REGIONAL S+T+ARTS CENTERS

S+T+ARTS IN THE CITY

still from "Drone Aviary" Credit: Superflux

GOING WILD IN THE CITY

Challenge No. 1 by Gluon

Photo Credits: Patrice Deramaix

PROBLEM STATEMENT

While our modern cities have been progressively distancing us from nature, the latter has always remained an integral part of the urban landscape. How can we create more awareness that values the interconnection and interdependence of all living beings in the city?

KEYWORDS

Agency, Symbiocene, Urban, Biodiversity, Hybrid, Plant Intelligence, Interspecies, Wild

JURY DAY

Jury day will be digital on September 21st or 22nd, 2023.

DESCRIPTION

This residency will explore how our relationship with nature in the urban (and not limited to the peri-urban) area may be reimagined and reconfigured within what we call 'symbiotic' thinking: a term coined by Australian philosopher Glenn Albrecht to describe a hypothetical future era in which humans live in harmony with the natural world and recognize the interconnection and interdependence of all life forms.

While our modern cities may appear to distance us from nature, it has always remained an integral part of the urban landscape. Through this residency, we aim to raise citizens' awareness about the significance, variety, and resilience of natural life thriving or surviving in the Brussels region. By leveraging various digital technologies, artists can uncover and defend the wild side of the city and shed light on the vital role it plays in our lives. Ranging from urban forests, to accommodating wildlife to stopping the use of pesticides to letting plants in parks grow uncontrolled and strips of land along railway lines such as Wiels Marais in Brussels are just a few examples of rewilding types within the urban sprawl. These areas harbour flourishing animal and plant populations, offering a glimpse into the remarkable biodiversity that persists amidst concrete and steel. As we confront the challenges posed by climate change, it becomes crucial to investigate the multifaceted values — be they political, cultural, economical, or recreational — associated with nature in the city.

In this residency we invite artists to envision future scenarios that explore the concept of ownership in public spaces, not just limited to humans but encompassing inter-species perspectives.

RESIDENCY CHARACTERISTICS

During the residency the artist will be supported by a Local expert Group composed of local and international practitioners from the fields of urban studies, policy, digital technology, and the Arts.

The residency partners are 1) The National Lottery 2) Innoviris, a public organisation that funds and supports research and innovation in the Brussels-Capital Region and 3) Regional S+T+ARTS Center Gluon.

We search for proposals that address the design and adoption of digital technologies, to be balanced with the need to ensure sustainable development, considering the environmental, social, and economic impacts of digitalization. Specific expertise required by the artist for the implementation of the project will be evaluated upon request through the local support network.

The artist is expected to travel to the Brussels-Capital Region to attend workshops, events, meetings or to conduct field research at least 6 times during the residency period. The artist is expected to create a presentable outcome that can be included in the exhibition at Sónar Barcelona, Ars Electronica Festival and/or the I Love Science Festival in Brussels in 2024.

S+T+ARTS Co-funded by the European Union GLUON Art Research Education

GOING WILD IN THE CITY

Challenge No. 1 by Gluon

USEFUL LINKS

- Urban Jungle - Ben Wilson
- The Botany of Desire - Michael Pollan
- The Symbiotic City - Marjan Stuiver
- The Nation of Plants - Stefano Mancuso
- Kate Raworth - Exploring doughnut economics
- Donna Haraway - When species meet
- James Bridle - Ways of Being
- Urban Rewilding: the value and co-benefits of nature in urban spaces
- Cities' Answer to Sprawl? Go Wild.
- From asphalt jungle to digital preserve
- Rewilding cities for resilience
- Protecting nature (only available in Dutch & French)
- Brussels biotopes: the different forms of nature in the city (only available in Dutch & French)

WEBSITE PARTNERS

- Nationale Loterij (only available in Dutch, French and German)
- Brussels Urban Studies
- innoviris

LOCAL EXPERT GROUP

Karol De Decker
Sustainability Coordinator The National Lottery

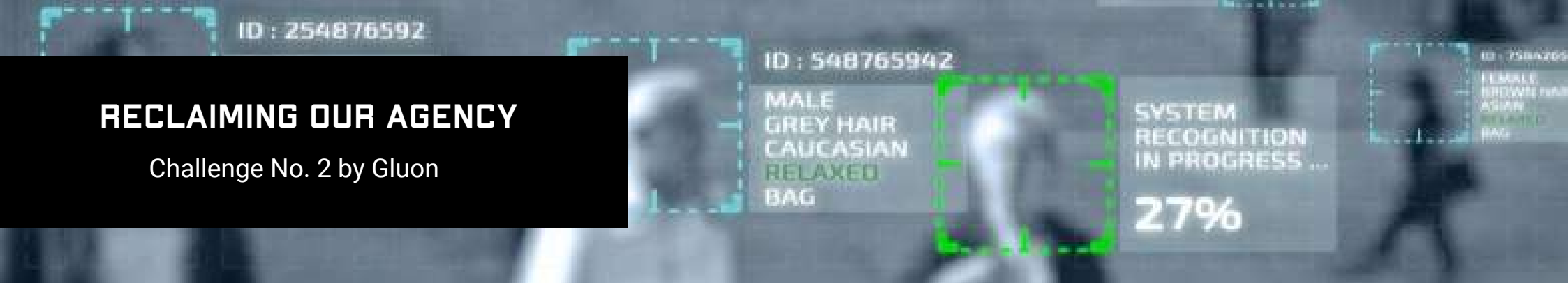
Bas Van Heur
Coordinator Brussels Center for Urban Studies

Alexandra Sanchez
Scientific advisor Strategic Research Team Innoviris

Elena Sorokina
Independent curator and art historian

APPLY HERE

S+T+ARTS Co-funded by the European Union GLUON Art Research Education



RECLAIMING OUR AGENCY

Challenge No. 2 by Gluon

PROBLEM STATEMENT

AI's increasing presence in our daily lives brings transformative potential but also significant challenges, particularly in the domain of mental health. How might we address the adverse impact of AI on mental well-being and explore the interplay between algorithms, recommender systems, and our mental equilibrium to shape healthier behaviors and thought processes?

KEYWORDS

Privacy, Data, Automation, Democracy, Digital Agency, Attention Economy, Emotion AI, Mental Health, Digital Rights, Digital Governance, Transparency, Accountability, Accessibility, Data Ownership, Data Extraction, Machine Learning, Generative AI, Cyber-criminality, Digital Threat

JURY DAY

Jury day will be digital on September 21st or 22nd, 2023.

DESCRIPTION

Artificial Intelligence (AI) is omnipresent in our everyday environment, exerting a profound impact that extends well beyond mere technological innovation.

AI transformative potential encompasses various facets of our lives and professional endeavors, offering new employment opportunities, enhancing productivity, improving healthcare, and providing solutions to complex global problems. However, alongside these opportunities, AI also presents significant challenges in various domains such as mental health.

The relationship between AI and mental health is somewhat of a double-edged sword. On one hand, AI is increasingly employed as a valuable tool for mental health researchers and neuroscientists, aiding in the comprehension of brain function. The utilization of neuroscience-inspired AI holds immense potential for unveiling novel approaches to treatment, diagnosis, and prevention. On the other hand, real-world events highlight how AI can impact our mental well-being in adverse ways. For example, AI is a crucial tool in the development of the 'attention economy.'

Hence, addictive algorithms and manipulative recommender systems have been implicated in influencing behaviors and raising concerns about our mental equilibrium.

In the context of our present-day reliance on AI, often unconsciously, we invite artists to explore the interplay between online algorithms, recommender systems, and our mental well-being. The goal of this residency is to delve into the ways AI and other digital domains shape our behaviors, thought processes, and the risk of mental disorders intertwined with how these ubiquitous technologies are being used.

RESIDENCY CHARACTERISTICS

During the residency, the artist will be supported by a Local Expert Group composed of local and international practitioners from AI, Cybersecurity, Policy, and the Arts. The main partner for this residency will be Proximus Ada, a Belgian center of excellence combining artificial intelligence and cybersecurity. It is an initiative of Proximus Group, the largest of 3 telecommunication companies in Belgium, with the goal to build resilience to cyber threats.

Through Proximus Ada, the selected artist will be supported by experts (data scientists, cyber security specialists, AI experts) and will get access to cybersecurity technologies. In particular a strong expertise in machine learning (including generative AI), data visualisation techniques, AI model description, -

S+T+ARTS Co-funded by the European Union GLUON Art Research Education

RECLAIMING OUR AGENCY

Challenge No. 2 by Gluon

training and output illustration and illustration of their processes is offered. Additional expertise required by the artist for the project's implementation will be granted upon request through the local support network. The artist is expected to travel to the region to attend workshops, events, meetings or to conduct field research at least 6 times during the residency period. The artist is expected to deliver a presentable outcome of the residency that can be included in the exhibition at Sónar+D Barcelona, Ars Electronica Festival, and/or the I Love Science Festival in Brussels in 2024. Moreover, the artist is expected to produce and deliver a collectable outcome of the project with an edition of 2 to be included in the collection of Gluon and the Proximus Art Collection.

USEFUL LINKS

- Proximus Ada
- FARI - AI for the Common Good institute of the Brussels City Region
- Sustain Brussels - the European Digital Innovation Hub of the Brussels City Region which serves as single point of access to sustainable and digital innovation in Brussels with a focus on AI and other emerging technologies
- New economics for sustainable development: Attention economy

LOCAL EXPERT GROUP

Alexis Wuyts
Advanced analytics strategist Proximus Ada

Annelore Brantegem
Policy Advisor Innoviris

Arjon Dunnewind
IMPAKT, Center for Media Culture Utrecht

Ian Vehoeven
CSIRT Officer Proximus Ada

APPLY HERE

S+T+ARTS Co-funded by the European Union GLUON Art Research Education

WHERE OUR FOOD COMES FROM

Challenge No. 3 by Gluon

Photo Credits: Belakker, Atelier Groot Eiland

PROBLEM STATEMENT

How can we enhance transparency and collaboration in the Brussels food system, ensuring a seamless journey from farm to table? How can digital technologies be utilized to provide consumers with detailed information about the origin, production, and distribution of their food?

KEYWORDS

Agro-Ecologies, Empowerment, Scale, Hinterland, Urban, High-tech, Low-tech, Food Production, Digital Technology, Local, Seasonal

JURY DAY

Jury day will be digital on September 21st or 22nd, 2023.

DESCRIPTION

The transition to a more sustainable food system is a necessity for the Brussels-Capital Region, addressing both global challenges such as nature protection, biodiversity preservation, and climate change mitigation, as well as local challenges related to social issues, health, economy, and employment.

Aligned with the Regional Innovation Plan and the Good Food strategy of the Brussels-Capital Region, this residency invites artists to embark on a critical exploration of the Brussels food system and the relation with the peri-urban and rural hinterlands of the city. The project can culminate in artworks, performances, thought provoking actions or innovative applications that empower closer connections between farmers and city dwellers or between producers and local society. We want to engage projects that think about the potential of digital technology and take a critical approach to assessing where technology can offer insights and solutions. A comprehensive analysis of the life cycle of one chosen food product, its specific cultural background or role in the urban life of Brussels and/or linking up the proposal with existing initiatives in the Brussels region are strongly encouraged. By starting from a very specific product (for example, but not limited to plant-based food, animal-based food, artificial/synthetic food, and food waste) we aim to make visible local food cultures to envisage new ways to grow, distribute, consume, and recycle sustainable and nourishing food at local scale.

RESIDENCY CHARACTERISTICS

During the residency, the artist will be supported by a Local expert Group composed of local and international practitioners from food policy, food science, business, digital technology, urban planning, and the Arts. The residency partners are 1) Ghent University - Department of food technology, safety & health 2) Flanders' Food 3) Innoviris 4) EIT Food 5) VIERNULVIER and 6) Regional S+T+ARTS Center Gluon.

In the development of the project, the artist is supported by the Ghent University - Department of food technology, safety & health, which offers a strong expertise in food science. We believe that transformation needs communities, and we consider it important to involve relevant local stakeholders. Through Good Food Brussels we will provide access to a network of local (urban & peri-urban) farmers and civic society initiatives. Additional expertise required by the artist for the project's implementation will be granted through the partners' network.

S+T+ARTS Co-funded by the European Union GLUON Art Research Education

WHERE OUR FOOD COMES FROM

Challenge No. 3 by Gluon

Photo Credits: Belakker, Atelier Groot Eiland

We expect an artistic project in a form/medium which aims to create awareness around new modes of (urban / peri-urban) local food production with the challenge of using technology for the development of a resilient, sustainable, and healthy food system for all.
The artist is expected to travel to the region to attend workshops, events, meetings or to conduct field research at least 6 times during the residency period. The artist is expected to deliver a presentable outcome of the residency that can be included in the exhibition at Sónar Barcelona, Ars Electronica Festival, I Love Science Festival in Brussels and/or VIERNULVIER in Ghent, in 2024.

USEFUL LINKS

- The Regional innovation plan 2021-2027 (only available in Dutch & French)
- George Monbiot: Regenesis Feeding the world without devouring the planet
- Carolyn Steel: Sitopia How food Can Save The World
- Producing food in Brussels (only available in Dutch & French)
- Good Food Portal (only available in Dutch & French)

LOCAL EXPERT GROUP

Emma Sidgwick
Innovation manager Flander's food

Stephan Petermann
Founder of MANN

Julie Lebrun
Communication manager EIT Food

Marie Carmen Bex
Deputy director-general Innoviris

Lynn Tytgat
Coordinator weKONEKT brussels art&science Vrije Universiteit Brussel

APPLY HERE

S+T+ARTS Co-funded by the European Union GLUON Art Research Education

THE VALUE OF CARE

Challenge No. 4 by Gluon

PROBLEM STATEMENT

While the utilisation of technologies holds the promise of significant transformation within the healthcare sector, such as personalised data-driven treatments, it also presents numerous critical challenges. These challenges encompass a range of concerns pertaining to human-robot interaction, privacy, data ownership and sharing, and concerns about the patient-health care professional relationship. How can we reconcile developments within personalised healthcare with a patient's individual values? What could be a valuable interplay between technological automation and human interventions?

KEYWORDS

Healthcare, Values, Well-being, Multiomics, Automation, Holistic, Human-Centred

JURY DAY

Jury day will be digital on September 21st or 22nd, 2023.

DESCRIPTION

This residency presents an opportunity for artists to engage in a collaborative endeavour with the Institute Jules Bordet, a comprehensive hospital dedicated to the treatment of cancer patients in Brussels.

The aim of this artistic venture is to create an artwork that contributes to or reflects upon the well-being and patient value of cancer patients. Specifically, we encourage artists to develop a digital artwork or application in partnership with the institute, fostering a supportive environment for patients, nurses, doctors, and family members as they navigate the challenges of their diagnosis and treatment. The residency aims to address how we can increase patient wellbeing and cure disease by creating a more equal and equitable relation between patient and health care professionals and understand the patient as an expert of its (chronic) diseased life? The hospital recognises how the personal values (life philosophy, cultural background, priorities) of patients function as a filter through which patients interpret clinical evidence and make treatment decisions. Selected artists will engage in collaboration with the team of psycho-oncologists at the hospital, providing an opportunity to reflect on the patient-healthcare professional relationship and actively contribute to the inclusion of patient values in the development of personalised treatment strategies.

The envisioned artwork aims to further support patients in the emotional and psychological aspects of the (chronic) disease, supporting patients in fostering a positive mindset during their treatment trajectory.

RESIDENCY CHARACTERISTICS

During the residency, the artist will be supported by a Local expert Group composed of local and international practitioners from the field of cancer treatment, healthcare, digital technologies, and the Arts. The residency main partners are 1) Institut Jules Bordet 2) IMEC, a research institution specialised in nano- and digital technology and 3) VIB (Flemish Institute for Biotechnology), an entrepreneurial non-profit research institute, with a clear focus on groundbreaking strategic basic research in life sciences.

The partners will offer cutting-edge research and shaping the future of healthcare. Through the Jules Bordet Institute, the selected artist will get access to expertise and technology in the field of cancer treatment and value-based approaches to health and care. In the development of the project, the artist is also supported by IMEC which offers a strong expertise in nanoelectronics and digital technologies such as; gamification for rehabilitation, virtual and augmented reality, robotics, and

S+T+ARTS Co-funded by the European Union GLUON Art Research Education

THE VALUE OF CARE

Challenge No. 4 by Gluon

exoskeletons, and healthtech (electroencephalography, disposable health patches, ingestible video pills, neuronal probes and hyperspectral cameras). Through VIB the artist will get access to expertise in the field of the complex and heterogeneous tumor micorenvironment at the molecular level, more specifically the (epi)genetic, metabolic and phenotypic level, developing novel insights into better diagnostics and prediction of therapy response via biomarker research. Machine learning and AI are crucial tools to translate knowledge out of the big data produced. These technologies offer new opportunities to bridge art, science, and medical practices.

The artist is expected to travel to the region to attend workshops, events, meetings or to conduct field research at least 6 times during the residency period. The artist is expected to deliver an artistic project in a form/medium that allows for in-situ integration on the site of the Institute Jules Bordet. The artistic project should be scalable and multipliable to be shown also in other hospitals. Moreover, the artist should deliver and produce a work that can be included in the exhibition at Sónar Barcelona, Ars Electronica Festival, and/or the I Love Science Festival in Brussels in 2024.

S+T+ARTS Co-funded by the European Union GLUON Art Research Education

USEFUL LINKS

Articles/publications

- Chronically healthy manifesto
- Inflamed - Deep medicine and the anatomy of injustice by Rupa Marya and Raj Patel
- Future For Doctors: 5 Trends in Technology That Shape Medical Specialties
- Opinion leader empowered patients about the era of digital health

Technologies

- Surgical Augmented Reality assistance
- Occupational exoskeletons
- Cell Sorter
- Medical hyperspectral imaging
- Neuropixels-probes (only available in Dutch)
- Breathalyzer
- EEG headset for neuromarketing research
- Health patch
- Ingestibles for gut health

Website partners

- Institut Jules Bordet
- VIB - Flemish Institute for Biotechnology
- IMEC

LOCAL EXPERT GROUP

Dirk Van Gestel
Medical Director of oncology HubBrussels

Lucas Evers
Head of Programme Make - Waag - Technology & Society

Sofie Bekaert
Manager translational program, VIB
Senior lecturer Ghent University – department Public health and primary care

Katrien van Remortel
Coordinator integrated social and health care project Médecins du Monde

Evy Ceuleers
Team Leader Science Promotion at Innoviris

Frederik Temmermans
Guest professor / post-doc researcher Vrije Universiteit Brussel and imec

APPLY HERE

MACHINE SAPIENS AND THE CITY

Challenge No. 5 by MEET

Photo Credits DALL-E:

PROBLEM STATEMENT

How can we enhance the oracular power of AI to reveal the needs and the desires of the city and translate them into possible heuristic governance solutions that can improve its well-being and resilience?

KEYWORDS

Technomagic, Invisible Cities, Intelligences Interface, Heuristic Governance, Koinocene

JURY DAY

The jury day will be held online on September 26th 2023.

DESCRIPTION

This residency challenges us to reflect on the concept of the city in the time of the Koinocene: a new era of interconnectedness among human beings, other living organisms, and even non-living beings, including AI. AI as a detector of collective memories and desires with the potential to imagine novel forms of well-being for the city. It could be the city of Milan or any other metropolis that questions itself and Italo Calvino's dream of the invisible cities or subtle cities, a dream that comes from the heart of unlivable cities that could become visible and happy through the insights provided by AI.

"Cities are a collection of many things: of memory, of desires, of signs of a language; cities are places of exchange, as all the books on the history of economics explain, but these exchanges are not just exchanges of goods, they are exchanges of words, of desires, of memories... We want to reveal happy cities that continually take shape and vanish, hidden in unhappy cities." (Italo Calvino, Le città invisibili).

However, the question arises: What does AI have to do with Italo Calvino's dream?

According to Martin Heidegger AI does not 'have a world', to quote Martin Heidegger nor a perception of reality that can be simulated or close to human perception.

Can we say that the AI has a language? While its language may not hold semantic qualities but leans more towards statistical patterns, the machine nonetheless activates cognitive processes that differ from the human one, yet in some ways still mysterious. While the machines we train are hallucinating, are they augmenting our humanity or somehow diminishing our agency in relation to our own intelligence?

The machine, through its specific perception and representation of data, could help us reveal what the citythinks and feels from another perspective, a perspective that we ignore and that is definitely “other”, although we continue to call it intelligence.

We would like to image that through this different perspective, AI could facilitate the communication of a plethora of data to citizens and policymakers, to help improve policies to a widespread well-being: ranging from the quality of air, social relations, the valorization of intercultural and interdisciplinary resources to the fight against inequalities, and why not from the simplification of processes to a sustainable mobility and collectivity. The aim is to experiment to realise the New European Bauhaus vision of more sustainable, more inclusive, more beautiful cities.

S+T+ARTS Co-funded by the European Union MEET DIGITAL CULTURE CENTER Fondazione CARIPLO

MACHINE SAPIENS AND THE CITY

Challenge No. 5 by MEET

Photo Credits: DALL-E

What is the role of man and of his intelligence in this? Different scenarios present themselves, ranging from the need for regulating and controlling of AI to the act of placing trust in it by giving it almost magical abilities as a problem-solving - a role weourselves have struggled to fulfill? Can AI be a mediator and an interpreter between the language of nature and the language of humans? In terms of evolutionary speed and the ability to process huge amounts of data, AI can be a valuable resource, but it can also lead to the deconstruction and reconstruction of the city, pursuing a dream of overcoming the crisis of today's city, rediscovering "the secret reasons that brought men to cities, reasons that could be valid beyond all crises" (Italo Calvino, Le città invisibili).The artist is invited to co-create with AI to imagine and reveal possible invisible cities that ask to be made visible and happier.

RESIDENCY CHARACTERISTICS

The residency is supported by research institutions and researchers dealing with data, AI, and supercomputing based in Lombardy Region and in Northern Italy. MEET will support the artist to access and use all open data of the municipality of Milan.The artist will also be supported by ETT S.p.A. for technological consultancy. We are looking for artists that have experience with AI systems and digital art.

The residency is hosted by MEET in Milan and the artist(s) is expected to be present in Milan on a regular basis and should include the travel expenses in the budget plans. MEET will coordinate the presence of the artist at the co-hosting institution and will put at disposal of the artist the Creative Studio and the Immersive Room for audiovisual and immersive prototyping.

The residency is accompanied by a public programme that will involve multiple stakeholders, from citizens and the public sector to research and industry actors, to identify the overall needs and increase collective commitment. Selected artists will have the opportunity to lead public events (through workshops, roundtables, etc.) with the support of MEET. The artist is expected to present the prototype at 2 events organized by the MEET Center Milan and/or the local research partners.

The artist is expected to deliver a presentable outcome at the end of the residency in the form of an AI digital art prototype. MEET will organize a local showcase in March 2024 , in collaboration with the co-hosting institution, ensuring the artist's presence.

Furthermore, the artist will also be invited to participate to the annual Atlas of Digital Art, scheduled for June 2024.

APPLY HERE

The LEG network is an interdisciplinary group that includes representatives from local authorities (Regione Lombardia, Metropolitan City of Milan), companies (ETT), universities and research centers (Politecnico Milano, Grenoble Business School, Area Science Park), artists and curators (Casa degli Artisti, Fare Arte Milano).

LOCAL EXPERT GROUP

Andrea Bonarini, *Director AI Robotic Lab – Politecnico Milano*

Valentina De Grazia, *Area Science Park – Referent of art & science projects*

Michele Coletti, *Professor at GEM Grenoble*

Susanna Ravelli, *Curator Casa degli Artisti Milano*

Stefania Tamborini, *Head of Directorate-General for Culture in Lombardy Regional Government*

Beatrice Oleari, *Curator Associazione FARE Arte Contemporanea*

Jacopo Masini, *Artist and founder of the collective DustyEye*

Roberto Beragnoli, *Artist and Researcher*

Stefano Lazzari, *Content Curator MEET Digital Culture Center*

Susanna Galli, *Head of the Training, Equal Opportunities and Third Sector Area of the Milan Metropolitan City Council*

S+T+ARTS Co-funded by the European Union MEET DIGITAL CULTURE CENTER Fondazione CARIPLO

REGENERATIVE AI FOR URBAN MINING

Challenge No. 6 by MEET

Photo credits: DALL-E

PROBLEM STATEMENT

How can we establish nurturing and circular relationships among the three different intelligences -human, artificial and natural- fostering collaborative symbiosis, allowing a “regenerative” AI to activate urban mining processes of materials and knowledge from the city environment?

KEYWORDS

Critical Minerals, Regenerative AI, Symbiocene, Mining, Circularity, Material Research, “Advancing” Waste

JURY DAY

The jury day will be held online on September 26th 2023.

DESCRIPTION

Rather than relying on the excavation and exploitation of scarce resources to sustain technologies and AI, humans can instead leverage critical minerals or materials already present in urban environments, extracting them in a manner that embodies a sense of care. On the other hand, there is an urgency to discover new materials that can replace costly-to-extract rare minerals. AI can play a pivotal role in facilitating this symbiotic relationship by aiding in the identification of hidden resources withincities and enabling the activation of circular processes to regenerate them.

The regional context of reference is a big city in Northern Italy (it could be Milan, Trieste, Turin) that holds significant reserves of materials that hold value to machines, products, and processes. This context offers an opportunity for reflection on the intelligence of materials and symbiotic processes between nature, artificial intelligence, and human intelligence, as part of the one great “intelligence” of the city.

These cities can become mines, of materials, knowledge, and data, activating circular processes of self-regeneration facilitated by AI.

This includes for example the extraction of rare materials (lithium, cobalt, copper, lithium, nickel, cobalt, and rare earth elements in circulation) from technological waste or alternatively, their substitution through advanced research enabling the AI machines and hardware to be fed, which in turn extract data and provide valuable insights back to the city, to activate circular processes.

This can give rise to a utopian scenario in which human intelligence mediates and integrates the two intelligences (artificial and natural) or a dystopian one where humans are sidelined by the other two intelligences that organize themselves independently.

The artistic prototype emerges from a creative speculation around concepts of sustainability, circularity, and regenerative AI, aligning with the New European Bauhaus. Advancing waste encloses a double meaning of the idea of advanced: you recover something that is advanced but in recovering it you overcome the theme of surplus.

REGENERATIVE AI FOR URBAN MINING

Challenge No. 6 by MEET

Photo credits: DALL-E

RESIDENCY CHARACTERISTICS

The residency is co-hosted by Area Science Park Trieste, providing the artist with exclusive access to technological resources, open big data, and its technological platforms focused on materials, data and life sciences; Notable, this collaboration incorporates the use of the Innovative Materials Platform which is composed of the Electron Microscopy Laboratory and the Data Engineering Laboratory, in collaboration with Elettra Synchrotron. Elettra Synchotron offers state-of-the-art, electron laser light for materials research and application in life sciences. Additionally, the artist will also get valuable support and guidance from experienced researchers.

We search for artists that have experience working with AI systems.

The residency is hosted by MEET in Milan and the artist(s) is expected to be present in Milan on a regular basis and should include the travel expenses in the budget plans. MEET will coordinate the presence of the artist at the co-hosting institution and will put at disposal of the artist the Creative Studio and the Immersive Room Room for audiovisual and immersive prototyping.

Selected artists will have the opportunity to lead public events (through workshops, roundtables, etc.) with the support of MEET. The artist is expected to present the prototype at 2 events organized by the MEET Center Milan and/or Area Science Park Trieste.

The artist is expected to deliver a presentable outcome of the residency in the form of a prototype. MEET will organize a local showcase in March 2024 with Area Science Park Trieste where the artist is expected to be present. Also, the artist will be invited to participate in the annual Atlas of Digital Art in June 2024.

The LEG network is an interdisciplinary group that includes representatives from local authorities (Regione Lombardia, Metropolitan City of Milan), companies (ETT), universities and research centers (Politecnico Milano, Grenoble Business School, Area Science Park), artists and curators (Casa degli Artisti, Fare Arte Milano).

APPLY HERE

LOCAL EXPERT GROUP

Andrea Bonarini, *Director AI Robotic Lab – Politecnico Milano*

Valentina De Grazia, *Area Science Park – Referent of art & science projects*

Michele Coletti, *Professor at GEM Grenoble*

Susanna Ravelli, *Curator Casa degli Artisti Milano*

Stefania Tamborini, *Head of Directorate-General for Culture in Lombardy Regional Government*

Beatrice Oleari, *Curator Associazione FARE Arte Contemporanea*

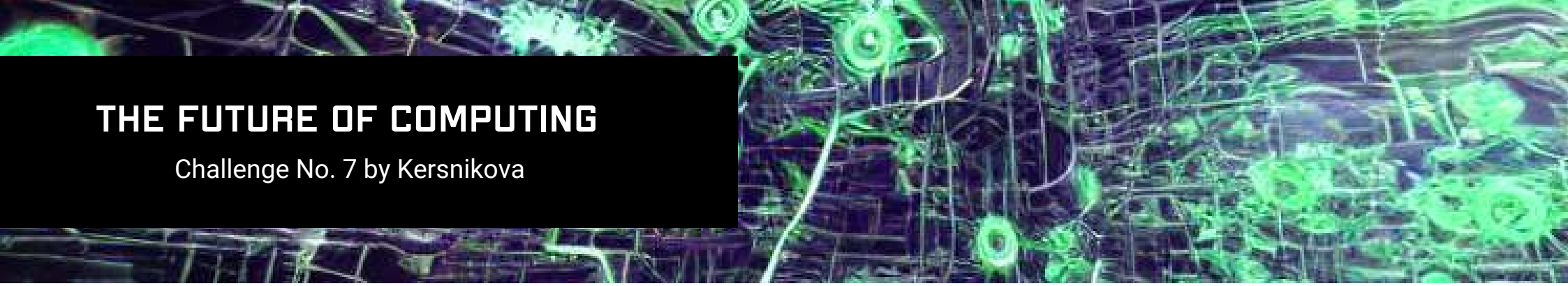
Jacopo Masini, *Artist and founder of the collective DustyEye*

Roberto Beragnoli, *Artist and Researcher*

Stefano Lazzari, *Content Curator MEET Digital Culture Center*

Susanna Galli, *Head of the Training, Equal Opportunities and Third Sector Area of the Milan Metropolitan City Council*

S+T+ARTS Co-funded by the European Union MEET DIGITAL CULTURE CENTER Fondazione CARIPLO



THE FUTURE OF COMPUTING

Challenge No. 7 by Kersnikova

PROBLEM STATEMENT

The growth of the bits generated by our global information technology requires an increasing amount of energy for its processing and storage. In response artists and scientists are exploring the knowledge about organically stored information, looking into solutions that already exist in biology, ranging from molecules to cells, to simple and more complex organisms and their exchanges. How can we imagine biocomputing as a potential alternative for storing information and reducing energy consumption needed for computation?

KEYWORDS

Ubiocomputing, Information Technology, Data Storage, Quantum Computing, Energy Harvesting, Biotechnology

JURY DAY

The jury day will be held online on September 21th 2023.

DESCRIPTION

Due to increased exploitation of our local and global natural resources driven by the rapid advancement of information technology, we are in need of sustainable pproaches to data storage and energy consumption in data processing. How can we draw inspiration from biological data processing mechanisms, ranging from molecular exchanges to information processes within colonies of simple organisms, and extending to more intricate systems? We are trying to learn from data processing in the biological world, starting from molecular exchange, processes of information in the colonies of simple organisms, towards more complex ones.

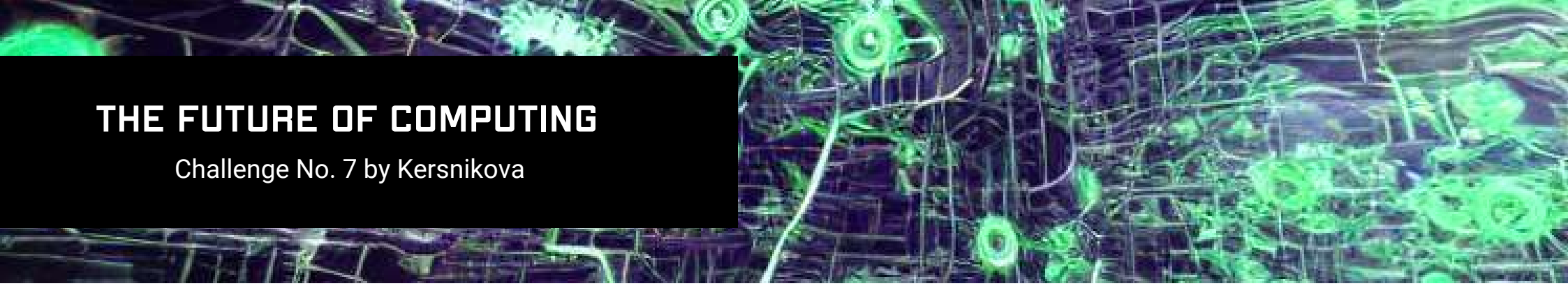
Biocomputing and quantum computing emerge as viable alternatives for adressing these challenges. Moreover, they also shift the paradigm of our thinking and present and the opportunity to bridge the gap we have created with the natural world. By encouraging audacious and speculative thinking, we believe that exceptional solutions can be envisioned for the future. Consequently, we are seeking artists who areinspired by the future possibilities of biocomputing andwho find incorporating (bio)technological means in their project self-evident.

RESIDENCY CHARACTERISTICS

The artist will have the opportunity to work with partners among the research institutes that we are regularly cooperating with: Jožef Stefan Institute, Faculty for Computer and Information science, National Institute of Chemistry, Biotechnical Faculty (all in Ljubljana) and other research institutions. In addition, the artist will have the support of Kersnikova's experienced production and curatorial team with access to working spaces and all three Kersnikova laboratories 1) BioTehna wetlab 2) Vivarium for plants, animals and robots and 3) Rampa mechatronic hackerspace. Local experts working on innovation, democratic digitalisation, environmental science and possibly on the artist's specific interest will be made available upon request. Daring, futuristic, ambitious artistic solutions are encouraged.

The artist is expected to work in close contact with the team of Kersnikova during the complete residency period. The artist is expected to travel to the region to attend activities, meetings and to conduct research at Kersnikova laboratories and the hosting research institutions at least 5 times during the residency period. The artist is expected to deliver a presentable outcome of the residency in the form of an innovative prototype or

S+T+ARTS Co-funded by the European Union Kersnikova



THE FUTURE OF COMPUTING

Challenge No. 7 by Kersnikova

an artistic installation. This outcome will be showcased at at Kapelica Gallery and will also be considered for the exhibitions at SONAR +D, Ars Electronica Festival and/or the I Love Science Festival in Brussels.

USEFUL LINKS

- The Weight of Bits
- Biomediality and Art
- What is Biological Computing
- What is Biological Computing And How It Will Change Our World

LOCAL EXPERT GROUP

Mojca Stubelj Ars
Head of Xcenter, PhD in Environmental Sciences

Simon Delakorda
Director of the Institute for Electronic Participation

Žiga Lampe
Director of Strategic Development, Chamber of Commerce and Industry of Slovenia

APPLY HERE

S+T+ARTS Co-funded by the European Union Kersnikova

DRIVING AGRICULTURAL SUSTAINABILITY: EMPOWERING SMALLHOLDER FARMERS WITH DIGITAL TRANSFORMATION

Challenge No. 8 by INOVA+

Photo credits:Universidade Lusíada - Vila Nova de Famalicão. In the image: Air and soil quality monitoring system with meteorological stations, peripheral towers and main tower developed at the Laboratories of UL-VNF.

PROBLEM STATEMENT

How might we contribute to a more sustainable agriculture through digital transformation and a greater collaboration between smallholder farmers?

KEYWORDS

Agriculture, Sustainability, IoT Technology, AI, Efficiency, Collaboration, Farmers

JURY DAY

The jury day will be held online between 21- 27 September 2023 (date TBC).

DESCRIPTION

Applicants are invited to collaborate with researchers of the Lusíada University (UL-VNF), localized in the municipality Vila Nova de Famalicão, in the North of Portugal, and together explore Artificial Intelligence (AI) / Internet of Things (IoT) technologies and ways to stimulate collaboration between small and medium-sized agricultural producers.

In an increasingly competitive and uncertain world, access to IoT technologies and real-time monitoring systems of the conditions surrounding a given process are becoming key to achieve more efficient, competitive, and sustainable processes. At UL-VNF, researchers have explored and developed IoT technology that allows the monitoring of the type of soil, the type of cultivation and data referring to air and soil quality. Normally, georeferencing systems refer data to large areas of land. In this context, given the characteristics of the land distribution in the North of Portugal (often very fragmented between smallholder farmers), there is a need to map rural agricultural areas and to stimulate the collaboration between small and medium-sized agricultural producers to exploit this technology and take the maximum advantage of it.

Collaboration between farmers is essential, as the sharing of knowledge allows the collection of relevant and accurate information to feed the monitoring systems. As a result, this will allow the gathering of reliable analyses of the soil and air conditions to be shared with farmers, who will, then, be capable of taking more informed decisions on the type of products to be explored in their lands. Simultaneously, by collaborating and having access to enhanced information, farmers willbe able to have a stronger “voice” in the society and markets.

RESIDENCY CHARACTERISTICS

This residency welcomes projects addressing innovatively the challenges mentioned in the previous point. We are looking for proposals that aim to collaboratively develop an innovative and tangible citizen and arts-led output (product, process…), addressing the need for greater collaborations and the role of IoT/AI technology.

S+T+ARTS Co-funded by the European Union INOVA+

DRIVING AGRICULTURAL SUSTAINABILITY: EMPOWERING SMALLHOLDER FARMERS WITH DIGITAL TRANSFORMATION

Challenge No. 8 by Inova

Photo credits: Universidade Lusíada - Vila Nova de Famalicão. In the image: Air and soil quality monitoring system with meteorological stations, peripheral towers and main tower develop Laboratories of UL-VNF.

The selected artist(s) will collaborate with UL-VNF (main residency site), which will provide guidance and access to its facilities, labs and technology, and invites the artist to get to know and take part in discussions, analysis and feedbacks loops on the IoT technologies developed by UL-VNF. Simultaneously, UL-VNF will facilitate the contact with local farmers' and the collection of information regarding their needs, goals… Three visits (minimum 1 week each) shall be organised to UL-VNF (beginning, mid-term and closer to the end of the residency) during the residency period. During these visits, besides other actions, the artist is expected to conduct activities to collect the information from local farmers (workshops and/or other innovative formats). The artist(s) will be supported to organise actions in different areas of the city Famalicão (at least 3 areas), to ensure diversity and relevance of information collected.

Local farmers' involvement and scalability of the outcome(s) are important success factors for this project. To ensure the engagement of local farmers the selected artist(s) should be (i) a Portuguese-speaking individual or (ii) a collective composed of at least 1 Portuguese-speaking individual. If needed, INOVA+ can support the identification of local stakeholders (individual farmers/ farmer organisations).

The outputs from the residency shall be presented locally (at minimum 2 events). Moreover, the artist is expected to deliver a presentable outcome of the residency, which will be considered for exhibitions at Sónar Barcelona, Ars Electronica Festival and/or the I Love Science Festival in Brussels.

USEFUL LINKS

- This residency is framed and shall help progress towards the goals and priorities settled by "Long-term vision for EU's rural areas"
- Common Agricultural Policy - Future Directions
- Innovation priorities settled to the North of Portugal for the period 2021-2027: Agroenvironmental and Food Systems. (CCDR-Norte 2021-2027 - Estratégia de Especialização Inteligente da Região do Norte 2021-27 (in Portuguese only)

APPLY HERE

S+T+ARTS Co-funded by the European Union INOVA+

UNDERSTANDING AND ENGINEERING PHOTOSYNTHESIS FOR A MORE SUSTAINABLE FUTURE

Challenge No. 9 by Hac Te

PROBLEM STATEMENT

How does photosynthesis function at the molecular scale, and can we improve it? Unveiling the processes governing nanoscale energy transfer could advance sustainable agriculture, green energy, and carbon capture. We invite artists to support the scientific challenge of making plants even stronger allies in the fight of big cities such as Barcelona against climate change.

KEYWORDS

Climate Change, Sustainability, Energy, Carbon, Air, Bio-Art, Bio-Hacking, Electronic Art

JURY DAY

The jury day will be held online between 21- 27 September 2023 (date TBC).

DESCRIPTION

We need to advance clean energy research and enhance agricultural production in order to mitigate the negative impacts of climate change. Natural photosynthesis has sustained life on Earth for more than 3.5 billion years, but the exact mechanisms that regulate this very fundamental process are still not completely understood.

From ICFO, based in Barcelona, Prof. Liguori's group utilizes experimental and computational tools to explore the regulatory mechanisms governing sunlight harvesting in photosynthetic organisms. Their research aims to deepen our fundamental understanding of natural photosynthesis and potentially uncover strategies to optimize the utilization of solar energy in photosynthetic organisms.

In the artistic field, photosynthesis and chlorophyll have been the subject of several research projects in bio-art and bio hacking, to analyze the inter-species relationships and the ecological perspective that separates humans from nature, moving towards a non-anthropocentric ecology but also researching and using photosynthesis as process to co-create artistic works.

RESIDENCY CHARACTERISTICS

The artists will be embedded in the daily life of the research group, being able to have its own office space shared with other researchers. The artist will have full access to the facilities and the researchers of the research group, as well as the outreach team and the clean program coordinator, being the main contact person the Group Leader, Dr. Nicoletta Liguori, with whom the artist will be able to have regular meetings around the project. The artist will be embedded in a laboratory that hosts a world unique spectroscopic setup that allows to probe with ultrafast resolution how photosynthetic complexes sense and respond to changes in light and environment and, consequently, how they regulate photosynthesis. The laboratory hosts also a strong expertise in molecular dynamics simulations to depict what are the dynamic structural changes of photosynthetic complexes that regulate photosynthesis.

The research group is looking forward to working with an artist to reinterpret and think about the need and the potential of understanding and improving natural photosynthesis. The group is open to any type of artist, although would prefer a final product that is a piece or installation rather than a performance.

S+T+ARTS Co-funded by the European Union
Hac Te Barcelona Hub of Art, Science and Technology

UNDERSTANDING AND ENGINEERING PHOTOSYNTHESIS FOR A MORE SUSTAINABLE FUTURE

Challenge No. 9 by Hac Te

The artist is expected to participate in the researcher's experiments and some group meetings to gain a better understanding of the overall research conducted by the group. It is recommend for the artist to stay with the group in November. The artist's presence at the research group facilities can be arranged depending on the project needs and the group's availability.

1] Tools for Observation: Art and the Scientific Process. Pettit, E. C. ; Coryell-Martin, M. ; Maisch, K. American Geophysical Union, Fall Meeting 2015, abstract id. ED51D-0836

USEFUL LINKS

- Photon Harvesting in Plants and Biomolecules:

LOCAL EXPERT GROUP

Badia Tere
Independent advisor AST

Guillem Alenyà
Institut de robòtica i informàtica industrial, CSIC-UPC / Director and Researcher

Xavier Cubeles
Independent advisor ASTS

Gemma San Cornelio Esquerdo
Associate Professor Universitat Oberta de Catalunya

Joan Soler-Adillon
Associate Professor Universitat Oberta de Catalunya (UOC)

Júlia Borràs Sol
Institut de robòtica i informàtica industrial, CSIC-UPC / Deputy director and científica titular CSIC

APPLY HERE

S+T+ARTS Co-funded by the European Union Hac Te Barcelona Hub of Art, Science and Technology

DESIGNING THE ROBOTS OF THE FUTURE

Challenge No. 10 by Hac Te

PROBLEM STATEMENT

As a result of the aging population in Catalonia, the dependency ratio of the elderly will go from 28.9 in 2021 to 44.3 in 2040, and to 51.2 in 2070. As technology advances, robots will soon become ubiquitous in human environments. Their role will be particularly important for elderly people, providing not only a form of companionship, but also facilitating their autonomy, assisting caregivers in monitoring their well-being and accident prevention within their residences. While these advancements bring with them a number of exciting possibilities, a deep reflection is required to ensure we can safely reconfigure our lives to tackle issues such as privacy, trust, acceptance, transparency, and honest interactions. How can the arts play an active role in improving the interaction between humans and robots?

KEYWORDS

Robotics, Healthcare, Ethics, Artificial Intelligence, AI

JURY DAY

Jury day will be digital on September 21st or 22nd, 2023.

DESCRIPTION

Robots will enter our life and our healthcare system to help us (and caregivers) to live better and more independently. However, several ethical concerns arise such as psychological attachment, privacy, and excess or lack of trust. A robot is a tool and to be effective it can not be seen as an intruder nor as a friend.

Science and technology research centers such as the Institute of Robotics at CSIC- UPC explore the possibilities of AI and Robotics projects for the health sector and industry. But the advancement of social robots in the practice of care, as well as European plans to incorporate AI-powered tools in healthcare, necessitate an urgent ethical consideration in order to (re)configure our practical lives in alignment with human values and rights. An arts and health project in connection with their technological developments could improve and reinforce an ethical approach in the design of the robots of the future.

This residency invites artists to collaborate with the Institute of Robotics at CSIC-UPC for the development of an artistic application or artwork that explores the interaction between patients and robots. The artist's perspective can help in the design, implementation and evaluation of knowledge acquisition and comprehension processes undertaken by robots (thought, experience and senses).

RESIDENCY CHARACTERISTICS

The artists will be embedded in the daily life of the research center, being able to have its own space shared with other researchers. The artist will have full access to the facilities and the researchers of the research groups, as well as the outreach team and the Lab coordinators, that will be able to have regular meetings around the project. The Lab is equipped with different pairs of robotic arms (UR's and Kinova), a couple of TIAGo robots (PAL robotics), one ARI robot (PAL robotics), one Stretch (Hello robot) and a Temi robot, together with sensors for motion capture, whole-body motion capture (XSens suit) and several depth cameras.

S+T+ARTS Co-funded by the European Union
Hac Te Barcelona Hub of Art, Science and Technology

DESIGNING THE ROBOTS OF THE FUTURE

Challenge No. 10 by Hac Te

While the selected artist will be leading their own artistic research and practice, towards the final output of the residency, we expect this process to happen in close collaboration with the above mentioned research groups, as well as other ongoing research projects.

It would be nice if the artist can participate in the experiments that the researchers will carry out, and to participate in some of the group meetings to gain a better understanding of the overall research performed in the group. To actively understand the activities and to engage with the robotic demos, in-person visits will be required.

The group welcomes artists from diverse disciplines, while expressing a preference for final artistic outcomes that take form of a physical piece or installation, rather than a performance-based work.

USEFUL LINKS

- Facilities of the lab
- Follow all the links in the text to see details on each different activites we do, like our manipulators
- List of research projects of the group
- List of group research publicatons

APPLY HERE

LOCAL EXPERT GROUP

Badia Tere
Independent advisor AST

Guillem Alenyà
Institut de robòtica i informàtica industrial, CSIC-UPC / Director and Researcher

Xavier Cubeles
Independent advisor ASTS

Gemma San Cornelio Esquerdo
Associate Professor Universitat Oberta de Catalunya

Joan Soler-Adillon
Associate Professor Universitat Oberta de Catalunya (UOC)

Júlia Borràs Sol
Institut de robòtica i informàtica industrial, CSIC-UPC / Deputy director and scientífica titular CSIC

S+T+ARTS Co-funded by the European Union
Hac Te Barcelona Hub of Art, Science and Technology

IMMERSIVE AND DIGITAL NARRATIVES FOR CLIMATE CHANGE

Challenge No. 11 by Hac Te

PROBLEM STATEMENT

Barcelona's historically privileged geographical position is quickly turning into a challenging one: pollution, rising temperatures, and the threat of sea level rise, to name a few, are pressing problems, and to look away is no longer an option. How can digital artistic practices and narratives be part of the solution? How might climate-aware and sustainable art practices help a city like Barcelona prepare for the climate crisis?

KEYWORDS

Climate Change, Sustainability, Energy, Carbon, Air, Bio-Art, Bio-Hacking, Electronic Art

JURY DAY

Jury day will be digital on September 21st or 22nd, 2023.

DESCRIPTION

Barcelona is a coastal city heavily defined by its geographical position between two rivers, the mountain and the sea. While historically very well connected to the world and its surroundings, there is no doubt that climate-change related threats could greatly endanger the city life as we now know it.

Beyond greenwashing narrative strategies or superficial visual approaches, this project aims to deal with present and future climate threats such as the rising sea level, heat waves during summer time or floods. And it aims to do it through artistic research, using digital and immersive technologies, as a starting point in the liminal territory where the virtual and the real converge. We encourage a narrative approach, moving from scientific data and facts to emotional engagement. And from here, with a particular focus on digital narratives, to expand and permeate into the real –the city and its inhabitants– through the use of this artistic digital layer.

The ultimate goal is to create one or several artistic artifacts that challenge the current configuration of the city and its local social networks, and provokes some of the much needed change in order to face the unavoidable and the undesirable, in the most positive or, at least, from a position of resilience and awareness.

RESIDENCY CHARACTERISTICS

The selected artist will engage with the entire University of Catalunya (UOC) community and have access to the state-of-the-art labs within the research hub located at Poblenou's Campus. These include the Audiovisual and Sound Lab, XR Lab, and Digital Fabrication Lab. The artist will be supported by key members of the research groups DARTS and MEDIACCIONS. We expect a close collaboration with the aforementioned research group and other ongoing projects.

The artist should possess relevant technological skills to develop certain aspects of the work, and to collaborate with technical experts when assistance is needed. While not mandatory, having some (or advanced) knowledge in areas like coding, game engines (Unity or Unreal), video and image editing, digital fabrication and physical computing will be valued. Experience in digital art projects, immersive experiences and digital storytelling will also be considered.

The artist is expected to be present in Barcelona at least once a month or for longer periods of time (at the beginning, midterm and the end), during the complete residency period.

S+T+ARTS Co-funded by the European Union Hac Te Barcelona Hub of Art, Science and Technology

IMMERSIVE AND DIGITAL NARRATIVES FOR CLIMATE CHANGE

Challenge No. 11 by Hac Te

The supporting research groups actively participate in local and international events such as Ars Electronica, Barcelona's Science Biennale, Barcelona Design Week, Sonar, or SIGGRAPH and mantain regular connections with key cultural venues in Barcelona, including CCCB. Throughout the residency and in the months following it, the artist is expected to participate in some of these events, and others that the UOC research groups organize.

The artist is expected to deliver a presentable outcome at the end of the residency, we do aim at an impactful outcome that aligns with the challenge's theme: contribution to Barcelona's ongoing dialogue on the consequences of climate change.

USEFUL LINKS

- DARTS
- MEDIACCIONS
- University of Catalunya

APPLY HERE

LOCAL EXPERT GROUP

Badia Tere
Independent advisor AST

Guillem Alenyà
Institut de robòtica i informàtica industrial, CSIC-UPC / Director and Researcher

Xavier Cubeles
Independent advisor ASTS

Gemma San Cornelio Esquerdo
Associate Professor Universitat Oberta de Catalunya

Joan Soler-Adillon
Associate Professor Universitat Oberta de Catalunya (UOC)

Júlia Borràs Sol
Institut de robòtica i informàtica industrial, CSIC-UPC / Deputy director and scientífica titular CSIC

S+T+ARTS Co-funded by the European Union Hac Te Barcelona Hub of Art, Science and Technology


GL
UON
ARS ELECTRONICA
Art, Technology & Society
Kersnikova
MEET
DIGITAL
CULTURE
CENTER
Fondazione
CARIPLO
Hac
Te
Barcelona
Hub of Art, Science
and Technology
INOVA+