

## Fiche de poste

**Intitulé du poste : Ingénieur-e de recherche sur le thème « Purposeful Intrinsically motivated Lifelong Learning Autonomous Robots »**

Type de poste :  Post-Doc  Ingénieur-e  Autre : ...

Date de début de contrat : à partir de mars 2024

Durée du contrat : 12 mois

Quotité de travail :  100%  autre précisez (50 % minimum) :

Expérience souhaitée :

- Débutant  
 1 - 4  
 4 - 10  
 + de 10

Niveau d'études souhaité : Diplôme d'Ingénieur-e ou Master 2

Montant rémunération : selon grille de rémunération

Laboratoire d'accueil : ISIR (*Institut des Systèmes Intelligents et de Robotique*), Campus Pierre et Marie Curie, 4 place Jussieu, 75005 Paris.

## Personne à contacter

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Candidature :

- En ligne. Lien vers le portail emploi :  
 Par mail. Envoyer votre candidature par mail, avec [ENGINEER CANDIDATE] en objet, un CV et une lettre de motivation.

## Description du poste (en anglais)

**Engineer position at Institute of Intelligent Systems and Robotics, Sorbonne University, Paris, France, within the EU Project PILLAR-Robots (n. 101070381) in the topic of "Purposeful Intrinsically motivated Lifelong Learning Autonomous Robots".**

### Research activity

The goal of the Engineering position is to integrate recent robotic developments in the framework of the EU projects PILLAR-Robots (<https://pillar-robots.eu/>) and EuRobin (<https://www.eurobin-project.eu/>). The main objective will be to implement and integrate control strategies to accomplish manipulation tasks for industrial scenarios as well as home applications. As a result of our ongoing research and collaboration, we have several components/modules for robotic applications, each dedicated to a specific task: e.g., object recognition, pose estimation, motion

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planning for grasping, language models, navigation, decision-making, etc. Therefore, the majority of the activity for this position will be dedicated to programming, and integrating through the ROS middleware, such control strategies into dedicated robotic platforms; i.e., PR2, TIAGo from PAL robotics or Miroki from Enchanted Tools.

The research activities will be supervised by Prof. Stéphane Doncieux and Prof. Mahdi Khoramshahi in collaboration with the other researchers at ISIR involved in PILLAR-robots and EuRobin projects.

### The position

This is a one-year full-time Engineering position. A second-year contract will be granted upon completion of the first year and the satisfaction of both parties. The position will be paid according to the French salary regulations for Engineers considering the level of experience of the candidate.

### The required Skills

The applicants should ideally have:

- 1) a master's degree or engineering diploma in robotics and Control Systems,
- 2) good experience with programming (C++, Python under ROS1 and ROS2),
- 3) experience with robotic simulation environments (e.g., Gazebo and Bullet),
- 4) strong interest in experimental robotics: design and implementation of experiments with integrated systems and robots,
- 5) good understanding of robotic control systems; e.g., physical human-robot interaction, intention recognition, manipulation, and grasping,
- 5) ability to collaborate with high autonomy and self-responsibility,
- 6) availability to travel to project meetings with partners.

### The PILLAR-robots project

The EU-funded PILLAR-Robots project is developing a new generation of robots that can build on the experience acquired during the robots' lifetime to fulfill the wishes of their human designers/users in real-life applications. Researchers will operationalize the concept of "purpose," drawn from the cognitive sciences, to increase robot autonomy and domain independence during autonomous learning. The goal is to provide the robots with the knowledge and skills needed to operate under targeted applications. The project will use purposeful intrinsically motivated cognitive architecture in agri-food, edutainment, and unstructured industrial/retail field demonstrations.

<https://cordis.europa.eu/project/id/101070381>

### euROBIN: A European network of excellence in robotics

The euROBIN (European ROBotics and AI Network) project is an initiative funded by the European Union to create a network of excellence in robotics and artificial intelligence (AI). This network brings together leading researchers, institutions, and industrial partners in the field of robotics and AI, to develop innovative European technologies and solutions. The vision of euROBIN is to create a European ecosystem of robots capable of sharing their data and knowledge, exploiting their diversity to jointly learn to perform an infinite variety of tasks in human environments. The euROBIN project aims to make significant progress in four key scientific areas: Interaction with the environment, Transfer of learned knowledge, Transferable knowledge representation, and Human-centered knowledge transfer. The euROBIN project will demonstrate the relevance of its

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scientific results in four promising areas of application: personal robots, industrial robotics, robotics for the circular economy, and robots for quality of life and well-being.

The euROBIN network includes 31 partners from 14 countries, with leading research institutions and industrial partners in the field of robotics and AI.

<https://www.eurobin-project.eu/>

### ISIR

ISIR is under the dual supervision of [Sorbonne University](#), which is a world-class multidisciplinary university, and the Centre National de la Recherche Scientifique ([CNRS](#)), which is one of the most prestigious research institutions in the world. ISIR supports its academic and industrial partners to strengthen their innovation capabilities and gain competitiveness in new markets opened by robotics and artificial intelligence in many sectors. With more than 800 m<sup>2</sup> dedicated to experimental activities, the ISIR maintains one of the largest robotic and AI centers in Europe.

<https://www.isir.upmc.fr/isir/presentation/?lang=en>

### How to apply

Interested applicants can contact Mahdi Khoramshahi [[mahdi.khoramshahi@sorbonne-universite.fr](mailto:mahdi.khoramshahi@sorbonne-universite.fr)] AND Stéphane Doncieux [[stephane.doncieux@sorbonne-universite.fr](mailto:stephane.doncieux@sorbonne-universite.fr)] AND Aline Baudry [[aline.baudry@sorbonne-universite.fr](mailto:aline.baudry@sorbonne-universite.fr)], with a subject including "[ENGINEER CANDIDATE]", providing their CV and a cover letter briefly describing their background and their career plans. The position remains open until a satisfactory candidate is found.

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