2018-00348 - Software engineer / Audio-visual perception for robotics

Renewable contract : Oui
Level of qualifications required : Graduate degree or equivalent
Fonction : Temporary scientific engineer

About the research centre or Inria department

Grenoble Rhône-Alpes Research Center groups together a few less than 800 people in 35 research teams and 9 research support departments.

Staff is localized on 5 campuses in Grenoble and Lyon, in close collaboration with labs, research and higher education institutions in Grenoble and Lyon, but also with the economic players in these areas.

Present in the fields of software, high-performance computing, Internet of things, image and data, but also in simulation in oceanography and biology, it participates at the best level of international scientific achievements and collaborations in both Europe and the rest of the world.

Context

Perception team (https://team.inria.fr/perception), at INRIA Grenoble Rhône-Alpes and Jean Kuntzman Laboratory at Grenoble Alpes University, works on computational models for mapping images and sounds onto meaning and actions. The team members address these challenging topics: computer vision, auditory signal processing and scene analysis, machine learning, and robotics. In particular, we develop methods for the representation and recognition of visual and auditory objects and events, audio-visual fusion, recognition of human actions, gestures and speech, spatial hearing, and human-robot interaction.

The team uses humanoid robots to demonstrate its results and it develops a software platform to ease implementation and integration of robotics software.

Assignment

We are seeking an engineer to fulfill the following missions:

- Co-develop software solutions with researchers, PhD students and engineers of the team. Developed algorithms address the following topics: computer vision, multi-modal signal processing, machine learning.
- Perform data acquisition and data annotation to ease the benchmarking of learning methods developed by the team. These datasets are also used when testing on robots.
- Maintain software already developed by the team : integration tests, benchmarks, etc.
- Implement software solutions based on algorithms developed by the team.
- Propose set-up for dataset acquisition. Manage software tests to validate software performances and robustness in simulation mode and on robotic platforms.
- Write deliverables.
- Participate to technical meetings with team members.

Main activities

- Participate to technical meetings with team members.
- Write deliverables.
- Propose set-up for dataset acquisition. Manage software tests to validate software performances and robustness in simulation mode and on robotic platforms.
- Implement software solutions based on algorithms developed by the team.
- Co-develop software solutions with researchers, PhD students and engineers of the team. Developed algorithms address the following topics: computer vision, multi-modal signal processing, machine learning.
- Perform data acquisition and data annotation to ease the benchmarking of learning methods developed by the team. These datasets are also used when testing on robots.
- Maintain software already developed by the team : integration tests, benchmarks, etc.

Skills

- Required : C/C++, Linux, Git, CMake
- Desired : Bash, Jenkins, ROS, Python, OpenCV, Boost, Qt, Matlab
- Appreciated : signal processing, mobile robotics, computer vision
- English : fluent (technical)

Benefits package

Restaurant on site
Financial participation for public transport
Social security
Social and sporting activities
Arranging working time
French courses

Remuneration

Between 2562€ and 2936€ (gross salary), depending of seniority.