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PhD Studentship in Computer Science (Socially adaptive behaviour of mobile service robots in long-term scenarios)

Faculty of Science - School of Computer Science

The University of Lincoln is seeking to recruit a new PhD student to join the recently established Centre for Autonomous Systems (L-CAS). The centre is internationally recognised for its research in sensing, mapping, and control for autonomous robotic systems, and currently comprises 6 faculty staff and 14 post-graduate researchers. The successful candidate will be offered a studentship as part of a European collaborative project, involving six academic institutes and two industrial partners across four European countries.

The project aims to enable robots to achieve robust and intelligent behaviour in human environments through adaptation to, and the exploitation of, long-term experience. The approach is based on understanding 3D space and how it changes over time, from milliseconds to months. The project will develop novel approaches to extract quantitative and qualitative spatio-temporal structure from sensor data gathered during months of autonomous operation. The project will also develop control mechanisms which exploit these structures to yield adaptive behaviour in highly demanding, real-world security and care scenarios.

This PhD studentship is focussed in the area of adaptive motion by mobile service robots in the presence of humans (with varying mobility-related abilities) during long-term operations. Primary tasks include developing novel algorithms and approaches for reward-based learning and adaptation of motion behaviour of a mobile robot in the social and spatio-temporal context. Additional tasks include the integration of the developed adaptive motion behaviours into a mobile robotic system and its scientific evaluation as well as contributions to the overall project aims.

The studentship offers the opportunity to engage in international collaboration within an ambitious team, to work with state-of-the-art robotic hardware and software, and to benefit from excellent support to produce and disseminate original research contributions. The successful candidate will possess excellent skills in programming and systems integration. Hands-on practical experience in areas including (but not limited to); human-robot interaction, mobile robotics, machine learning, and robotic frameworks and middleware would also be an advantage. The candidates should possess a good honours degree in Computer Science or related discipline. Evidence of ability to engage in scientific research and to work collaboratively as part of a team, including excellent communication skills in both written and spoken English, is required. The studentship will cover tuition fees and a stipend based on the [Research Council UK \(RCUK\) stipend levels](#) for up to four years, as well as opportunities for travel and participation in international conferences and project meetings.

The School of Computer Science at the University of Lincoln scored highly in the UK Research Assessment Exercise (RAE 2008) with 85% of its outputs ranked at international quality or better with 15% ranked world-leading. The School provides a stimulating environment for academic research, and is based on the picturesque waterfront campus in the vibrant city of Lincoln in high quality, newly developed facilities. The research facilities available within the School of Computer Science include research laboratories and office spaces with state-of-the-art computing facilities for an international community of academics, researchers and graduate students. L-CAS also enjoys access to well-appointed research laboratories, with a number of different research platforms including mobile robots, imaging and sensing technologies.

For further information see <http://www.lincoln.ac.uk/socs> and <http://robots.lincoln.ac.uk/>.

Interested candidates are invited to send a Curriculum Vitae to Dr Marc Hanheide (mhanheide@lincoln.ac.uk) with the subject line "Application for PhD Position in Long-term Autonomy"

Informal enquiries about the post can also be made to Dr Marc Hanheide (email: mhanheide@lincoln.ac.uk) and Dr Tom Duckett (email: tduckett@lincoln.ac.uk).

Closing date: 27th January 2013