

Newsletter



PILLAR ROBOTS

Pillar Robots is about increasing the *autonomy* of robots.

Welcome to the 5th issue of the PILLAR-Robots newsletter!

The PILLAR-Robots consortium consists of 6 partners. PILLAR-Robots aims at developing a new generation of robots endowed with a higher level of autonomy, that are able to determine their own goals and establish their own strategies, creatively building on the experience acquired during their lifetime to fulfil the desires of their human designers/users in real-life application use-cases.

To this end, the project will operationalize the concept of Purpose, drawn from the cognitive sciences, to increase the autonomy and domain independence of robots during autonomous learning and, at the same time, to lead them to acquire knowledge and skills that are actually relevant for operating in target real applications. In particular, the project will develop algorithms for the acquisition of purpose by the robot, ways to bias the perceptual, motivational and decision systems of the robots' cognitive architectures towards purposes, and strategies for learning representations, skills and models that allow the execution of purpose-related deliberative and reactive decision processes.

ERF 2024

Workshop highlights

PAL Robotics



ERF 2024 took by storm and during the event a workshop on mobile manipulation was co-organized by PILLAR-Robots, PAL Robotics, and TU Delft. In this article, you can find details of presentations and discussions on advancements in robotic manipulation and its applications, featuring insights from leading European researchers and plans for future forums.

[Read the article](#)

[LEARN MORE](#)

Stephane Doncieux's insights

Sorbonne University



In the dynamic field of robotics and artificial intelligence, we're excited to share a conversation with Stephane Doncieux, Professor of Computer Science at the Institute of Intelligent Systems and Robotics (ISIR) at Sorbonne University. As the Principal Investigator for the PILLAR-Robots project at Sorbonne, Professor Doncieux is at the cutting edge of developing robots that can seamlessly interact and learn within human-centric environments. Today, we delve into his perspectives on the evolution of robot autonomy and the collaborative potential within the field of Mobile Manipulation.

[Read the interview](#)

ERF 2024

Sister Projects Meeting

UDC



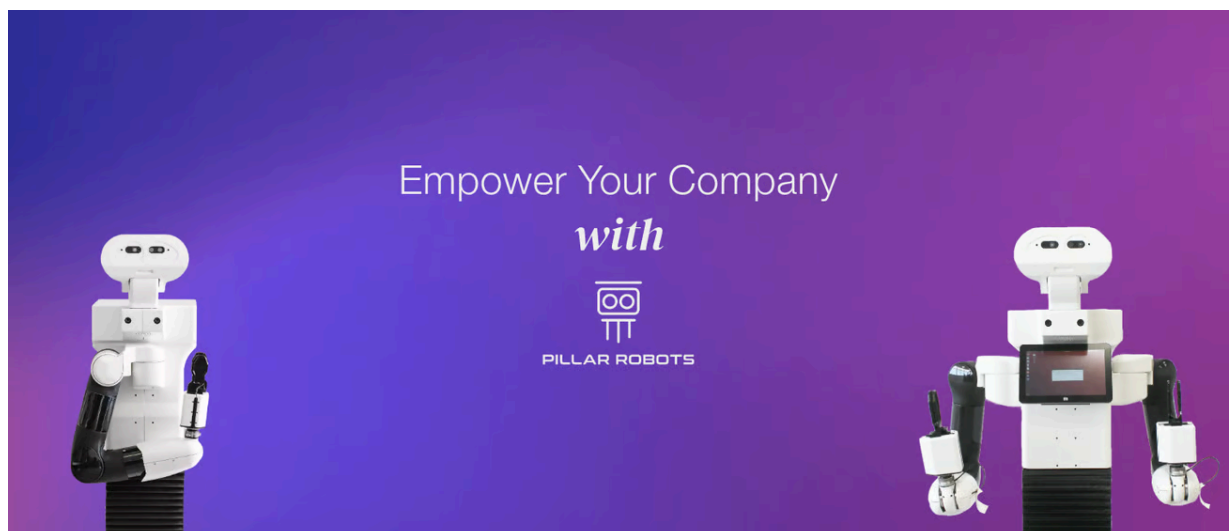
The inaugural meeting with sister projects at ERF2024 marked a pivotal moment in fostering collaboration and synergy among leading robotics initiatives.

[Learn more](#)

LET'S COLLABORATE

Empower Your Company with PILLAR-Robots

AI2Life



Are you looking for a collaboration aimed at improving the efficiency of post-harvest fruit and vegetable activities, enriching students' learning experiences, and enhancing the efficiency of industrial activities? You are in the right place.

[Learn more](#)

GET TO KNOW

People behind the project

[PAL Robotics](#)

Coordinator



Richard J. Duro

Professor | [University of A Coruña](#)

Role in the project: Project's coordinator

Richard J. Duro is a Full Professor of Computer Science and Artificial Intelligence at the University of Coruña in Spain and the Coordinator of the Integrated Group for Engineering Research at this university since 1999. His teaching and research interests are in intelligent systems and autonomous robotics and his current work concentrates on motivational systems and developmental cognitive robotic architectures. He is now involved in several projects related to autonomous robotics including the PILLAR-Robots Horizon project, which he coordinates.



Our team



Thomas Peyrucain

Technical Collaborative Project & Robotics Engineer | [PAL Robotics](#)

Role in the project: Technical coordination and support for software integration on the TIAGo robot

In 2020, Thomas obtained a dual degree in Mechatronics at ESIGELEC Engineering School (Rouen, France) and a Master in Robotics at Cranfield University (Cranfield, England). In 2021 he joined PAL Robotics as a Robotics Engineer, focusing on technical developments especially for the range of EU projects that PAL Robotics is involved in.



Meet the team working hard behind the scenes to achieve the goals of the PILLAR-Robots project!

[Take a look!](#)

GET TO KNOW

The Consortium

[ARC](#)

In this article, the team from the Athena Research and Innovation Center explain better how exactly they are involved in the PILLAR-Robots project and how the team applies their expertise in creating the new generation of robotics.

[Read the article](#)

GET TO KNOW

The project

UDC

The work package 5 focuses on developing a foundational cognitive architecture enabling Lifelong Open-ended Learning Autonomy (LOLA) in robots, adaptable to user needs. The process unfolds in two parts: first, conceptual design, mapping robotic functionalities to computational requirements, drawing from existing cognitive architecture models and previous project outputs. The architecture is inspired by the Standard Model of the Mind and integrates ideas from MDB, GRAIL, DREAM, and Goal-Robots projects. Second, software implementation using ROS as a core, augmented by a middleware layer for scientist-friendly programming and distributed execution management. While this design serves as an initial reference, future iterations will integrate additional functionalities like purpose management, motivational engine, and attention mechanisms, reflecting ongoing research advancements within the project.

MEETING

At Athena Research Center

ARC



In February, a three-day collaboration meeting was held in Athens, Greece, bringing together teams from Athena RC, Universidade da Coruña, CNR, and AI2Life. This gathering provided a valuable opportunity for the partners to engage in face-to-face discussions on several active topics regarding the PILLAR project.

[Learn more](#)

[MORE NEWS](#)

Paper publications

ISTC-CNR

Pillar-Robots partner, ISTC-CNR, has published a number of scientific papers that focus on our project. Have a look at them:

Autonomous Learning of Task Sequences in Robotic Scenarios with Non-Stationary Interdependencies

[Read the paper](#)

Purpose for Open-Ended Learning Robots: A Computational Taxonomy, Definition, and Operationalisation

[Read the paper](#)

Thank you for reading!



Funded by
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