DEPARTMENT OF ELECTRONIC AND ELECTRICAL ENGINEERING

PhD Studentship: Multi-Static RF Sensing with Active and Passive Nodes

A fully funded four-year EPSRC CASE PhD studentship with Dstl as a sponsor is available to UK national students

Duration of study: Full Time- four years fixed term

Starting date: 1st October 2019 (or as soon as possible)

Application deadline: 30th May 2019 (or until filled)

Supervisor: Dr Matthew Ritchie

A fully-funded four-year PhD studentship is available to UK nationals to develop new multistatic radar network systems hardware and signal processing. The student will work under the supervision of Dr Matthew Ritchie within the Department of Electronic and Electrical Engineering, University College London.

Radar systems have developed significantly over recent years due to advances in re-programmable software defined solutions that can operate in co-ordinated networks. The clear trend is to move away from single large platforms with a monostatic radar system to a series of smaller more agile platforms, using multistatic sensing and co-ordinating the information obtained. Little work has been completed into how to utilize a combination of active and passive radar sensors and this research will aim to push new ideas within this sensing to help solve problems in this challenge. Through your research, you will develop skills in experimental radar measurements, signal processing and algorithm design, data analysis and effective communication.

The candidate will conduct innovative research on the complex challenge of utilizing multiple radar nodes in a combination of active and passive modes. These proposed radar networks have significant potential to operate in complex scenarios and still detect challenging targets. The PhD student will have the opportunity to 1) Use existing systems and develop new hardware for a radar network 2) Perform experiments with challenging targets (such as small drones) and 3) Analyse the data gathered in order to optimise the detect, track and classification of the targets of interest.

Applicants must hold, or be near completion of a first or upper-second class degree in Engineering, Computer Science, Applied Mathematics, or a related subject, with theoretical background and have an interest in radar and signal processing. The ideal candidate will show understanding of RF sensing, classification and RF hardware. The candidate must show a strong interest to engage in innovative high-profile research. Fluency in English is also required.

This PhD project is sponsored by the Defence Science and Technology Laboratory (DSTL) through an industrial case award provided by EPSRC. Due to the funding restrictions, only UK citizens are eligible to apply.

The candidate is expected to:

- Have excellent analytical and engineering skills
- Have excellent reporting and communication skills
- Be motivated, independent and team player
- Have genuine enthusiasm for the subject and technology
- Have the willingness to author and publish research findings in international high-profile journals
- Aim to spend about a month per year working with the Radar Sensing team at Dstl Porton Down helping to integrate your research with their activities.

The studentship is available for four years and covers tuition fees at the UK rate, plus a stipend at £17,798 pa (tax free, increasing with inflation).

Informal enquiries should be addressed to Dr Matthew Ritchie (m.ritchie@ucl.ac.uk).

Formal applications should be submitted with a CV, a brief statement of motivation and research interests, and with names and email addresses of two referees to m.ritchie@ucl.ac.uk