Associate Professor in Digital Transformation at Tallinn University. Since 2000, he has been teaching and conducting research in media art and interaction design in several universities internationally. He holds a PhD in Art and Design in New Media from Aalto University (Finland). Nuno is a visiting lecturer at Aalto University and an associated researcher at the Interactive Technologies Institute.

Nuno Otero joined the University of Greenwich in 2022 as a Senior Lecturer. He holds a bachelor's degree in Psychology from ISPA, Portugal, and PhD from the University of Sussex, UK. He has held posts in teaching and research at INESC-ID (Portugal), University of Hertfordshire (UK), University of Minho (Portugal), and Linnaeus University (Sweden).

Pedro Sanches is an Assistant Professor at the Department of Informatics, Umeå University in Sweden. He received his Ph.D. in Information and Communication Technology from KTH Royal Institute of Technology, in Sweden.

Sabrina Scuri holds a PhD in Design from the Polytechnic University of Milan, where she is currently employed as a Researcher on a project concerned with urban regeneration. From 2017 to 2020, Sabrina was a post-doctoral Researcher at the Interactive Technologies Institute, where she worked on several research projects concerned with Sustainability and HCI.

Field Guide's Principal Investigator, Sónia develops work that intersects design research and environmental education. She is an Affiliate Researcher of ITI-LARSyS and is currently a Lecturer at the School of Design at the University of Edinburgh.

Teresa Almeida received a PhD in HCI/Interaction Design from Newcastle University, UK. She was a post-doctoral researcher at KTH Royal Institute of Technology in Stockholm and the IT University of Copenhagen in Denmark. Teresa is an Associate Professor at the Department of Informatics, Umeå University, in Sweden, and an Invited Associate Professor at Instituto Superior Técnico.

PhD students

- Alex Lima, School of Human Kinetics, University of Lisbon, supervised by Élvio Rubio Gouveia
- Ana Caraban, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Pedro Campos
- Ana Carolina Dias, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Mónica Mendes
- Ana Gariso, New University of Lisbon, Portugal, supervised by Pedro Neves
- Ana Henriques, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Sónia Rafael
- Ana Isabel Mendonça Rodrigues, University of Madeira, Portugal, supervised by Diogo Cabral and Pedro Campos.
- Ana Isabel Neto, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Hugo Nicolau.
- Ana Melo, School of Architecture, University of Lisbon, Portugal, supervised by Marco Neves
- Ana Veloso Luís, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Mónica Mendes
- Ankit Gupta, University of Madeira, Portugal, supervised by Antonio Ravelo and Morgado Dias.
- Anna Rebecca Unterholzner, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Patrícia Gouveia
- Anthony Faustine, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Lucas Pereira and Nuno Nunes
- Antonieta Tinoco, School of Human Kinetics, University of Lisbon, Portugal, supervised by Élvio Rubio Gouveia
- Ahatsham, University of Madeira, Portugal, supervised by Morgado Dias
- Alexander Kramer, University of Madeira, Portugal, supervised by Morgado Dias
- Andrés Isaza, University of Lisbon, Portugal, supervised by Lucas Pereira
- Bárbara Formiga, University of Lisbon, Portugal, supervised by Francisco Rebelo
- Bea Maggipinto, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Nuno Nunes and Valentina Nisi
- Beatriz Rodrigues Jardim Rino Peres, University of Madeira, Portugal, supervised by Hildegardo Noronha and Pedro Campos.
- Beatriz Severes Lopes, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Augusto Esteves and Mary Barreto.
- Bruno Silva, University of Madeira, Portugal, supervised by Pedro Campos.
- Camila Bandeiro Pinheiro Landim, University of Lisbon, Portugal, supervised by Francisco Rebelo
- Carla Rodrigues, School of Architecture, University of Lisbon, Portugal, supervised by Marco Neves

- Carolina Bozzi, School of Architecture, University of Lisbon, Portugal, supervised by Marco Neves
- Catarina Alexandra Reis, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Mónica Mendes
- Catarina Faria, University of Madeira, Portugal, supervised by Vanessa Cesário and Pedro Campos
- Cristiano França, University of Madeira, Portugal, supervised by Frederica Gonçalves and Pedro Campos
- Daniel Cabezas, Open University of Catalunya, Spain, supervised by Jose Nocera
- Décio Alves, University of Madeira, Portugal, supervised by Fábio Mendonça and Morgado Dias and Sheikh Mostafa
- Diana Carvalho, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Patrícia Gouveia
- Dinarte Vasconcelos, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Nuno Nunes
- Diogo Freitas, University of Madeira, Portugal, supervised by Morgado Dias
- Duarte Neto, University of Huelva, Spain, supervised by Élvio Rubio Gouveia
- Duarte Sousa, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Pedro Campos
- Eduardo Câmara Gomes, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Augusto Esteves and Lucas Pereira
- Emerson Bruno de Oliveira Gomes, University of Lisbon, Portugal, supervised by Francisco Rebelo
- Filipa Rocha, Faculty of Sciences, University of Lisbon, Portugal, supervised by Hugo Nicolau
- Filipe Cruz, School of Architecture, University of Lisbon, Portugal, supervised by Marco Neves
- Filipe Tomé, University of Beira Interior, Portugal, supervised by Ana Pires.
- Francisco José Suarez Díaz, University of Las Palmas de Gran Canaria, Spain, supervised by Antonio Ravelo
- Francisco Martins, University of Coimbra, Portugal, supervised by Élvio Rubio Gouveia
- Francisco Maria Galamba Ferrari Calisto, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Nuno Nunes
- Honorato Sousa, University of Coimbra, Portugal, supervised by Élvio Rubio
 Gouveia
- Ima Kusumawati Hidayat, School of Architecture, University of Lisbon, Portugal, supervised by Paulo Noriega and Francisco Rebelo.
- Inês Santos Silva, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Hugo Nicolau
- Isabelle Arvers, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Patrícia Gouveia

- Isoken Osagie, University of West London, UK, supervised by Jose Nocera
- João Pedro Costa, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Mónica Mendes
- José Miguel Santos Ribeiro, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Nuno Nunes
- Jéssica Corujeira, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by José Luís Silva
- Jiayu Zeng, University of Lisbon, Portugal, supervised by Francisco Rebelo
- João Pedro Rodrigues Gois, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Lucas Pereira and Nuno Nunes
- Jorge Forero, Faculty of Engineering, University of Porto, Portugal, supervised by Mónica Mendes
- José Rúben Freitas, University of Madeira, Portugal, supervised by Morgado Dias
- Katharina Buckmayer, University of Lisbon, Portugal, supervised by Hugo Nicolau and Ana Pires
- Laís dos Santos Lopes, University of Madeira, Portugal, supervised by Pedro Campos
- Lorena Ramos Lomba, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Patrícia Gouveia
- Maria de Lourdes Pilay, School of Architecture, University of Lisbon, Portugal, supervised by Marco Neves
- Marina Vasconcelos de Carvalho, School of Architecture, University of Lisbon, Portugal, supervised by Paulo Noriega
- Mário Bruno Pais Brandão Cruz, University of Lisbon, Portugal, supervised by Francisco Rebelo
- Marta Ferreira, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Nuno Nunes and Valentina Nisi
- Neeta M Khanuja, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Nuno Nunes and Valentina Nisi
- Nicole Ferrer, Federal University of Pernambuco, Brazil, supervised by Elisângela Vilar
- Noha Mokhtar, University of Lisbon, supervised by Augusto Esteves
- Nurha Yingta, University of West London, UK, supervised by Jose Nocera
- Omar Valdiviezo, School of Architecture, University of Lisbon, Portugal, supervised by Marco Neves
- Padideh Pezeshki, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Sónia Rafael
- Parisa Saadati, University of West London, UK, supervised by Jose Nocera
- Paula Malamud, School of Architecture, University of Lisbon, Portugal, supervised by Marco Neves
- Patrícia Piedade, University of Lisbon, Portugal, supervised by Hugo Nicolau
- Preety Baglat, University of Madeira, Portugal, supervised by Morgado Dias

- Rafaela Martins Nunes, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Patrícia Gouveia
- Rosa Luna, School of Architecture, University of Lisbon, Portugal, supervised by Marco Neves
- Rosa Retuerto, School of Architecture, University of Lisbon, Portugal, supervised by Sónia Rafael
- Rui Xavier, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by José Luís Silva
- Rute Luz, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by José Luís Silva
- Salomé Esteves, School of Architecture, University of Lisbon, Portugal, supervised by Marco Neves
- Sandra Olim, New University of Lisbon, Portugal, supervised by Valentina Nisi
- Seyed Mohsen, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Sónia Rafael
- Shuhao Ma, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Nuno Nunes and Valentina Nisi
- Soraia Paulo, Instituto Superior Técnico, University of Lisbon, Portugal, supervised by Hugo Nicolau
- Teresa Veiga Furtado, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Patrícia Gouveia
- Tiago Miguel Coelho Rodrigues de Oliveira, School of Architecture, University of Lisbon, Portugal, supervised by Paulo Noriega and Francisco Rebelo
- Tiago Mindrico, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Patrícia Gouveia
- Tin Shine Aung, Faculty of Fine Arts, University of Lisbon, Portugal, supervised by Mónica Mendes
- Tochukwu Chukwu, University of West London, UK, supervised by Jose Nocera
- Zihao Wang, University of Lisbon, Portugal, supervised by Francisco Rebelo

Research projects

Overview

Table 7: ITI's Projects concluded and on-going.

Project	Funding Agency	Start year	End year	Budget (ITI)
Bauhaus of the Seas Sails	European Commission	2023	2025	609 875 €
BIG ERA Chair	European Commission	2020	2025	2 456 703 €
DCitizens	European Commission	2022	2025	551 871 €
LoGaCulture	European Commission	2023	2026	729 709 €
MEMEX	European Commission	2021	2022	210 131 €
MODINA	European Commission	2023	2024	70 783 €
Science4Girls	European Commission	2020	2022	24 761 €
SHIFT2DC	European Commission	2023	2027	281 500 €
SYNTECS	European Commission	2022	2025	225 125 €
Blockchain.PT	IAPMEI/PRR	2023	2025	863 580 €
eGames Lab	IAPMEI/PRR	2023	2025	2 033 143 €
ALAMO	FCT	2023	2024	28 727 €
BRANT	FCT	2020	2022	43 264 €
DCLGP	FCT	2023	2025	95 953€
FIELDGUIDE	FCT	2020	2022	144 397 €
kNOwHATE	FCT	2022	2023	1 619 €
LARGESCALE	FCT	2020	2021	105 228 €
nexIK	FCT	2022	2023	49 869 €
REDEMA	FCT	2020	2021	210 843 €

Project	Funding Agency	Start year	End year	Budget (ITI)
RELIABLE	FCT	2021	2022	32 608 €
SSi	FCT	2022	2023	49 312 €
BASE	Madeira 14-20	2020	2022	85 964 €
bioMask	Madeira 14-20	2022	2023	107 644 €
FIIHUB	Mac 14-20	2020	2022	102 398 €
INTERAGUA	Mac 14-20	2020	2022	160 889 €
INTERWHALE	Mac 14-20	2021	2023	193 089 €
MARITIMO TRAINING LAB	Madeira 14-20	2020	2022	388 554 €
RRSO	Madeira 14-20	2022	2023	68 324 €
SAFE	Madeira 14-20	2022	2023	90 594 €
SEEApp	Madeira 14-20	2022	2023	122 951 €
SUAVE	Madeira 14-20	2022	2023	14 521 €

Bauhaus of the Sea Sails 2023-2025



The Bauhaus of the Seas Sails intends to promote the design of complex interactions between human and more-than-human agents.

The Bauhaus of the Seas Sails will build a portfolio of demonstrator pilots: the Atlantic Tagus River Estuary, the Lagoon in the Adriatic and the Gulf of Genoa, the Atlantic Rhine–Scheldt Delta and the Öresund Strait and North Sea / Elbe River. All sites have committed to the BoSS, including large-scale initiatives that span significant coastal areas of the city/region, capable of adapting and scaling up the Horizon Europe missions' activities, creating a much-needed interconnection between the cities, rivers, seas, and oceans. These cities/regions have committed their ambitious development plans to the BoSS, including a clear leadership commitment. As such, the demonstrator pilots will serve as a reference for the broader implementation of the New European Bauhaus under the vision of the BoSS, which also includes a list of observer regions, including representatives from the outermost regions of Azores, Madeira and Canary Islands and representatives from Africa and the Americas (Brazil).

Programme: HORIZON.2.5 - Climate, Energy and Mobility

Topic: HORIZON-MISS-2021-NEB-01-01 - Support the deployment of lighthouse demonstrators for the New European Bauhaus initiative in the context of Horizon Europe missions

Funding Scheme: HORIZON-CSA - HORIZON Coordination and Support Actions

Partners: IST-ID Associação Do Instituto Superior Tecnico Para A Investigação e o Desenvolvimento (PT); Magellan Circle (PT); TBA21 – Academy (ES); Ca' Foscari University of Venice (IT); University of Malmø (SE); Genoa Municipality (IT); Het Nieuwe Instituut (DE); Delft University of Technology (NL); Marine Education Center / Naturum Öresund (SE); North Adriatic Sea Port Authority (IT); Venice Municipality (IT); IUAV University (IT); Fondazione Istituto Italiano di Tecnologia (IT); Gulbenkian Foundation (PT); Oeiras Municipality (PT); Lisbon Municipality (PT); EGTS Linieland van Waas en Hulst (BE); Deichtorhallen Hamburg (DE)

CORDIS | Bauhaus of the Sea Sails website

BIG ERA Chair 2020-2025



Enhancing the research and innovation potential of Tecnico through Blockchain technologies and design Innovation for social Good

Blockchain and distributed ledger technologies (DLT) deliver a potential that allows secure, transparent, and user-centric digital services, encourages new and advanced business models, and promotes decentralised social innovations. The EU is furthering an integrated approach for their application in various domains. To that end, the EU-funded BIG project intends to seek funding for the expansion of the research and innovation potential of the Instituto Superior Técnico of the University of Lisbon. The project will support the establishment of a digital ecosystem that will take advantage of blockchain technologies and design innovation for social good through the hiring of an ERA Chair holder. Moreover, it will support the deployment and testing of blockchain technologies in strategic application domains, aiming to increase Lisbon's potential as a European high-tech hub for the data economy.

Programme: H2020-EU.4. c. - Establishing ,ERA Chairs' MAIN PROGRAMME

Topic: WIDESPREAD-06-2020 - ERA Chairs

Funding Scheme: CSA - Coordination and support action

Partners: Instituto Superior Técnico (PT)

CORDIS | BIG ERA Chair website

DCitizens 2022 - 2025



Fostering Digital Civics Research and Innovation in Lisbon

DCitizens aims to foster Digital Civics research and innovation in Lisbon. Digital Civics is a cross-disciplinary field that posits the use of technology to empower citizens and non-state actors to co-create, take an active role in shaping agendas, make decisions about service provision, and make such provisions sustainable and resilient. Particularly how digital technologies can scaffold a move from transactional to relational service models and the potential of such models to reconfigure power relations between citizens, communities, and institutions.

Funding scheme: Horizon Europe, Twinning

Programme: HORIZON.4.1 - Widening participation and spreading excellence; HORIZON.4.1.2 - Twinning

Topic: HORIZON-WIDERA-2021-ACCESS-03-01 - Twinning

Funding Scheme: CSA - Coordination and support action

Partners: IST-ID Associação Do Instituto Superior Tecnico Para A Investigação e o Desenvolvimento (PT); Italian Institute of Technology (PT); University of Siegen (DE); Northumbria University (UK)

CORDIS | DCitizens website

LoGaCulture 2023 - 2025



Locative Games for Cultural Heritage

LoGaCulture will bring together the leaders in digital locative games, in collaboration with some of Europe's most significant cultural institutions, to enable a new generation of locative cultural heritage games through proposals for design guidance, validated ethical frameworks, and an open, extensible, and reusable set of technologies. Through a set of five interlinked case studies across four countries, the project will gather evidence from the heritage design space for interactivity, narratives, and play; look at how augmented reality and soundscapes can affect visitors' immersion; explore the place of locative heritage in the wider visitor journey through transmedia and social visiting; and explore how the barrier to authoring and deploying such systems might be lowered. The goal is to create a step change in knowledge in how to design, deploy, and maintain locative heritage games and lay the groundwork for their mass adoption by cultural institutions by allowing them to treat locative experiences that offer new forms of access and engagement as an integrated part of their existing cultural heritage work.

Programme: HORIZON.2.2 - Culture, creativity, and inclusive society; HORIZON.2.2.2 - Cultural Heritage

Topic: HORIZON-CL2-2022-HERITAGE-01-09 - Games and culture shaping our society

Funding Scheme: HORIZON-RIA - HORIZON Research and Innovation Actions

Partners: Instituto Superior Técnico (PT); IST-ID Associação Do Instituto Superior Tecnico Para a Investigação e o Desenvolvimento (PT); Trinity College Dublin (IE); Hochschule RheinMain (DE); Municipality of Funchal (PT); ECCOM – European Centre for Cultural Organisation and Management (IT); Senckenberg Museum, Frankfurt (DE); The National Trust (UK); Bournemouth University (UK); University of Southampton (UK); Office of Public Works (IE).

CORDIS | LoGaCulture website

MEMEX 2020 - 2022



MEMories and EXperiences for inclusive digital storytelling

The MEMEX project, funded by the European Union, aims to enhance our cultural heritage using digital storytelling tools that are inclusive and accessible to all. By combining memories with physical places, locations, and objects, the project seeks to foster social unity. MEMEX will employ assisted augmented reality experiences, presenting stories that interweave the memories of participating communities. The project will develop techniques to automatically or semi-automatically link images to specific locations. The focus of MEMEX is on Barcelona's migrant women, shedding light on their experiences. The project will also highlight the residents of Paris' XIX district, known for its significant immigrant community, as well as second- and third-generation Portuguese migrants in Lisbon.

Programmes: H2020-EU.3.6. - SOCIETAL CHALLENGES - Europe In A Changing World - Inclusive, Innovative And Reflective Societies; H2020-EU.3.6.3.1. - Study European heritage, memory, identity, integration and cultural interaction and translation (...), to better inform and understand the present by richer interpretations of the past; H2020-EU.3.6.3.2. - Research into European countries' and regions' history, literature, art, philosophy, and religions and how these have informed contemporary European diversity

Topic: DT-TRANSFORMATIONS-11-2019 - Collaborative approaches to cultural heritage for social cohesion

Funding Scheme: RIA - Research and Innovation action

Partners: Istituto Italiano di Tecnologia (IT); IST-ID Associação Do Instituto Superior Tecnico Para a Investigação e o Desenvolvimento (PT); NOHO Limited (IE); EY Advisory SpA (IT); Centre National de la Recherche Scientifique (FR); Michael Culture Association (BE); European Centre for Cultural Organisation and Management (IT); Fundacio Interarts per a la Cooperacio Cultural Internacional (ES); Mapa das Ideias (PT); University Ca'Foscari di Venezia (IT); Dédale Association (FR).

CORDIS | MEMEX website

MODINA 2023 - 2026



Movement, Digital Intelligence, and Interactive Audience

The project Movement, Digital Intelligence, and Interactive Audience (MODINA) aims to expand the creative possibilities for contemporary dance performances and augment the experience for the audience using digital technology – with an emphasis on exploring artificial intelligence (AI) and audience interaction, on-site and online. This aim has two interconnected approaches, targeting dance artists, media artists (creative technologists) and audiences. The first approach is to build capacity for dance artists and media artists regarding new digital and AI-based approaches in dance – for preparing, performing, distributing, and re-purposing dance works (including online) – through collaboration between artists, technologists, and our team. The second approach is to allow audiences to engage with performances in an augmented way: enhancing the stage context with technology; using audience interaction strategies; through online channels; or a combination of these. MODINA will involve multiple events to engage with artists and audiences: Artistic Residencies; Networking Events; Workshops; Seminars; and Performance Showcases.

Programme: CREA - Creative Europe Programme

Topic: CREA-CULT-2022-COOP-2 - European Cooperation projects Medium Scale

Funding scheme: CREA-LS CREA Lump Sum Grants

Partners: Tallinn University (EE); Soltumatu Tantsu Uhendus (EE); Hochschule Dusseldorf (DE); Tanzhaus Nrw Ev (DE); IST-ID Associação Do Instituto Superior Tecnico Para a Investigação e o Desenvolvimento (PT); Center Urbane Kulture Kino Siska (SI); Trafo Kortars Muveszetek Haza (HU); Centrul National Al Dansului Bucuresti (RO).

CORDIS | MODINA website

Science4Girls 2020 – 2022



Making science attractive to female students through open science schooling focused on climate change

The overall and most significant innovation of Science4Girls is that it is the first practice-based project in the EU to systematically use climate change engagement to allow young female students to create fundamentally new images of science, allowing them to reconcile science learning and a life in science with the development of female identities.

This innovation is underpinned by the methodological application of open science schooling – the key Commission approach to the highly needed innovation of science education in schools. OSS will allow female students to leave traditional, rather theoretical science instruction and work with real-life science and real-world community concerns. Through collaboration with the relevant local communities the girls will be able to work in climate change learning missions designed by them, and to the extent possible fulfil the goals established by themselves defined in the learning missions.

Programme: Erasmus +

Topics: Gender Equality / Equal Opportunities; Environment and Climate Change; Pedagogy And Didactics

Key Action: Cooperation for innovation and the exchange of good practices

Partners: Institut de Vilafant (ES); ITA-SUOMEN YLIOPISTO (FI); Lacko Internationella Grundskola AB (SE); Pasvalio Levens pagrindine mokykla (LT); Scoala Gimnaziala Gheorghe Titeica (RO); SREDNJA ELEKTRO-RACUNALNISKA SOLA MARIBOR (SI); Universidade de Lisboa (PT); Working with Europe/Treballant amb Europa Associació (ES).

CORDIS | Science4Girls website

SHIFT2DC 2023 - 2027



SHIFT to Direct Current

The SHIFT to Direct Current (SHIFT2DC) project is a forward-thinking initiative focused on revolutionizing the way we use electricity. Its main objective is to promote the use of direct current (DC) power solutions at both medium voltage (MV) and low voltage (LV) levels, making our electrical systems more efficient and sustainable.

SHIFT2DC takes a comprehensive approach, covering design, simulation, testing, validation, and application of DC solutions. It's not limited to a specific industry, which makes it versatile and adaptable across various sectors. This project will evaluate the feasibility, cost-effectiveness, environmental impact, and overall benefits of implementing DC solutions.

The proposed solutions will be tested in different environments, including ports. Port facilities typically have unique energy demands due to their extensive operations, making them an essential focus. The project will explore how DC power can improve efficiency, lower costs, and reduce environmental footprints in port operations.

Programme: HORIZON -CL5 - Climate, Energy and Mobility

Topic: HORIZON-CL5-2023-D3-01-11 — Demonstration of DC powered data centres, buildings, industries, and ports

Funding scheme: HORIZON-IA - HORIZON Innovation Actions

Partners: INESC ID – Instituto de Engenharia de Sistemas e Computadores, Investigação e Desenvolvimento em Lisboa (PT); Électricité de France (FR); CNET Centre For New Energy Technologies SA (PT); Fundacion Tecnalia Research & Innovation (ES); Rheinisch-Westfaelische Technische Hochschule Aachen (RWTH Aachen) (DE); Fraunhofer Gesellschaft zur Forderung der Angewandten Forschung EV (DE); Schneider Electric Industries SAS (FR); DC-Systems B.V. (NL); Nexans France (FR); Nexans Sweden (SE); Fundacion Circe Centro de Investigacion de recursos Y Consumos Energeticos (ES); Watt & Well (FR); Tallinna Tehnikaülikool (EE); Bachmann GmbH (DE); Hiro Microdatacenters B.V. (NL); Eaton Industries GmbH (DE); Eaton Elektrotechnika SRO (CZ); Eaton Industries (AT); Hitachi Energy Spain SAU (ES); Phoenix Contact Electronics GmbH (DE); Phoenix Contact Power Supplies GmbH (DE); Phoenix Contact GmbH & Co. KG (DE); APRAM – Administração dos Portos da Região Autónoma da Madeira, SA (PT); IST-ID Associação do Instituto Superior Técnico para a Investigação e Desenvolvimento (PT); JJ Cooling Innovation Sàrl (CH); PCB Design Kutato ES Fejleszto Korlatolt Felelossegu Tarsasag (HU); European Heat Pump Association (BE); Fincantieri SI SPA (IT).
SYNTECS 2022 - 2025



Sustainably and Digitally-Driven Hierarchical Laser Texturing for Complex Surfaces

SYNTECS brings together a consortium of industry leaders and academic and research organisations at the forefront of laser-based processing. SYNTECS is designed to tackle the multiple challenges experienced with current chemical and mechanical surface treatments. SYNTECS aims to develop and demonstrate a digital and green laser texturing approach to generating complex multifunctional surfaces. A machine platform will be developed (TRL6) that enables interchangeable Direct Laser Writing (DLW), Direct Laser Interference Patterning (DLIP) and Laser Induced Periodic Surface Structuring (LIPSS), with a multi-axis motion stage for processing complex geometries and an inline monitoring and control system. The combined system will streamline the generation of hierarchical surface textures, i.e., textures which combine at least two significantly different-sized features.

Programme: HORIZON.2.4 - Digital, Industry and Space MAIN PROGRAMME; HORIZON.2.4.1 - Manufacturing Technologies

Topic: HORIZON-CL4-2022-TWIN-TRANSITION-01-02 - Products with complex functional surfaces (Made in Europe Partnership) (RIA)

Partners: Laser Engineering Applications SA (BE); Fusion Bionic Gmbh (DE); Farplas Otomotiv Anonim Sirketi (TR); 3 Drivers - Engenharia, Inovacao Eambiente Lda (PT); Centro Ricerche Fiat Scpa (It); Depuy Ireland Unlimited Company (IE); Centre Technique Industriel De La Plasturgie Et Des Composites (FR); IST-ID Associação do Instituto Superior Técnico para a Investigação e Desenvolvimento (PT); European Federation for Welding Joining and Cutting (BE); the Manufacturing Technology Centre Limited (UK); the University of Birmingham (UK); Iconiq Innovation Ltd (UK); European Thermodynamics Limited (UK).

Funding Scheme: RIA - Research and Innovation action

CORDIS | SYNTECS website

Blockchain.PT 2023-2025

Agenda "Descentralizar Portugal com Blockchain

The agenda "Decentralizing Portugal with Blockchain" creates a national blockchain ecosystem, emphasizing the importance of technology as a driver of innovation and aiming to seize global business opportunities generated by this technology. We have brought together 56 organizations (24 companies, 15 research and innovation entities, 2 associations, 5 public entities, and 10 associated partners), under the leadership of VOID Software, organised into 6 vertical work packages (Agriculture and Agri-food; Health; Sustainable and Smart Territories; Sports, Leisure, and Culture; New Knowledge Economy; Digital Asset Management) and 4 horizontal work packages (Management; Empowerment; Innovation and Dissemination; Interoperability). The results of these partnerships, with an investment exceeding 72 million euros, will enable the launch of 26 products with high export potential and scalability. The ecosystem created in this agenda will allow Portugal to become a European leader in this technology, helping the country become more digital, green, and resilient.

Dimension: Resilience

Component: Research and Innovation

Funding: Plano de Recuperação e Resiliência Agendas - Mobilising Alliances for the Reindustrialisation

Partners: Universidade Nova De Lisboa (PT); Zhartabal Enterprise, LDA (PT); Symbolic Protocol, S.A. (PT); Celfocus, S.A. (PT); Sensefinity, Lda. (PT); Enredo Imparcial LDA (PT); Oestecim (PT); INESC ID - Instituto De Engenharia De Sistemas E Computadores, Investigação E Desenvolvimento Em Lisboa (PT); Taikai, S.A. (PT); Município Do Fundão (PT); Universidade De Aveiro (PT); Void Software, S.A. (PT); Associação Iscte Conhecimento e Inovação - Centro de Valorização e Transferência de Tecnologias (PT); Instituto Politécnico De Leiria (PT); Digital Assets Anchorage, Unipessoal LDA (PT); Enredo Pacato - LDA (PT); Block Bastards, LDA (PT); V4H - Associação para a Investigação em Valor e Inovação Tecnológica em Saúde (PT); IST-ID, Associação Do Instituto Superior Técnico Para A Investigação E O Desenvolvimento (PT); SOFTI9 - Inovação Informática LDA (PT); Unlock Decentralization, LDA (PT); BETA-I Collaborative Innovation, LDA (PT);Inforlândia, SA (PT); INESC TEC-Inst.Eng.De Sistemas E Computadores, Tecnologia E Ciência (PT); INEGI - Instituto de Ciência e Inovação em Engenharia Mecânica e Engenharia Industrial (PT); GHP - Global Health Platform, S.A. (PT); Toolpor LDA (PT); Instituto Politecnico Da Guarda (PT); Instituto Politécnico De Tomar (PT); Load Interactive, LDA (PT); Associação Para O Pólo Das Tecnologias De Informação, Comunicação E Electrónica - TICE.PT (PT); Instituto Superior Tecnico (PT); Wegenblock, LDA (PT); Centro Hospitalar Universitário de Santo António (PT); INOVINESC INOVAÇÃO (PT); MC Shared Services, S.A. (PT); CIM das Beiras e Serra da Estrela (PT); E2TECH LDA (PT);

About Blockchain.PT

eGames Lab 2022 – 2025



The eGames Lab aims to build capacity for retaining in the country a young, welltrained generation of different backgrounds: design, storytelling, engineering, marketing, and fine arts. It will also attract key stakeholders to Portugal and create a long-lasting sustainable ecosystem for game design and development, playtesting, and successfully bringing the results from creative research and development efforts in interactive entertainment to market.

Dimension: Resilience

Component: Research and Innovation

Funding: Plano de Recuperação e Resiliência Agendas - Mobilising Alliances for the Reindustrialisation

Partners: Município do Funchal (PT); Associação Comercial E Industrial Do Funchal-Camara De Comercio E Industria Da Madeira (PT); YACOOBA - Turismo, Lazer E Tecnologia, LDA (PT); IST-ID, Associação Do Instituto Superior Técnico Para A Investigação E O Desenvolvimento (PT); REDCATPIG - Desenvolvimento E Comercialização, LDA. (PT); WOWSYSTEMS - Informática Lda (PT); PACT - Parque Do Alentejo De Ciência E Tecnologia, S.A. (PT); Agência De Promoção Da Cultura Atlântica (PT); FOOTAR, S.A. (PT); Startup Madeira - More Than Ideas, LDA (PT); INFINITY GAMES, LDA (PT); WALKME Mobile Solutions, LDA (PT); AFTM - Associação Do Filme, Televisão E Multimédia Da Madeira (PT); FAPPTORY- Soluções Tecnológicas LDA (PT); Dream Expectation - LDA (PT); NOS Madeira Comunicações, S.A. (PT); 4SPIRO - Sociedade De Consultoria, LDA (PT); SOLVIT -Innovation & Development On Telecommunications, LDA (PT); GREENER ACT, LDA (PT); Subtlenomad Unipessoal LDA (PT); Jupiter Wisdom LDA (PT); Associação De Jovens Empresários Madeirenses - AJEM (PT).

About eGames Lab | eGames Lab website

ALAMO 2023 - 2024



Accurate Federated Learning with Uncertainty Quantification for DER Forecasting Applied to Smart Grids Planning and Operation

The ALAMO project aims to address the challenges posed by the increasing integration of Distributed Energy Resources (DERs) into power grids while ensuring the privacy of consumers and accounting for uncertainties in forecasting models. The primary objectives include the development of accurate forecasting algorithms using Federated Learning, quantification of epistemic and aleatoric uncertainty in these models, and their integration into operational planning tools for Distribution System Operators (DSOs). Current planning tools lack privacy considerations and do not adequately account for uncertainties, rendering them obsolete in the context of growing renewable energy sources (RES) connected to distribution systems. This project also emphasizes the importance of coordination between Transmission System Operators (TSOs) and DSOs, especially in services like frequency regulation and congestion management. Additionally, it addresses the incorporation of uncertainties in Peer-to-Peer (P2P) energy markets, which are becoming increasingly prevalent.

Funding scheme: Fundação para a Ciência e Tecnologia

Partners: Associação do Instituto Superior Técnico para a Investigação e o Desenvolvimento (PT); INESC-ID - Instituto de Engenharia de Sistemas e Computadores, Investigação e Desenvolvimento em Lisboa (PT).

BRANT 2018 – 2021

Belief Revision Applied to Neurorehabilitation Therapy

Cognitive deficits are common after brain injury, dementia, and normal cognitive decline due to aging. These impact the performance of activities of daily living and limit people's independence, with a high monetary and societal cost. Cognitive rehabilitation has been shown to be the most effective way to address this problem. However, current rehabilitation has some limitations: a) Rehabilitation tools are not adaptive and may not be adequate for every patient. A suboptimal set of exercises limits the impact of rehabilitation and reduces engagement in rehabilitation. b) Interventions are time consuming and have a high cost and are usually implemented in clinical environments. BRaNT is an interdisciplinary effort to create a new set of ICT for at home rehabilitation that addresses scientific limitations of current practices and provides solutions for the sustainability of health systems and contributes to the improvement of quality of life of patients.

Funding scheme: Fundação para a Ciência e Tecnologia

Partners: Universidade da Madeira (PT); Universidade Nova de Lisboa (PT)

About BRANT

DCLGP

2023 - 2025

The Contemporary Portuguese Sign Language Dictionary: From the App to the Classroom

The project aims to build a digital dictionary for Portuguese Sign Language (LGP) to be used in classrooms. The project aims to have a positive impact (i) on the acquisition of LGP by Deaf children, (ii) on the consolidation of the language in Deaf young people, (iii) in language learning by family members of Deaf children and young people, (iv) as a source of information for LGP interpreters and teachers of the Deaf, and (v) in LGP learning by hearing people.

Funding scheme: Fundação para a Ciência e Tecnologia

Partners: Universidade Católica Portuguesa (UCP) (PT); IST-ID Associação Do Instituto Superior Tecnico Para a Investigação e o Desenvolvimento (PT).

DCLGP website

FIELD GUIDE 2018 - 2022

Field guide project aims to establish an improvement in the levels of scientific, conservation and environmental literacy among children and young people living in the Azores archipelago, a region of Portugal with one of the lowest school rates. Developed at the intersection of 'on-the-spot learning' and 'mobile learning', this project aims to promote educational experiences that can have a positive impact on the region. Through the design of a mobile application (app.), The project aims to provide a new generation with an opportunity to explore, learn and monitor the natural environment surrounding it. An application will be designed to interact with biodiversity and environmental monitoring portals and existing databases. Also use the power of geographic location to foster the understanding of the natural world by young people and children in the Azores, making them aware of the uniqueness and fragility of oceanic island ecosystems.

Funding scheme: Fundação para a Ciência e Tecnologia

Partners: Fundação Gaspar Frutuoso (PT)

About FIELD GUIDE

KNOwHATE 2022 – 2024



Knowing Online Hate Speech

Despite the Union's effort to fight against online hate speech (OHS), several reports showed an increase in OHS during 2020-21. The current pandemic provided a context for increased scapegoating and stigmatisation, and minority groups are disproportionally targets of hatred discourse. OHS is a persistent threat to the Union's values, and there is a need for more knowledge on its content, detection, and countering, as highlighted in the current Call. Portugal, like other member states, has seen an escalation of hate speech against immigrants, racial/ethnic groups, and LGBTIQ communities.

However, there is no systematised knowledge nor tools designed to detect, monitor, and prevent OHS in these communities. Our project aims at addressing this need, offering a comprehensive, participatory, and culturally sensitive approach to analyse, detect, and counter, direct and indirect OHS in the Portuguese language.

Programme: Citizens, Equality, Rights and Values Programme (CERV)

Topic: CERV-2021-EQUAL

Type of action: CERV Project Grants

Partners: Iscte - Instituto Universitário de Lisboa (PT); INESC ID - Instituto De Engenharia de Sistemas e Computadores, Investigacao e Desenvolvimento Em Lisboa (PT); Associação ILGA Portugal (PT); Casa do Brasil Lisboa (PT); Alto Comissariado para as Migrações I.P. (PT); IST-ID Associação Do Instituto Superior Tecnico Para a Investigação e o Desenvolvimento (PT).

CORDIS | KNOwHATE website

LARGESCALE 2018 – 2021

This project aims to explore the potential of Augmented Reality (AR) devices as new tourist products in regions like Madeira and Lisbon, which heavily rely on tourism for their economies. Currently, these regions have established themselves with ten strategic tourism products, but there is room for improvement through virtual and digital tourism markets. LARGESCALE seeks to investigate the mobility and engagement of tourists and locals by proposing Location-Based Augmented Reality Devices (LARGs) to enhance the exploration of culture, craftsmanship, and points of interest. These LARGs will vary based on time, location, and weather conditions, offering tourists diverse interactions at each point of interest. By leveraging geolocation applications, especially among younger tourists, the project aims to promote physical activity, support local craftsmanship, and boost the local economy in lesser-known areas. The primary objectives include advancing LARG design and development, understanding their data collection capabilities for tourism-related information, and exploring new business models that harness LARGs for tourism enhancement while benefiting creative industries and ICT. This research plan addresses key questions regarding LARG design challenges, their impact on tourism, and the emergence of new business models, all of which can significantly affect the tourism sector's spatial-temporal dynamics.

Funding scheme: Fundação para a Ciência e Tecnologia

Partners: Instituto Superior Técnico (PT)

About LARGESCALE

MOBEYBOU + OUT M[™] B≦YB[™] U × [™] U 2018 – 2025

Moving Beyond Boundaries – Designing Narrative Learning in the Digital Era & Once Upon a Time: a Kit of Tools for Fostering Children's Development of Multiliteracies, Collaboration Skills, and Intercultural Sensitivity

These projects aim to investigate (i) to which extent the use of a kit of innovative multimodal digital tools for the co-creation of cross-cultural narratives can promote the development of multiliteracies, collaboration skills, and intercultural sensitivity in Early Childhood, (ii) and how teachers/educators can support children in this learning. The tools have been developed in the Mobeybou (MBB) project, a funded R&D multidisciplinary project that aims to fill the gap between current school practices and the skills and tools needed in the 21st century. While MBB developed innovative multimedia and digital tools for cross-cultural narrative creation, OUT aims to investigate its use and potential in Early Childhood Educational settings. The tools comprise a digital manipulative (DM) that uses physical blocks to manipulate the digital content, a story-maker that replicates the DM environment (without the physical blocks), and a set of story apps. DMs are objects with embedded computational properties that allow manipulating digital content. Resulting from these projects it is expected to gather a compilation of understandings and materials on (i) the potential of the tools and their interplay to foster the development of essential 21st-century learning and innovation skills in children, (ii) how children move towards intercultural sensitivity, (iii) and how educators can support children's journey, identifying opportunities and challenges to provide effective and meaningful learning mediations, with renovated teaching practices. In sum, Mobeybou is composed of a set of tools that aim at promoting the development of cognitive, social and language skills within a multicultural framework. On the other hand, OUT investigates how the Mobeybou materials can promote the development of multiliteracies, collaboration skills, and intercultural sensitivity in Early Childhood, and how teachers/educators can support children in this learning.

Funding schemes: Fundação para a Ciência e Tecnologia

Partners: Univerisdade do Minho (PT); Universidade Federal de Santa Catarina (UFSC) (BR); Aalborg University (DK)

Mobeybou website

nexIK 2022 – 2023



Exploring the Human-Water-Energy Nexus in Industrial Kitchens

Industrial kitchens (IKs) use between 5 and 7 times more energy per square meter than other commercial building spaces like office buildings and retail stores. Furthermore, studies indicate that in the EU, UK, and the US, 30% of the energy consumed in industrial kitchens is used in purely commercial establishments, e.g., restaurants and snack bars. Despite the size and ubiquity of this industry, the role of IKs in the global quest for sustainable energy systems still needs to be explored. The nexIK project will address this critical topic, proposing a new methodology to quantify the interactions between Water, Energy, and Food in IKs. Commonly known as the Water-Energy-Food Nexus (WEFN), the developed methodology will provide a holistic approach to assess the impact of IK activity on the consumption of electricity and water.

Funding scheme: Fundação para a Ciência e Tecnologia

Partners: Associate Laboratory of Robotics and Engineering Systems (LARSyS) (PT); INESC ID – Instituto de Engenharia de Sistemas e Computadores, Investigação e Desenvolvimento em Lisboa (PT).

<u>nexIK website</u>

REDEMA 2018 – 2021

Energy, in all its forms, is vital for modern and future life. Electricity powers our lives, appearing almost magically in wall outlets. Yet, behind the walls lie vast and complex energy infrastructures, often reliant on environmentally destructive fossil fuels. Our relationship with energy is minimal; electricity remains distant and ethereal. Leveraging Madeira Island's unique context, this research project employs speculative design to explore innovative energy infrastructures and interactions. It aims to rewrite the rules shaping current energy policy and behaviour, such as the dominant radial network system in Europe. By thinking beyond established constraints, this project turns Madeira Island into an energy experimentation hub, offering opportunities for customised energy systems and product interactions to foster a more sustainable and engaged relationship with energy.

Funding scheme: Fundação para a Ciência e Tecnologia

Partners: Instituto Superior Técnico (PT)

About REDEMA

RELIABLE 2020 – 2023

RELIABLE

Sistema De Aviso Em Tempo Real Do Risco Para Os Ocupantes De Edifícios Durante Eventos Climáticos Extremos

The RELIABLE project aims to create a real-time, high-spatial-resolution public dashboard for assessing health risks to building occupants during extreme weather events like heatwaves and cold waves. This initiative seeks to enhance existing warning systems in two key ways: firstly, by improving risk prediction models through machine learning algorithms applied to new public data sources, and secondly, by increasing the spatial and temporal precision of warnings down to the statistical subsection level (BGRI). This comprehensive effort involves collecting and processing data from various sources, including historical health data, high-resolution weather forecasts, updated census information, and building energy performance certificates. The culmination of these efforts will result in a new indicator model accessible via a public dashboard that provides location-specific alerts to various stakeholders and authorities, significantly improving preparedness and response during extreme weather events.

Funding scheme: Fundação para a Ciência e Tecnologia

Partners: Associação do Instituto Superior Técnico para a Investigação e o Desenvolvimento (IST-ID) (PT); ADENE - Agência para a Energia, Instituto Nacional de Saúde Dr. Ricardo Jorge (INSARJ) (PT).

RELIABLE website

SSi 2021 - 2023

Sense and Sensibility in Interactivity

To connect younger generations to nature, the SSi project explores novel approaches to promoting environmental literacy and nature connection among children and teenagers. The general materials can enhance our awareness of the natural world. The project proposes a design-led investigation of how storytelling and visual communication for interactive storytelling can promote sensory, experiential, and aesthetic encounters with nature to incite curiosity and willingness to learn about fauna and flora and to engage in their conservation. Set in the Azores, a volcanic archipelago and one of Portugal's most isolated biodiversity hotspots that faces today significative challenges as climatic shifts alongside human intervention negatively impacts indigenous species, the SSI project will design, test, and evaluate mediated experiences that expose participants to local biomes.

Funding scheme: Fundação para a Ciência e Tecnologia

Partners: Instituto Superior Técnico (PT); Free University of Bozen-Bolzano (IT); University of Açores (PT); Centre for Ecology, Evolution and Environmental Changes (PT).

<u>SSi website</u>

BASE 2021-2023

Banana Sensing

This project aims to comprehensively evaluate the banana tree's production cycle through sensor-based monitoring, encompassing factors like land location, size, plant count, and cultivation conditions to provide vital data for GESBA's banana product commercialization. Concurrently, continuous sensor monitoring will identify key variables influencing banana growth, enabling improvements in product quality. Additionally, recognizing the need to enhance banana bunch transportation under challenging conditions, the project seeks to automate this process using a cable car system, alleviating the physical burden on farmers. The project's three primary objectives include georeferencing cultivable land, conducting detailed sensor-based analysis of the production cycle, and implementing an automated transport system to optimize banana production and quality while addressing logistical challenges.

Funding scheme: MADEIRA - PRODERAM 2020 - Manutenção Da Atividade Agrícola Em Zonas Desfavorecidas

Partners: GESBA-Empresa de Gestão do Sector da Banana, Lda. (PT); ARDITI -Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação (PT); ALTICE Labs (PT); Universidade da Madeira (PT).

About BASE

bioMASK 2022 - 2023

The bioMASK project aims to utilize banana stem by-products from Madeira's abundant banana production to create a biodegradable, washable, and filterable FFP2 mask with a filtration efficiency against 0.1-micron viral particles. This project seeks to address the issue of medical waste and plastic pollution caused by single-use FFP masks. It has three key objectives: 1) Developing biodegradable nano-filter materials using banana and cotton textiles, 2) Applying human-centred design principles to optimize user comfort and functionality of the bioMASK FFP2, and 3) Empowering a local medical products company in Madeira with technical knowledge to produce FFP2 masks and gain recognition within the EU medical products sector.

Funding scheme: ProCiência

Partners: The Biomask Company (PT); Universidade da Madeira (PT); ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação (PT).

About bioMASK

FiiHUB 2019 – 2022



Fiware Digital Innovation HUB for Business Acceleration

The general objective of the FiiHUB project is to create and execute the first technological reference centre for the development of the business and entrepreneurship ecosystem of Macaronesia, linked to the development of intelligent services integrated into the technologies of the Internet of the Future and linked to the international network of FIWARE iHub.

Funding Scheme: PO-MAC

Partners: Cabildo Insular de La Palma (ES); Asociación de Empresas Tecnológicas Innovalia (ES); FGULL - Fundación General Universidad de La Laguna (ES); SPEGC - Sociedad de Promoción Económica de Gran Canaria, S.A.U. (ES); M-ITI - Madeira Interactive Technologies Institute (PT); FRCT - Fundo Regional para a Ciência e Tecnologia dos Açores (PT); CCIPD - Câmara do Comércio e Indústria de Ponta Delgada (PT); ACIF - Câmara de Comércio e Indústria da Madeira (PT); Associação NONAGON – Parque de Ciência e Tecnologia de S. Miguel (PT); NOSI-EPE - Núcleo Operacional de Sociedade para Informação, Entidade Pública Empresarial) (CV); Universidade de Cabo Verde (CV)

FiiHUB website

INTERAGUA 2020 – 2022



INTERTAGUA project is mainly focused on the development and improvement of low-cost sensor systems for monitoring biodiversity and the oceans, as well as related human and economic impacts. The project aims to install sensors of animal origin in different mega-fauna of the Macaronesia Islands, from Cape Verde to the Canary Islands, Madeira, and Azores.

Funding scheme: Programa de Cooperación INTERREG V-A España-Portugal MAC (Madeira-Azores-Canarias)

Partners: Plataforma Oceánica de Canarias (PLOCAN) (ES); ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação (PT); Direção Regional dos Assuntos do Mar (DRAM) (PT); Instituto das Florestas e Conservação da Natureza, IP-RAM (IFCN) (PT).

INTERAGUA website

INTERWHALE 2021 – 2024

INTERWHALE is a project aiming to reduce costs, pollution, and stress on marine species by developing near real-time technology for off-shore data collection and on-shore interactive exploration. This initiative aligns with UN Sustainable Development Goal 14, focusing on minimizing human impact on marine ecosystems. It comprises three main objectives: SENSE involves utilizing Internet of Things (IoT) devices on sea vessels to gather whale-related data, challenging current IoT sensing capabilities. TRANSMIT utilizes Long-Range (LoRa) radio protocol to transmit collected data from sea vessels to onshore locations in near real-time, advancing aquatic surface telemetry. SIMULATE employs Human-Computer Interaction (HCI) to create immersive on-shore interfaces displaying the collected whale data, with a focus on geodesic domes and Augmented Reality (AR) to study their impact on pro-environmental attitudes.

Funding scheme: Fundação para a Ciência e Tecnologia

Partners: ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação (PT).

About INTERWHALE

MTL 2019 – 2022



Marítimo Training Lab

Marítimo SAD relies heavily on the commercial transactions of its professional football players' passes as its primary source of income, making it susceptible to financial risks due to potential injuries that can occur at any time. To mitigate these risks, the organization emphasizes the importance of assessing and monitoring athletes' workloads during training and competitions throughout the season to tailor exercises and prevent overuse injuries. Furthermore, the establishment of the "Marítimo Training Lab" aims to nurture talent using high-quality tools, ultimately improving the club's investment potential in player transfers to other clubs. This approach offers a fresh perspective on resource utilization, providing practical metrics to evaluate the intricate relationships between training, performance, and player development.

Funding scheme: PROCiência 2020

Partners: Marítimo da Madeira - Futebol – SAD (PT); Universidade da Madeira (PT); ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação (PT).

MTL website

RRSO 2022 – 2023

Restaurant Review Sentiment Output

In collaboration between the University of Madeira, ARDITI, and Zomato Portugal, this project aims to harness the extensive user opinion database of Zomato Portugal to create a powerful tool. Fuelled by a proprietary algorithm, this tool will accomplish several key objectives: 1) It will detect sentiment trends (both positive and negative) within user reviews; 2) It will pinpoint specific areas for improvement and streamline analysis of user-provided opinions; 3) It will enable macro sentiment analysis across different geographical regions; 4) It will provide valuable insights for Zomato's business development by enhancing the process of restaurant consultation through opinion analysis, making it faster, more reliable, and precise; 5) It will equip restaurants on the platform with autonomous trend detection and business improvement tools.

Funding scheme: PROCiência

Partners: ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação (PT); University of Madeira (PT); Zomato Portugal (PT).

About RRSO

SAFE 2022 - 2023

Safe Football Entrance

This project aims to create a multifunctional information and communication platform designed to manage football fans' access to stadiums during pandemics while enhancing their real-time match experience. It involves a multidisciplinary collaboration of experts in human-computer interaction, engineering, health sciences, sports sciences, computer sciences, and design to develop a mobile app tailored to the Autonomous Region of Madeira. The app serves a dual purpose: effectively responding to infectious disease outbreaks like COVID-19 and enriching fans' match experiences through real-time data and gamification elements, ultimately improving their understanding of game events.

Funding: PROCiência

Partners: VGPC, Lda. (PT); ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação (PT); University of Madeira (PT).

About SAFE

See_App 2021 – 2023



Saúde Escolas - Projeto de Monitorização em Saúde

The project's primary goal is to develop and deploy a mobile health app tailored for the educational community of the Madeira Autonomous Region, with a particular focus on monitoring and responding to infectious disease outbreaks like COVID-19. This app aims to enhance communication between health authorities, such as the Regional Directorate of Health, and educational institutions. By fostering multidisciplinary collaboration involving experts in public health, computer engineering, design, and education, the project seeks to enhance the existing mobile health app, aligning it with the unique needs of the Madeira education system. Through the implementation of this digital tool, the project strives to maximize educational benefits, improve the well-being and health of students, teachers, and the wider educational community, ultimately contributing to the prevention of infectious disease outbreaks within schools.

Funding scheme: PROCiência

Partners: SH SEE HEALTH, Lda. (PT); ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação (PT); University of Madeira (PT).

See_App website

SUAVE 2018 - 2019

Ferramentas de software e enquadramento metodológico para intervenções subliminares na saúde e turismo

The SUAVE project aims at designing digital well-being interventions in two main domains: sedentary behaviours and addictive behaviours. The project aims at abstracting the user interface elements that are deemed more effective (in terms of behaviour change for better well-being). This abstraction will lead to the design and development of a new tool for helping designers interested in building behaviour change tools for similar domains. Our strategy is experience-centred, taking insights from positive psychology, behavioural economics, and digital media design.

Funding scheme: ProCiência2020

Partners: WOWSYSTEMS - INFORMÁTICA LDA (PT); ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação (PT).

ARTIVIS 2013 - 2030

ARTiVIS

Arts, Real-time Video, and Interactivity for Sustainability

ARTiVIS – Arts and Interactivity for Sustainability – proposes to investigate innovative concepts and design methods regarding the use of interactivity for artistic exploration on environmental causes. In this exploratory project and practice-based research, we can play a role as promoters of change in people's behaviour regarding forest protection.

Funding scheme: Other

Partners: Faculty of Fine Arts of the University of Lisbon (PT); altLAb (PT)

ARTiVIS website

CETA 2021 - 2023



Ceibal Tangible

CETA (Ceibal Tangible) is a device that allows students to interact with educational content in a tangible and engaging way. Past research has shown that tangible interaction offers unique opportunities for learning while encouraging children's engagement. The project aims to leverage this potential to improve students' education quality. The project will create games for CETA and a platform for children and educators to design and develop educational activities using real objects and digital tools. Ultimately, the researchers hope that CETA will positively impact the education sector, allowing students to learn in fun and engaging ways while promoting collaborative learning.

Funding scheme: Agencia de Innnovación e Investigación (Uruguay)

Partners: Facultad de Información y Comunicación (UDELAR) (UY); Esculea de Diseño (UDELAR) (UY); Facultad de Ingeñieria (UDELAR) (UY); CICEA (UDELAR) (UY); University of Lisbon (PT).

CETA website

CyFer 2022 - 2023

Cyber Security and Privacy in Fertility Technologies

CyFer examines the cybersecurity, privacy, bias, and trust in female-oriented technologies (FemTech) focusing on apps and IoT devices. The CyFer project looks to build on the research team's previous work that demonstrated how the majority of FemTech IoT devices and apps start tracking the user right after the app is open and before any user consent, and how new sensors (e.g., on IoT devices) can put users at serious risk, yet the user perception is far less than the actual risks. The CyFer project looks to achieve its aims by (1) evaluating the security and privacy of FemTech, (2) investigating user perception and practice and (3) studying sociotechnical bias and trust in data, algorithms, and AI systems.

Funding scheme: PETRAS National Centre of Excellence for IoT Systems Cybersecurity UK

Partners: Royal Holloway University of London (UK); University of Surrey (UK); Umea University (SE); Instituto Superior Técnico (PT); University College London (UK); Lancaster University (UK); Newcastle University (UK); IT University of Copenhagen (DK); KTH Royal Institute of Technology (DE); RISE Research Institute of Sweden (SE); University of Washington (US).

CyFer website

Edu4SD 2022 - 2026



Digital Science Communication for Behaviour Change: students' sustainability literacy

This research will be developed in two phases. In first phase, the knowingness, attitudes, and behaviours (KAP) study about sustainability literacy of 13 to 18 years old students from Myanmar and Portugal, will be investigated with an online questionnaire, to set up a national baseline literacy level. In second phase, KAP survey (pre-assessment) will be performed with 8 to 10 years of schooling students from selected schools in each country. Then, digital science communication content and edutainment games focusing on sustainable consumption will be exposed and then tracked their progress with post-assessment. The main objectives of the study are: To empower students from Myanmar & Portugal to take responsibility for their actions to be sustainable; to enhance students' sustainability literacy and engagement for sustainable future with the support of digital science communication; To evaluate usefulness of digital science communication as a productive tool for a similar approach in remote learning.

Funding scheme: Other

Edu4SD website

GAGE 2021 – 2024



Game Art and Gender Equity

Description: The project intends to portray the evolution of female participation in the Portuguese gaming industry, providing a comprehensive assessment of the gaps and challenges of gender equity in this professional field. GAGE project aims to promote diversity, changing values and behaviours through inclusive practices that encourage the participation of women in this economic and cultural sector. Thus, a critique of games is proposed to mirror a binary society (M/F) where men have a preponderance in the created and developed narratives. After collecting and analysing data from empirical research, we will use animations and games to raise awareness of gender issues in this sector. In Portugal, the digital games industry has been consolidating. Operating companies are estimated to employ between 986 and 1270 workers and generate annual revenues of approximately 31 million euros. In a decade, there has been a significant increase in the offer of specific training in the area. Events related to digital games have emerged: game jams, game development camps and conferences. There is a strong masculinisation of the workforce and a greater presence of men in higher education associated with technological areas, from which most of the human resources in the industry come.

Funding scheme: Other

Partners: Faculty of Fine Arts, University of Lisbon (PT); Department of Arts and Design, University of Évora (PT); University of Porto (PT)

GAGE website

INDCOR 2018 – 2024



Interactive Narrative Design for Complexity Representations

INDCOR aims to create a network of interdisciplinary researchers across European countries to tackle societal issues through interactive digital narratives, such as video games, digital journalism, interactive documentaries, and so on. The aim of this COST action is to build a network for the interdisciplinary study of the potential interactive digital narrative has to addressing complexity as a societal challenge by representing, experiencing and comprehending complex phenomena and thus also address the issue of "fake news".

Programme: COST – European Cooperation in Science and Technology

Funding scheme: Horizon 2020, COST Action

INDCOR website

MIMBCD-UI 2023 - 2026

Multiple Instance Attention Learning for Multimodal Classification and Detection for Breast Cancer Diagnosis

This project addresses the challenging problem of breast cancer image analysis, which is of high clinical relevance. Breast cancer is the most prevalent cancer among women worldwide, and timely detection of potential lesions using medical imaging is crucial for improving survival rates. The objective of this project is to assist radiologists by providing a "second reader opinion" through a multimodal analysis system, focusing on two key tasks: (1) image classification and (2) lesion delineation. While the classification task involves assigning a score to the image, the delineation task is more demanding as it requires the radiologist to outline the lesions. To tackle these challenges, we propose a weakly supervised training approach that leverages only image-level labels. This approach enables simultaneous image classification and lesion delineation, offering a comprehensive solution for assisting radiologists in their diagnostic workflow.

Funding scheme: Fundação para a Ciência e Tecnologia

Partners: Hospital Professor Doutor Fernando Fonseca, EPE (PT); Instituto Superior Técnico - University of Lisbon (PT); INESC ID – Instituto de Engenharia de Sistemas e Computadores, Investigação e Desenvolvimento em Lisboa (PT); Associação Amigas do Peito (PT).

MIMBCD-UI website

ProDy 2021 – 2024

Knowledge Drive Profiles Dynamic

Inferring user profiles is a research area of interest with applications in, e.g., recommendation systems, and cognitive rehabilitation. User profiles are being produced mostly from data mining and machine learning approaches, which brings the challenge of providing explanations about the creation, representation, and dynamics of user profiles. This project aims to suggest a novel knowledge-based approach for user profiling and its dynamics. Thus, we suggest the use of AGM-based belief revision to dynamic of profiles to (a) provide a formal representation of user profiles; (b) describe the changes in the profiles; (c) identify what caused the changes, and (d) return the sequence of changes that will transform an original profile into a target profile. The suggested approach will be tested in real-world applications. In this view, this project will provide a significant contribution to the Explainable Artificial Intelligence area, with applications in, e.g., cognitive rehabilitation, and human-computer interaction.

Funding scheme: Fundação para a Ciência e Tecnologia

Partners: University of Madeira (PT).

ProDy website

Doctoral Graduations

- Chiara Ceccarini, "Untangle Sustainable Development Goal 8 through Data Visualization and HCI methods", 2022
- Cíntia França, "Growth, maturation and sport-specific motor skills in youth female basketball: impact of ball size and distance to the basket", 2022
- Joana Catarina Fernades Vieira, "Human-centred design of clinical auditory alarms", 2022
- Liz Sokolowski, "Investigating transparency in collaborative learning and its delivery through Scrum", 2022
- Luis Miguel Freitas, "Ultra-low noise, high-frame rate readout design for a 3Dstacked CMOS image sensor", 2022
- Paulo Bala, "Leveraging eXtented Reality & Human-Computer Interaction for User Experience in 360° Video", 2022
- Raul Masu, "Interactive Sound in Performance Ecologies: Studying Connections among Actors and Artifacts", 2022
- Régis Costa de Oliveira, "Interfaces: entre o autorretrato e a performatividade no continuum da realidade", 2022
- Terhi Marttila, "Migration as movement repurposing the voice/interface to explore aspects of human migratory movement through artistic research", 2022.
- Yanick Lambert Trindade, "Design de jogos digitais: a narrativa Santomense como elemento estruturante", 2022.
- Anna Rebecca Unterholzner, "Gaming, Art, and Emotions: The Challenges of Neuroaesthetics", 2023
- José Miguel Santos Ribeiro, "Sensing and Community Crowd Sensing using Passive Wi-Fi", 2023
- Maria José Ferreira, "Learn biodiversity using local stories to power up storytelling behaviours in social robots", 2023.
- Teresa Veiga Furtado, "Net Art as a Tool for Positive Gender Promotion: Community Multimedia Art with Women in Shelters", 2023

Masters Graduations

- Ana Andrade, "SeaStory: uma narrativa interativa com recurso a caraterísticas colaborativas", 2022
- Ana Chasqueira, "O Design de Interação no Auxílio da Ansiedade Infantil', Ana Chasqueira", 2022
- Aníbal João Lopes Chaves, "Interface gráfica para desenvolvimento de redes neuronais convolucionais probabilísticas", 2022
- Arturo José Morais Alves, "Sleep analysis through electroencephalogram cyclic alternating pattern a phase detection", 2022
- Beatriz Severes Lopes, "Designing Collaborative Technology-based Interventions for Mental Health Management", 2022
- Carine Panigaz, "Imagens da vulva na arte feminina contemporânea: contributos para a afirmação social das sexualidades das pessoas com vulvas", 2022
- Carlos Filipe Vieira Gomes, "Realidade Aumentada aplicada aos Sistemas de Combate do Soldado", 2022
- Carlos Guilherme Paixão Parreira, A influência da multissensoralidade em realidade virtual na experiência da utilização e na usabilidade", 2022
- Catarina Alexandra Rebelo Rodrigues, "Digital Tools for Critical Cultural Heritage", 2022
- Catarina Santos Correia de Almeida Ribeiro, "Blockchain technologies and small farmers, a Service design approach", 2022
- Cristian Tacoronte Rivero, "Diseño E Integración De Un Sistema Para La Detección Y Cuantificación De Lluvia Mediante Radioenlaces Terrenos Y Satelitales Aplicando Técnicas De Machine Learning", 2022
- Cristiano França, "Virtual reality environments as a therapeutic technique in rehabilitation of physical and cognitive training in soccer players", 2022
- Daniel Filipe Garcia Gonçalves, "Using Biometric Signals and Virtual Reality to Evaluate Movies and/or TV Shows", 2022
- Daniela Polo Barbosa, "Connect to disconnect overcoming perceived social isolation through interaction design", 2022.
- Darío Javier Díaz Caballero, "Diseño De Un Sistema De Detección De Calima Aplicando Técnicas De Machine Learning Sobre Imágenes De Vidiovigilancia", 2022
- David Miguel Flgueiredo Honório, "Voting system for idea evaluation: A web-based system where users can input and vote for ideas", 2022.
- Diogo Nobrega, "Battery Energy Storage System to Provide Grid Services", 2022
- Duarte Sousa, "The use of interactive communication technologies for collaborative E-mentoring", 2022

- Elena Encinas Pérez, "Diseño de un sistema de detección temprana de obstrucción del tubo endotraqueal en pacientes COVID-19 basado en machine learning", 2022
- Érica Freitas, "Anonymous Panda: preserving anonymity and expressiveness in online mental health platforms", 2022.
- Filipa Alexandra Fitas Vinagre, "Experiências interativas em realidade virtual para o ensino de conceitos complexos", 2022
- Francisco Cecílio, "Narrative-based Gamification for Physical Therapy", 2022
- Francisco Da Cruz Correia Rocha, "Improving the Learnability of Converged Multi-Level Secure Systems Through an Integrated Onboarding Tutorial", 2022
- Francisco Santos Fialho, "Power Share: Al Energy Sensor Interface for Google Home/Assistant", 2022
- Frederico Paulo Lourenço Borlido, ""Development of a visual solution for genetic data analysis communication"", 2022
- Gianni Tumedei, "Towards a Smart Campus Digital Twin: Promoting Awareness and Sustainability Through Wayfinding and Real-Time Environmental Data", 2022
- Hoana Gonçalves, "As camadas de invisível que formam um ponto de vista: um contributo artístico transmedia", 2022
- Inês Borges, "Games as Social Spaces: A Tangible Interaction Contribution for Social Anxiety", 2022
- Inês Marques, "Development of a Virtual Tour Guide Mobile Application", 2022
- Inês Matos, "Render Me": uma abordagem feminista interseccional sobre os estereótipos de género presentes no design de interação", 2022
- Isabel Santos Ramos Soares, "Vibrating colours": Crossmodal Correspondences between Haptics, Colour, and Emotions on Inclusive Social Robots", 2022
- Joana Resende da Silva, "Arte, drones e hacktivismo: o invisível visto de cima", 2022
- Joana Lameiras, "SelfStories: a College Service to Support Mental Well-Being", 2022
- Joana Pires "Design e Música Independente Portuguesa: Projeto para Divulgação da Música e dos Músicos", 2022
- Joana Nunes Pina Norte, "PELOS TEUS OLHOS: Realidade Virtual na Escola para Promoção da Empatia com Jovens Imigrantes", 2022
- João Batista Coelho Freitas, "Aumentando a usabilidade dos sistemas gestores de exposições interativas para curadores de museus", 2022
- João David Martins de Freitas, "Splinter Studio Narrative and game mechanics with context", 2022
- Jorge Amantegui, "Forecasting Electricity Consumption in Industrial Kitchens", 2022
- José Luís Cardoso Alves, "Instruções de ajuda (coach marks) e a sua validade para séniores em aplicações móveis", 2022
- José Roberto Pão Freitas, "Application of a character to interior space: studying the impact on visual perception", 2022.
- Louis Rodrigues, "Splinter Studio: modelação 3D englobando o património cultural", 2022
- Luís Carlos Gonçalves Freitas, "Extreme weather conditions dashboard", 2022
- Luís Barreira, "Supporting Mix-visual Abilities Musical Ensembles", 2022
- Mafalda Pereira, "Utilidade, usabilidade e prazer na utilização de uma aplicação para estacionamento remoto", 2022
- Manuel Pereira, "TerraSenseTK: a toolkit for remote soil nutrient estimation", 2022
- Mariana Martins Sousa, "A Realidade Virtual como forma de promover o património cemiterial: o caso do jazigo dos duques de palmela", 2022
- Mariana Ribeiro, "The Art of Storytelling: Its Importance in Video Game Immersion When Paired With Localisation", 2022
- Mariya Olena Toma, "Finding Tendencies Of Outfits For Gym Workout Based On The User Emotions: A Study Using Kansei Methodology", 2022
- Matteo Nicoli, "Application of the Service Design methodology to the development of a business operating in the food and beverage industry", 2022
- Miguel de Sousa Pereira Mendes Azinheira, "A Social Robot to Support Children's Role-play", 2022
- Miguel Pacheco Sequeira Dias, "Quantifying the Costs of Conducting Human-Computer Interaction (HCI) research", 2022.
- Miguel Pires Coelho, "Visualising the contribution of whales as a natural solution for climate change - Application with visualizations to raise awareness about the importance of whales to the atmosphere", 2022.
- Nuno Velosa, "PROCSIM: an energy community simulator to develop and evaluate load balancing schemes", 2022.
- Pedro Conceição, "A oleira e o pote. Conversas entre a sombra e a luz inspiradas pela arte de Cabo Verde", 2022
- Ricardo Martins, "Data-driven Modeling of Energy Consumption in Industrial Kitchens - Detection of activations and unsupervised classification", 2022
- Rita Lopes Silva, "One foot out of the Closet, as relações românticas na geração de 1990-2004, enquanto forma de influência social e política", 2022
- Ruben Gandus, "The cold pythia: como colocar questões filosóficas de narração interativa", 2022
- Sérgio de Pinho Dória, "Análise do bem-estar social em Lisboa através de indicadores modelados por dados Geoespaciais", 2022
- Sofia Alexandra Antunes Silva, "Imprint: Proposta Híbrida Interativa para reconfigurar Meios Impressos", 2022
- Sofia Santos, "COMMUTE: como usar o ativismo feminista e o gaming numa reflexão sobre percursos possíveis?", 2022
- Tiago de Almeida Gil, "Videojogos como inspiração para desenvolvimento da arquitetura", 2022

- Teresa Gubern González, "Análisis De Mapas De Inundabilidad De Áreas De Riesgo Potencial Significativo De Inundación (ARPSIs)", 2022
- Tiago Rafael Lucena da Silva, "Preserving Natural and Cultural Heritage with the power of Transient Non-fungible Tokens", 2022

Selected publications

2023

- Bala, P., Sanches, P., Cesário, V., Leão, S., Rodrigues, C., Nunes, N. J., & Nisi, V. (2023). Towards Critical Heritage in the wild: Analysing Discomfort through Collaborative Autoethnography. *CHI 2023 (A*)*, 1–19. <u>https://doi.org/10.1145/3544548.3581274</u>
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- Rocha, F., Correia, F., Neto, I., Pires, A. C., Guerreiro, J., Guerreiro, T., & Nicolau, H. (2023). Coding Together: On Co-located and Remote Collaboration between Children with Mixed-Visual Abilities. *CHI 2023 (A*)*, 1–14. <u>https://doi.org/10.1145/3544548.3581261</u>
- Wang, Z., He, R., Rebelo, F., Vilar, E., & Noriega, P. (2023). Human interaction with virtual reality: Investigating pre-evacuation efficiency in building emergency.
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- Tavares, A., Silva, J. L., & Ventura, R. (2023). Physiologically Attentive User Interface for Improved Robot Teleoperation. *IUI 2023 (A)*, 776–789. <u>https://doi.org/10.1145/3581641.3584084</u>
- Correia, F., Campos, J., Melo, F. S., & Paiva, A. (2023). Robotic Gaze
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