Offer #2025-09011

Engineer F/M in learning robotic skills with foundation models, imitation learning and robot learning

Contract type : Fixed-term contract

Level of qualifications required : Graduate degree or equivalent

Fonction : Temporary scientific engineer

Context

This position is funded by the euROBIN European project (European Network of Excellence in ROBotics and AI), which involves 32 partners in Europe.

Our team is participating in one of the challenges of the project, so called "Personal Robotics challenge" where we want to develop the skills that robots need to helps humans in their tasks, such as opening doors, carrying small to medium heavy objects, navigate in a human environment, manipulate small objects, understanding natural language instructions and reasoning about possible plans. We will be tackling the problem with two approaches: 1) teleoperation and imitation learning, i.e., showing to the robots how to solve the tasks, and acquiring demonstrations to train machine learning models; 2) generative AI.

The position may involve regular travels to the European partners of the project, in particular to Munich (DLR) and Karlsruhe (KIT), as well as participating in "hackatons" with the partners to implement and compare concrete ideas, and robotics competitions. In particular, two robotics demonstrations will take place in 2026 in Bruxelles and Wien (ICRA 2026).

The recruted engineer should participate in all the team's projects and activities.

Assignment

The overall objective is to develop research about teleoperation of human-like robots for data collection, imitation learning, and generative models for skills execution in concrete cases, especially dynamic tasks involving forces.

Most of the work will target the Tiago++ robot (2 arms + torso + wheeled base), but, when it is relevant, we will extend it to humanoid robots (Talos and G1). The code will be tested as often as possible on the real platforms.

The recruited person will be in connection with Serena Ivaldi and Jean-Baptiste Mouret. The engineer will also collaborate with the other engineers and phd students of the team.

Main activities

The main objective is to develop and publish new algorithms that help to fulfill the objectives of the euROBIN project. The engineer will be actively involved in the day-to-day experiments of the team, present the work to the other partners, and perform demos with the robots. He/she will also participate with the Inria team to robotics competitions and hackathons organized by the euROBIN project, and demonstrations of the robots' skills at the European Parliament and eventually ICRA 2026.

Skills

Ideal skills: whole-body control, C++ programming, machine learning, reinforcement learning, diffusion models, VLM/LLM

Required: good programming proficiency in Python or C++, knowledge of robotics (kinematics, dynamics, etc.) and machine learning.

Very good knowledge of English is a strong requirement (many interactions with the European partners).

Technical skills and knowledge:

- Whole-body control
- Machine learning methods
- Generative AI methods (diffusion, VLM, LLM..)
- Python and C++ programming
- ROS middleware and associated tools (Rviz, MoveIt!, etc.)
- Linux and RTOS
- Code versioning and continuous integration (git)

Required soft skills:

- Rigour and intellectual honesty
- Curiosity and desire to learn
- Analytical mindset and abstraction skills
- Practical mindset and ability to develop robust and reliable solutions
- Autonomy and organizational skills
- Desire to "work well"
- Not afraid of challenging projects

- Love working in a multi-cultural environment
- Team player
- Good communication skills at work, and ability to report progress

Benefits package

- Subsidized meals
- Partial reimbursement of public transport costs
- Leave: 7 weeks of annual leave + 10 extra days off due to RTT (statutory reduction in working hours) + possibility of exceptional leave (sick children, moving home, etc.)
- Possibility of teleworking (after 6 months of employment) and flexible organization of working hours
- Professional equipment available (videoconferencing, loan of computer equipment, etc.)
- Social, cultural and sports events and activities
- Access to vocational training
- Social security coverage

Remuneration

From 2692 € gross/month according to experience

General Information

- **Theme/Domain :** Robotics and Smart environments
  Software engineering (BAP E)
- **Town/city :** Villers lès Nancy
- **Inria Center :** Centre Inria de l'Université de Lorraine
- **Starting date :** 2025-09-01
- **Duration of contract :** 12 months
- **Deadline to apply :** 2025-07-16

Contacts

- **Inria Team :** LARSEN
- **Recruiter :**
  Ivaldi Serena / serena.ivaldi@inria.fr

About Inria

Inria is the French national research institute dedicated to digital science and technology. It employs 2,600 people. Its 200 agile project teams, generally run jointly with academic partners, include more than 3,500 scientists and engineers working to meet the challenges of digital technology, often at the interface with other disciplines. The Institute also employs numerous talents in over forty different professions. 900 research support staff contribute to the preparation and development of scientific and entrepreneurial projects that have a worldwide impact.

The keys to success

The ideal candidate loves working with (real) robots and solving concrete problems. He/She is proficient in programming (C++, Python), is curious about technology, and likes working in a team.

Warning : you must enter your e-mail address in order to save your application to Inria. Applications must be submitted online on the Inria website. Processing of applications sent from other channels is not guaranteed.

Instruction to apply

Defence Security :
This position is likely to be situated in a restricted area (ZRR), as defined in Decree No. 2011-1425 relating to the protection of national scientific and technical potential (PPST).Authorisation to enter an area is granted by the director of the unit, following a favourable Ministerial decision, as defined in the decree of 3 July 2012 relating to the PPST. An unfavourable Ministerial decision in respect of a position situated in a ZRR would result in the cancellation of the appointment.

Recruitment Policy :
As part of its diversity policy, all Inria positions are accessible to people with disabilities.