PhD studentship: Safe Multi-Agent Reinforcement Learning for Autonomous Robotic Teams

Apply for a full-time a three-year PhD studentship, supported by the Defence Science & Technology Laboratory (DSTL)

**Qualification type:** PhD  
**Location:** York, UK and Rennes, France  
**Funding for:** UK and French citizens only  
**Funding amount:** £14,777  
**Hours:** Full Time  
**Closes:** Friday, 1 June 2018

**Safe Multi-Agent Reinforcement Learning for Autonomous Robotic Teams**

Applications are invited for a three-year PhD studentship, supported by the Defence Science & Technology Laboratory (DSTL), to be undertaken within the Department of Computer Science (http://www.cs.york.ac.uk/) at the University of York. The successful applicant will join one of UK’s top research departments in Computer Science, and will pursue research in the rapidly evolving area of machine learning for safety-critical systems, under the supervision of Dr. Radu Calinescu and Dr. Daniel Kudenko. The PhD project will include secondments at the Institut National de Recherche en Informatique et Automatique (INRIA) in Rennes, France, where the PhD student will be co-supervised by Prof. Olivier Barais.

The PhD project will closely collaborate with, and contribute to, the newly-established Assuring Autonomy International Programme (https://www.york.ac.uk/assuring-autonomy/), a £12 million initiative funded by Lloyd’s Register Foundation and the University of York to spearhead research, training and standards in the safety of robotics and autonomous systems, especially those relying on AI and machine learning.

**Start date:** October 2018
Background of the Project

Robotic teams and other distributed autonomous systems are envisioned to enable important new applications in domains ranging from transportation and manufacturing to healthcare. Achieving this vision is very challenging, as it requires systems capable of operating safely in continually changing, uncertain scenarios. This PhD project will contribute significantly to addressing this challenge by devising safe multi-agent reinforcement learning techniques for the development of trustworthy distributed-control software for robotic teams. These techniques will be integrated with state-of-the-art distributed systems middleware developed at INRIA-Rennes, and the resulting technology will be validated in a robotic team demonstrator.

Research supervision

If successful, you will conduct your research under the co-supervision of:

- Dr. Radu Calinescu
- Dr. Daniel Kudenko
- Professor Olivier Barais

Award funding

If successful, you will be supported for three years. Funding includes:

- £14,777 (2018/19 rate) per year stipend
- Home/EU tuition fees
- Provision for secondments to INRIA-Rennes, research collaboration visits, and travel to conferences.

Funding requirements

To be considered for this funding you must:

- meet the entrance requirements for a PhD in Computer Science
- be a UK or French citizen
We will look favourably on applicants that can demonstrate a strong mathematical background, a keen interest in machine learning and AI, and excellent writing, communication, presentation and organization skills.

Apply for this studentship

Apply to study
You must apply online for a full-time PhD in Computer Science (https://www.cs.york.ac.uk/postgraduate/research-degrees/phd/#tab-4)

You must state “MARL DSTL Studentship” in the “Funding information” section of your application.

There is no need to write a full formal research proposal (2,000-3,000 words) in your application to study as this studentship is for a specific project.

Deadlines
The closing date for the receipt of applications is Friday, 1 June 2018.

Informal enquiries

Project enquiries
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