PhD position in cognitive robotics and machine learning

> The CRISSP Team (Cognitive Robotics, Interactive Systems & Speech Processing) of the GIPSA-Lab at UGA (University Grenoble Alpes) is looking for a PhD student to reinforce our research on cognitive robotics and machine learning. This work will be conducted in partnership with the MARVIN team of the LIG-Lab from the same university.
> The position will be financed by the MIAI@UGA, one of the four AI institutes[1] selected in France.

Social robots are robots which interact with people in a natural manner by using speech, gestures, gaze, and facial expressions for example. As social robots use natural communication, they are easy to interact with and have many applications in entertainment, services, education, collaborative robotics and therapy. Cognitive robots are social robots endowed with cognitive functions such as perception processing, attention allocation, anticipation, planning, complex motor coordination, and reasoning about other agents and perhaps even about their own mental states.

Now however, the interactive behaviours of these robots are often hand-crafted, as training behavioural models from the observation of human-human interactions is still largely impossible. Our research aims at endowing robots with interactive behavioural models from human demonstrations. CRISSP has developed an operational robotic platform[2] that enables a human pilot to demonstrate interactive behaviours to Nina - our iCub robot with an enhanced talking head - via immersive teleoperation.

The project will study how a robot can use generative deep learning to convert interactive experiences into models that can be reused by using AI planner to produce short term and long term verbal and non-verbal interaction at a level where people think the robot is a worthy conversation partner..The goal is also learn how to adapt the behaviours produced to specific interaction circumstances. In other words, the project focuses on adaptive behaviours, i.e. the robot's ability to align with human partners in the short, mid and long term using style embeddings.

You will be supervised by Prof Gérard Bailly (www.gipsa-lab/~gerard.bailly) together with Dr. Damien Pellier (lig-membres.imag.fr/PPerso/membres/pellier/) and Dr. Frédéric Elisei (www.gipsa-lab.fr/~frederic.elisei). You will be part of an interdisciplinary research team, focusing on "Collaborative Intelligent Systems" as part of the MIAI@UGA AI institute.

Global Shanghai Ranking for Academic Subjects 2018 places UGA (www.univ-grenoble-alpes.fr/english/) as the no. 1 French university in 11 subjects, and internationally ranks 31st in Computer Sciences & Engineering. With 46,000 students and 5,800 staff, the university hosts 80 laboratories in a landscaped campus of 175 hectares surrounded by mountains. You will join the CRISSP team which is part of GIPSA-Lab, a research lab of more than 350 persons developing today the tech of tomorrow.

Profile of the candidate

You must have an MSc degree in computer science, electrical engineering, technical cognitive science or areas relevant to the research topic. Good programming skills are required (C++, Python, or other), as well as training in machine learning. English (spoken as well as written) is mandatory. Being fluent in French language is a plus. The PhD position is highly interdisciplinary and requires an understanding and/or interest in psychology and social sciences.

---

[1] https://www.gouvernement.fr/en/ai-research-institutes-established-in-grenoble-nice-paris-and-toulouse
[2] https://news.cnrs.fr/videos/meet-nina-the-social-robot

Further details:

- The position starts on 1st October 2019 and runs for 3 years. Be aware that recruitment of non EU-students may delay this taking up
- The net salary will be approximately 1700€ per month. The salary may be raised to 1950€ with a complementary teaching service. You will also receive a holiday allowance and will enjoy full social security cover. Additional financial support is available for attending conferences and workshops.
- You will be affiliated with the GIPSA-Lab. While the research will be based in Grenoble, occasional travel to international schools, conferences or workshops will be required.
- You will be enrolled in the doctoral training programme offered by the Doctoral School of Engineering.
- University encourages equal opportunities and will consider applications only based on your potential as an early career researcher.

How to apply

For informal queries, do not hesitate to contact Gérard Bailly (gerard.bailly@gipsa-lab.fr). Your application should include :

- a letter motivating your application
- a CV, copies of relevant exams, grades, master thesis work or publications
- the names and contact details of at least 2 referees. Recommendation letters should be included with your application

Applicants should send their application to gerard.bailly@gipsa-lab.fr. The application deadline is 15 July 2019. Selected candidates will be invited for interview, which can be organised over Skype if necessary.