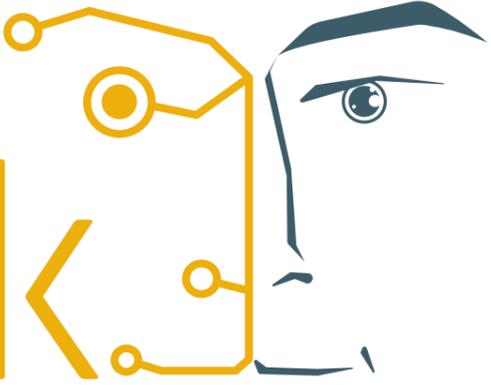


share work



Sharework final conference

Unlocking Industrial Human-Robot Collaboration



October 19th 2022
9:30-16:00 CEST



Hybrid:
CASA SEAT - Passeig de Gràcia, 109, 08008, Barcelona
In streaming via YouTube



Registration link:
<https://cutt.ly/RegisterSharework>



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 820807.



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The Sharework project, coordinated by Eurecat, is organising its final conference “**Unlocking Human-Robot collaboration**”. The project has led to a software and hardware system based on computer vision, machine learning and artificial intelligence to provide robots with high vision skills and knowledge to interact safely and effectively in the workplace and assist humans in arduous or repetitive tasks.

During the final conference, partners will present the outcomes of the research done in the areas of perception, safety, human factors and motion planning to ensure an effective wide implementation of collaborative robotics in the industry, and we will hear from four companies that implemented the Sharework system in assembly and disassembly areas of their facilities.

TARGETED TO:

- Undergraduate, graduate or master students willing to learn about the application and research on Human-Robot Collaborative solutions and approaches in collaborative robotics, computer vision, Industry 4.0 systems, Human-Machine interaction, etc.
- Researchers in Human-Robot Collaboration, motion planning and security in robotics, computer vision and Human-Robot Interaction, among other topics from Universities, Institutes or Research Centers.
- Professionals from companies in the field of robotics, sensorics or Industry 4.0.



Registration link:
<https://cutt.ly/RegisterSharework>

Agenda

19th October 2022 || Hybrid - Barcelona / Streaming



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9.30 - 10.00 CEST

**OPENING PLENARY:
 Welcome and SHAREWORK overview**

9.30 - 9.40

Welcome and introduction to Eurecat and SHAREWORK final conference

Joan Guasch

Director of International Development and Public Programmes
 Eurecat

9.40 - 10.00

Sharework results overview

Dr. Simona Neri

Sharework coordinator
 Eurecat

Dr. Néstor Garcia

Sharework Technical Coordinator,
 Principal Investigator of the Robotics
 and Automation Unit
 Eurecat

10.00 - 10.30 CEST

**MORNING KEYNOTE:
 Collaborative robotics on the path to the plateau of productivity**

Presenter:

Dr. Sotiris Makris

Senior Research Scientist, Laboratory for Manufacturing Systems and Automation (LMS)
 University of Patras

Keynote speaker:

Dr. Jose Saenz

Senior Research Scientist
 Fraunhofer IFF

10.30 - 11.00 CEST

BREAK

11.00 - 12.30h CEST

**SESSION 1:
 Beyond state-of-the-art - Industrial Human-Robot
 Collaboration software & hardware**

Chair:

Jesús Pablo Gonzalez

Robotics Technology Manager
 Eurecat

11.00 - 11.25

Understanding the human for collaborative automated environments

Dr. Néstor Garcia

Sharework Technical Coordinator, Principal Investigator
 of the Robotics and Automation Unit
 Eurecat

11.25 - 11.45

Applying motion and task planning novel approaches

Dr. Nicola Pedrocchi

Senior Researcher, Head of Personal Robotics for Manufacturing Laboratory (PERFORM Lab), Institute of Intelligent Industrial Technologies and Systems for Advanced Manufacturing (STIIMA)
 National Research Council of Italy (CNR)

11.45-12.15

Safety, security & human-robot interaction in automotive parts' assembly lines

Dionisis Andronas

Research Engineer, Laboratory
 for Manufacturing Systems
 and Automation (LMS)
 University of Patras

Aquib Rashid

Senior Researcher in Robot Control and Vision
 Fraunhofer IWU

12.15 - 12.30

Questions & Answers session

Jesús Pablo Gonzalez

Robotics Technology Manager
 Eurecat

12.30 - 12.45 CEST

BREAK



Agenda

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12:45 - 13:30h CEST

ROUND TABLE 1: Application of Industrial cobots in shopfloors

Chair:

Jade LeMaitre
 CEO
 Proxinnov

Francesca Canale
 Project Engineer
 STAM

Daniel Moreno Roca
 Head of the Automation Department
 SEAT S.A.

Andrea Scala
 Technician
 CEMBRE

Francisco Javier Bueno
 Process and Manufacturing
 Engineering Director
 ALSTOM

Mikel Mondragón
 R&D Manager
 GOIZPER Group

15:00 - 15:45h CEST

ROUND TABLE 2: HRC research and development challenges & future applications

Moderator:

Andrea Orlandini
 Researcher, National Research Council of Italy
 Institute of Cognitive Sciences and Technologies (ISTC-CNR)

Dr. Sotiris Makris
 Senior Research Scientist,
 Laboratory for Manufacturing
 Systems and Automation (LMS)
 University of Patras

Daniel Serrano
 Director of the Robotics and
 Automation Unit
 Eurecat

Francesco Ferro
 CEO
 PAL Robotics

Dr. Jan Peters
 Full professor for Intelligent
 Autonomous Systems at the
 Computer Science Department
 Technische Universitaet Darmstadt

Jan Puig
 Sales and Marketing
 Director
 PILZ

13.30 - 14.30h CEST

NETWORKING LUNCH

14:30 - 15:00h CEST

Afternoon Keynote: On Decisional Abilities for a Cognitive and Interactive Robot

Presenter:

Dr. Jan Peters
 Full professor for Intelligent Autonomous Systems at the Computer Science
 Department
 Technische Universitaet Darmstadt

Keynote speaker:

Dr. Rachid Alami
 Senior Scientist, Laboratory for Analysis and Architecture of Systems (LAAS)
 NRS/ANITI

15.45 - 16.00h CEST

Closing conference

Joan Guasch

Director of International Development and Public Programmes
 Eurecat



Speakers

In order of appearance



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Joan Guasch

Director of International Development and Public Programmes
 Eurecat

Industrial engineer with an MBA by Universitat Politècnica de Catalunya (UPC). He is currently the director of international development and public programmes at Eurecat Centre Tecnològic de Catalunya. He has more than 20 years of experience in European policies, programmes and funding projects for supporting the research and innovation. He has participated in committees, technology platforms and evaluation panels. He has promoted and participated in various regional and European initiatives in the domain of industrial digitization as he started his career as a researcher in advanced manufacturing.



Dr. Simona Neri

Sharework coordinator
 Eurecat

Program manager in the field of fund-raising industry. Enthusiastic about innovation, science and technology with a solid international experience, strong stakeholder management skills and proven scientific background and innovation experience. Currently working in Eurecat and proudly coordinating Sharework project.



Dr. Néstor Garcia

Sharework Technical Coordinator, Robotics and Automation Unit
 Eurecat

B.S. degree (with honors) in Industrial Engineering and the Ph.D. degree (also with honors) in Automatic Control, Robotics and Computer Vision, both from the Polytechnic University of Catalonia (UPC), Barcelona, Spain, in 2015 and 2019 respectively. He joined Eurecat in 2018, where he is the Principal Investigator of the Collaborative Manipulation research group. His current research interests are focused on task and motion planning, human-robot interaction, multirobot cooperation and learning in robotic systems. He is acting Eurecat technical lead for the European projects Sharework, Bots2Rec and national project Simbiots.

Speakers

In order of appearance



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Dr. Sotiris Makris

Senior Research Scientist, Laboratory for Manufacturing Systems and Automation (LMS)

University of Patras

Sotiris Makris is Head of Robotics, Automation and Virtual Reality in Manufacturing at LMS. He has been involved in manufacturing research for more than 25 years. He has been investigating the subject of cooperating robots two fold, namely human-robot collaboration as well as robot-robot collaboration. He has implemented a number of industrial solutions validating these ideas in industry. He has served as coordinator of several European funded projects. He has been serving as the Executive Director of the "Teaching Factory Competence Center", which is oriented into delivering Industry 4.0 oriented training services to the industry.



Dr. José Saenz

Business Unit Robotic Systems

Fraunhofer IFF

José Saenz earned a B.S. in mechanical engineering from Stanford University (USA) in 1999, a M.S. in mechatronics from Otto von Guericke University Magdeburg (Germany) in 2004, and a Doctorate in Automation from the École Nationale Supérieure d'Arts et Métiers (France) in 2019. He is the group leader of the group Assistance, Service and Industrial Robotics in the Business Unit Robotic Systems and has been at the Fraunhofer Institute for Factory Operation and Automation in Magdeburg (Germany) since 2000. His main research interests are in the fields of safe human robot collaboration, mobile manipulation, inspection and cleaning service robots, and safety sensor development.



Jesús Pablo Gonzalez

Robotics Technology Manager, Robotics and Automation Unit

Eurecat

Jesús Pablo González Villodres. Technology Transfer Manager in Robotics at Eurecat with more than 15 years of experience in the management of technological innovation and European research projects in the fields of robotics and AI for aerospace, manufacturing, logistics, agriculture, construction and other sectors. He is in charge of the promotion and valorization of the Robotics and Automation technologies at Eurecat. He is active member in international associations such as ADRA, EFFRA and euRobotics where he co-founded and coordinated the Autonomous Navigation Working Group. He is currently leading Eurecat's contribution in several networks of Robotics Digital Innovation Hubs.

Speakers

In order of appearance



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Dionisis Andronas

Research Engineer, Laboratory for Manufacturing Systems and Automation (LMS)

University of Patras

Dionisis Andronas holds a Bachelor's and Master's in Mechanical Engineering and Aeronautics from the university of Patras (Greece) in 2018. He works as a research engineer at the "Robots, Automation and Virtual Reality in Manufacturing" group of Laboratory for Manufacturing Systems and Automation (LMS). His research topics involve the design and development of hybrid production systems and cognitive mechatronic devices for reconfigurable manufacturing systems. His involvement in FP7 LIAA and H2020 projects VERSATILE, MERGING and SHAREWORK concerns the designing of collaborative workstations, human system interfaces, model-based deformable object co-manipulation planners and innovative systems for material handling and assembly.



Dr. Nicola Pedrocchi

Senior Researcher, Head of Personal Robotics for Manufacturing Laboratory (PERFORM Lab), Institute of Intelligent Industrial Technologies and Systems for Advanced Manufacturing (STIIMA)

National Research Council of Italy (CNR)

Mechanical Engineering, graduated cum Laude in 2004, and Ph.D. in 2008. Since 2008 he is a fellow researcher at CNR-ITIA, and since 2011 he is a researcher with CNR-STIIMA. His research field is on control techniques for Industrial Manipulators in advanced applications requiring the interaction of robot-environment (e.g., technological tasks) or robot-human operator (e.g., workspace sharing, teach-by-demonstration). He is involved in research for accurate elastic modeling and dynamic calibration of Industrial Robots. He coordinated one EU project in the field of robotics for aerospace, and he has been involved in more than 40 EU and National research funded projects. He is the scientist Responsible for the Intelligent Industrial Robotics for Manufacturing Laboratory (IIFORM Lab) and the scientist Responsible for the Control and Automation for Industrial Robotics Laboratory (CARI Lab).



Francesca Canale

Project Engineer

STAM

Francesca Canale received her Master Degree in Robotics Engineering at the University of Genoa, Italy, in 2020. During her studies she was involved in several projects where she has acquired a general knowledge of multiple aspects of robotics. She joined the Robotics and Mechatronic team of STAM in 2020 where she is a Project Engineer handling all the technical aspects of research and developments projects in the field of robotics, manufacturing and automation solutions. She mainly contributes to the development of software algorithms related to ROS, computer vision and machine learning and to hardware and software integration activities during the prototyping and demonstration phases.

Speakers

In order of appearance



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Jade LeMaitre

CEO

Proxinnov



Francisco Javier Bueno

Process and Manufacturing Engineering Director

ALSTOM



Mikel Mondragón

R+D+i Manager, Power Transmission Unit

Goizper S. Coop.

Mikel Mondragon, electronic engineer, R+D+i Manager in Power Transmission unit at Goizper. His passion is the technology and nature. More than 30 years in contact with technology, starting to work in maintenance, how industrial director, technical director and nowadays as orchestra-man.

Speakers

In order of appearance



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Andrea Scala

Technician

CEMBRE

Andrea Scala joined in Cembre in 2014 as a machine operator. From 2016 he is in charge of the managing all the company's industrial robots by programming, and designing new dedicated grippers and devices, as well as training operators.



Daniel Moreno

Head of the Automation Department

SEAT S.A.

Daniel Moreno Roca, he has been working for more than 20 years in different SEAT's Engineering Processes departments. Since 2017 he is responsible for the Automation department. The automation department coordinates the industrialization strategy for Industrial and Collaborative Robots within SEAT S.A.



Dr. Jan Peters

Full professor for Intelligent Autonomous Systems at the Computer Science Department

Technische Universitaet Darmstadt

Speakers

In order of appearance



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Dr. Rachid Alami

Senior Scientist, Laboratory for Analysis and Architecture of Systems (LAAS)

CNRS/ANITI

Dr. Rachid Alami is Senior Scientist at LAAS-CNRS. He received an engineer diploma in computer science in 1978 from ENSEEIHT, a Ph.D in Robotics in 1983 from Institut National Polytechnique and an Habilitation HDR in 1996 from Paul Sabatier University. He contributed and took important responsibilities in several national, European and international research and/or collaborative projects (EUREKA: FAMOS, AMR and I-ARES projects, ESPRIT: MARTHA, PROMotion, ECLA, IST: COMETS, IST FP6 projects: COGNIRON, URUS, PHRIENDS, and FP7 projects: CHRIS, SAPHARI, ARCAS, SPENCER, H2020: MuMMER, France: ARA, VAP-RISP for planetary rovers, PROMIP, several ANR projects).

His main research contributions fall in the fields of Robot Decisional and Control Architectures, Task and motion planning, multi-robot cooperation, and human-robot interaction.

Rachid Alami is currently the head of the Robotics and InteractionS group at LAAS.

He is holding since 2019 the Academic Chair on Cognitive and Interactive Robotics at the Artificial and Natural Intelligence Toulouse Institute (ANITI).



Andrea Orlandini

Researcher

National Research Council of Italy, Institute of Cognitive Sciences and Technologies (ISTC-CNR)

Researcher working at the Institute of Cognitive Sciences and Technologies (ISTC-CNR), in Rome. He got a degree in Computer Science Engineering and he received his PhD in 2006 defending the thesis "Logical Based Approaches to Artificial Intelligence Planning and Robot Control" at the Roma Tre University in Rome (Italy). He is currently working within the Planning and Scheduling Team at ISTC-CNR, studying temporal plan validation and execution problem in research projects. His research interests span over automated planning, temporal logic, dependable plan execution and model-based robot control.

Speakers

In order of appearance



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Francesco Ferro

CEO

PAL Robotics

CEO, owner, and co-founder of PAL Robotics, one of the leading service robotics companies worldwide since 2004. He received a BSc+MSc degree in Telecommunications Engineering in 2002 at the Politecnico di Torino (Italy), a Master at ISEN in Lille (France), and in 2011 an Executive MBA at the University of Barcelona (Spain). Since 2004 he has been working in the development of state-of-the-art robots specially designed to solve clients' needs. Today PAL Robotics is known for the humanoid robots biped REEM-C, TALOS, Kangaroo, and the SOLO 12 quadruped platform, TIAGo Mobile Manipulator, ARI a Social Robot, as well as the retail and manufacturing solutions, TIAGo Base and StockBot. He has also been a member of different boards of international associations such as euRobotics (SME industry director), HispaRob, ITEA (Cybersecurity Expert) and IFR (Industry Chair of Service Robotics).



Daniel Serrano

Director of the Robotics and Automation Unit

Eurecat

Daniel Serrano is director of the Robotics unit at Eurecat. Graduated in Computer Engineering from the Autonomous University of Madrid (UAM) and Master in Robotics and Automation from the Polytechnic University of Catalonia (UPC), he has 17 years of professional experience in autonomous and cognitive robotics. He has always worked in high-tech companies, startups and technology centers. As a researcher, he has focused on the generation of autonomous and intelligent robot behaviors for service, assistance and collaborative robotics applications. He has participated in more than 30 projects, both national and European. He is also author and co-author of several technical and scientific publications.



Jan Puig

Sales Director at Spain and Portugal

Pilz

Jan holds an Industrial Engineering Degree from UPC. He has been for 15 years managing automation and robotic products in leading companies to help all manufacturing industries to thrive. He is also board member of the Spanish Association of Robotics and Automation (AER).



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About Sharework Project

Sharework project endows an industrial work environment of the necessary "intelligence" and methods for the effective adoption of Human Robot Collaboration (HRC) with no fences. The project has developed a software and hardware modular system capable of understanding the environment and human actions through knowledge and sensors, future state predictions, smart data processing, augmented reality and gesture and speech recognition technology in order to make the robot overcome human barriers and ensure a more effective cooperation. The system has been validated in four types of real industrial scenarios in the automotive, railway, metal and capital goods manufacturing industries.

Organisers:



SEAT S.A.



Consiglio Nazionale
delle Ricerche



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Machine Dynamics
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& Automation



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www.sharework-project.eu

@Sharework_EU

info@sharework-project.eu