

APPLICATION OF ROBOTICS **IN EFFICIENT AND SUSTAINABLE** CONSTRUCTION **AND** DECONSTRUCTION



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8.30
Stuttgart Germany

ORGANIZERS

Antonio Alonso CEPEDA
ACCIONA

Dimitrios GIAKOUMIS
CERTH-ITI

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CDEI-UPC



humantech



BEEYONDERS



DISCOVER



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the European Union

ORGANIZERS



Antonio Alonso CEPEDA

Beeyonders project Coordinator

► **JOB TITLE**

Innovation manager

► **AFFILIATION**

ACCIONA Construction

► **BIO**

MSc Industrial Engineer in Energy Technologies and PMP. His technical background is based on two areas of knowledge: 1. Computational Fluid Dynamics and Thermal Analysis, developing algorithms to optimise the behaviour of engineering systems applied to energy efficiency in buildings, and 2. Robotics, working on the development of various prototypes for construction and supporting the company in the digital transformation for construction. His management background has been focused on the ICT and automation field in the technological innovation direction in Madrid (ACCIONA), advising on strategic decisions, new research lines and coordinating groups of researchers. During these years he has worked in several European projects related to energy efficiency and robotics. He is currently the project manager of BEEYONDERS, which involves 21 partners with a budget of 8 M€ and a duration of 3.5 years.



Dr. Jason RAMBACH

HumanTech project Coordinator

► **JOB TITLE**

Senior Researcher, Team Leader Spatial Sensing and Machine Perception

► **AFFILIATION**

German Research Center for Artificial Intelligence, DFKI

► **BIO**

Jason Rambach received his PhD in Computer Science in 2020 from the University of Kaiserslautern for his dissertation entitled "Learning Priors for Augmented Reality Tracking and Scene Understanding". He has been at DFKI Augmented Vision in Kaiserslautern since 2015. Currently, he is a Senior Researcher leading the team "Spatial Sensing and Machine Perception" of approx. 10 researchers working on depth sensing and Geometric/Semantic scene understanding using Machine Learning. His research interests include SLAM and Semantic Scene Understanding, Object Pose Estimation and Tracking, Anomaly Detection, Hybrid AI, Robotic Vision and Augmented Reality. He has over 40 publications in leading Computer Vision and Augmented Reality conferences, a best paper award from the IEEE International Symposium on Mixed and Augmented Reality (ISMAR) 2017 and two awards at the BOP Object Pose Estimation challenge 2022 at ECCV. He is a reviewer for several scientific journals and conferences (CVPR, ECCV, ICRA, WACV, BMVC). Since 2022 he is coordinator of the EU Horizon Project HumanTech, applying AI in the construction industry for Scan2BIM, Wearables and Assistance Robots.



Dr. Dimitrios GIAKOUKIS

RobetArme project Coordinator

▶ **JOB TITLE**

Principal Researcher in Service Robotics

▶ **AFFILIATION**

Centre for Research and Technology Hellas (CERTH)

▶ **BIO**

Dr. Dimitrios Giakoumis is a Principal Researcher (Grade B) at the Information Technologies Institute of the Centre for Research and Technology Hellas (CERTH).

His main research interests include human-robot interaction, robot vision, service robot perception and cognition, affective computing, human motion, activity and behaviour analysis and modelling, safe and social-aware robot navigation, biosignals processing and sensor management, multimodal interfaces, machine learning and pattern recognition.

He has been working as a Researcher with ITI since February 2007 and he has been involved in more than 15 research projects, funded by the EC and the Greek Secretariat of Research and Technology. These include the Horizon 2020 RAMCIP, BADGER, HR-Recycler, Ageing@work and BACCHUS projects, where he also contributed to the Technical Coordination and Quality Management of the project consortium. He is the Coordinator of the Horizon Europe research projects RobetArme, MANIBOT and PLIADES, all focusing on AI, Data and Robotics.



Mr. Lluís Bonet Ortuño

Discover Project

▶ **JOB TITLE**

Researcher and Project Engineer

▶ **AFFILIATION**

CDEI-UPC

▶ **BIO**

Lluís Bonet Ortuño holds a degree and Msc in Industrial Engineering from the Universitat Politècnica de Catalunya (UPC).

He has participated in several robotics projects, including the ARM2u team, that participates at the Cybathlon competition.

Currently is working as a researcher in CDEI-UPC. His tasks are related to mechanical design and manufacturing and developing control strategies for autonomous robots for agricultural and construction applications.

SPEAKERS



Fabian Kaufmann

► **JOB TITLE**
Researcher

► **AFFILIATION**
University of Kaiserslautern-Landau (RPTU)

► **BIO**
Fabian Kaufmann received his master's degree in civil engineering and project management in 2018. Since then, he has been active in the field of reality capturing and Building Information Modelling with a special focus on practical applications of both technologies in the construction industry. In 2025 he submitted his doctoral thesis entitled "Towards scan-to-BIM automation: geometric and semantic reconstruction of structural components from point clouds". In the HumanTech project, he is responsible for the pilot implementation actively supporting the overall coordination activities.



Dr. Goretti Arias Ferreiro

► **JOB TITLE**
R&D Project Manager

► **AFFILIATION**
Fundación Agustín de Betancourt / ACCIONA Construction

► **BIO**
Goretti Arias-Ferreiro has a background in chemical engineering, master's degree in energy efficiency (2018) and holds a PhD in applied physics from the University of A Coruña (2022). She has carried out research at leading European institutions, specialising in materials science, nanotechnology and sustainable energy. Currently, Dr Arias-Ferreiro is the R&D Project Manager at the Fundación Agustín de Betancourt, where she collaborates with ACCIONA Construction as an external worker. Her focus is on the integration of cutting-edge technologies for the improvement of safety and efficiency in construction. As participant in BEEYONDERS, she oversees the "Tunnel Construction" demo, leading the integration of robotics and automation to improve efficiency, safety and working conditions in underground construction. She also contributes to the overall coordination of the project, supporting strategic planning, partner collaboration and the adoption of innovative construction technologies by a wide range of European stakeholders.



Dr. Christian Di Natali

► JOB TITLE

Researcher

AFFILIATION

- Istituto Italiano di Tecnologia (IIT)

BIO

- Master's degree in biomedical engineering from the University of Pisa, Italy (2010), and Ph.D. in Mechanical engineering from Vanderbilt University, USA (2015). During his Ph.D., he was actively involved in designing advanced magnetic coupling and magnetic localization for robotic surgery and endoscopy. After his Ph.D., he worked as a technical manager for a company that designed industrial autonomous machines to produce wound electric motors. In 2017, he joined the Istituto Italiano di Tecnologia, and he is currently a Researcher and Principal Investigator at the exoskeletons group (XoLab) of the Department of Advanced Robotics (ADVR). He is involved in developing and assessing industrial exoskeletons, soft exosuits, and wearable technologies in the lab and relevant environments to augment performances and improve safety and ergonomics.



Dr. Francisco Javier Pérez-Grau

► JOB TITLE

Senior Researcher, Head of Perception & AI

► AFFILIATION

CATEC (Advanced Center for Aerospace Technologies)

► BIO

BIO: Dr. Francisco Javier Perez Grau received his PhD in Robotics from the University of Seville, and has more than 16 years of experience at CATEC working in the development of advanced perception technologies for aerial robots. He has been the lead engineer of the EUROCC project where CATEC, along with University of Seville and Airbus D&S, was the first aerial robotics team (from originally more than 30 teams all over Europe). Also, this project won the Special Innovative Prize at the 1st EU Drones Award. He is author of more than 30 peer-reviewed publications, and has participated in a large number of technological projects related to robotics, at both national and European levels, such as: DELOREAN, MONIF, PLANET, PERIGEO, EUROCC, IMOV3D, PILOTING, BEEYONDERS, etc. During 2007-2008, he spent one year at Carnegie Mellon University where he developed computer vision techniques applied to face analysis and recognition. Subsequently, he did short stays at the University of Sydney in 2015, focused on the autonomous navigation of mobile robots for space exploration, and in 2018 at the University of Zurich on the use of bio-inspired sensors for the autonomous navigation of small aerial robots. Since 2019, he is the Head of the Perception & AI Unit, leading a team of more than 20 researchers and coordinating all the developments related to perception technologies at CATEC.



Mr. Franc Mouwen

► **JOB TITLE**

Programme Manager Architecture Engineering Constructio

► **AFFILIATION**

European Innovation Council EIC

► **BIO**

Franc Mouwen is the EIC Programme Manager for architecture engineering construction. Franc's expertise is in technology scouting and venture building for the construction sector of the future. After his MSc Mechanical Engineering at TU Delft in the Netherlands, Franc was a project manager responsible for some of the largest and pioneering tunnel boring systems for several major clients in Europe and Asia. Franc earned a fulltime MBA degree at IMD in Switzerland and has since ventured into climate change mitigation combining technology, innovation, and entrepreneurship. He joined

and founded several deep technology startups, leveraging his knowhow of and passion for construction.





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