2019-02083 - Researcher on Deep and Reinforcement Learning for Robotics

Renewable contract : Oui
Level of qualifications required : PhD or equivalent
Function : Tempary Research Position

About the research centre or Inria department
Grenoble Rhône-Alpes Research Center groups together a few less than 800 people in 39 research teams and 8 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 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
The job will be located in Grenoble, France, and will be part of the Perception Inria research group. The team focuses on robotics, audio-visual analysis and applied machine learning, and is made of 3 faculty members, 1 permanent engineer, approx. 5 PhD students and 4 postdocs and engineers. The team is very international and English is the working language. The position is line with the recently awarded H2020 ICT SPRING project.

SPRING – Socially Pertinent Robots in Gerontological Healthcare – is a 4-year R&D project fully funded by the European Commission under the H2020 framework. SPRING aims to develop socially assistive robots with the capacity of performing multi-person interactions and open-domain dialogue. The scientific objective of SPRING is to develop a novel paradigm and novel concept of socially-aware robots, and to conceive innovative methods and algorithms for computer vision, audio processing, sensor-based control, and spoken dialog systems based on modern statistical- and deep- learning to ground the required social robot skills. The technological objective of SPRING is to create and launch a brand new generation of robots that are flexible enough to adapt to the needs of the users, and not the other way around. The experimental objective of SPRING is twofold: to validate the technology based on HRI experiments in a gerontology hospital, and to assess its acceptability by patients and medical staff.

The project gathers academic and industrial partners in Italy (Università degli Studi di Trento), Czech Republic (České Vysoké Učení Technické v Praze), UK (Heriot-Watt University), Israel (Bar-Ilan University), Spain (RAI Robotics) and France (ERM Automatismes Industriels, Assistance Public Hôpitaux de Paris, and Inria). Frequent travel to visit partners is required (up to 5 times a year).

Assignment
The Perception team offers a senior postdoc position to work in the field of multimodal learning for human robot interaction. More precisely, the objective is to learn robot behavior in human-robot interaction scenarios based on robot–motor feedback and on visual and audio data gathered with cameras and microphones mounted onto a robotic head. Emphasis will be put on learning social interactions between the robot and a group of people and on developing novel methodological concepts and practical solutions based on deep and reinforcement learning.

Main activities
- Keep updated with the state-of-the-art and inform the SPRING team about relevant publications.
- Conceive new learning methods, models and algorithms suitable for the role of Inria in the SPRING consortium.
- Daily supervision of the development of software prototypes, experimental validation and publication writing.

Skills
The candidates should have strong expertise and a very good publication record in at two out of the following topics: machine learning, computer vision, audio signal processing. Moreover, they should have excellent written- and oral scientific communication skills. Senior postdoc candidates (2-3 years of experience after the PhD) will be preferred but junior postdoc candidates (0-1 year of experience) with strong CVs are encouraged to apply as well. The recruited researcher will work in close collaboration with the group members (two senior researchers, 4-5 PhD students and three development engineers) and with the SPRING partners.

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
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- Access to vocational training
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Remuneration
From 2936€ to 4150€ gross per month (according to experience)

General Information
- Theme/Domain : Vision, perception and multimedia interpretation
- Software Experimental platforms (BAP E)
- Town/City : Montbonnot
- Inria Center : CRI Grenoble - Rhône-Alpes
- Starting date : 2020-02-01
- Duration of contract : 2 years
- Deadline to apply : 2019-12-31

Contacts
- Inria Team : PERCEPTION
- Recruiter : Alameda-pineda Xavier / xavier.alameda-pineda@inria.fr

About Inria
Inria, the French national research institute for the digital sciences, promotes scientific excellence and technology transfer to maximise its impact. It employs 2,400 people. Its 200 agile project teams, generally with academic partners, involve more than 3,000 scientists in meeting the challenges of computer science and mathematics, often at the interface of other disciplines. Inria works with many companies and has assisted in the creation of over 160 startups. It strives to meet the challenges of the digital transformation of society, science and the economy.

Instruction to apply
Defence Security : This position is likely to be situated in a restricted area (ZRR), as defined in Decree No. 2011-142 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.

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.