

PHD STUDENTSHIP

SECURE VEHICULAR AD HOC NETWORK (VANET) ARCHITECTURES

AWARD DETAILS: TUITION FEES + BURSARY 13,600 PER YEAR (TAX FREE)
ELIGIBILITY: UK/EU STUDENTS ONLY
DURATION OF AWARD: 3 YEARS
APPLICATION DEADLINE: 16TH MAY 2014

Coventry University has a long tradition as a provider of education. Our roots go as far back as Coventry College of Design in 1843. Founded as an industrial university focused on the needs of major multinational manufacturing companies based locally, Coventry prides itself for its tradition of industry-facing research that is developed through close collaboration with organisations and meets international excellence standards. This studentship will be based at the Faculty of Engineering and Computing which has a distinguished record of research with teams working across a range of subject areas including cyber security, vehicle dynamics and safety, control theory, sensing, and human factors.

Vehicular Ad hoc Network (VANET) technology is revolutionising the development of vehicles, underpinning a whole range of new innovative services to be offered for intelligent navigation, autonomous features and passenger safety. As vehicles become open interfaces for communication, risks to security of such communications becomes a reality, possibly leading to cyber attacks being launched to intercept, manipulate and violate vehicle operations.

Under the supervision of Dr Siraj Shaikh (Reader in Cyber Security) and Dr Olivier Haas (Reader in Applied Control Systems), this doctoral research aims to adopt a holistic approach to a secure VANET architecture, with attention paid to the convergence of communication features with vehicle control. A systems methodology would be adopted with a view to developing a secure VANET model, which provides for a generic implementation and critical security features built-in from ground up. This would combine automobile control engineering principles with security properties of authentication, availability, integrity and confidentiality, in a layered model implemented on a configurable basis.

This research studentship has been proposed in collaboration with and will benefit from the active supervision, support and participation of MIRA, a leading Motor Industry organisation in the UK. It is expected that the research student will spend a significant proportion of time at MIRA's facilities, located just to the North of Coventry, to support their research investigations.

The student will be asked to contribute to the intellectual life of the university, by giving presentations, take part in reading groups, inform the postgraduate teaching with cutting edge research insights, and work closely with peers to help towards a flourishing research culture.

Successful applicants will:

- Have a first or good upper second class undergraduate degree in computer science, systems engineering or a related degree with a strong interest in pursuing research in this field;
- Have a taught Masters degree in a relevant discipline, involving a dissertation with some experimental, modelling or analytical component; we expect applicants to have gained at least merit level (or equivalent);
- Possess a good knowledge of communication and networking, and conceptual understanding of security;
- Have some experience of (or a willingness to quickly learn) modelling and analysis (using UML or CSP), and implementation in languages such as C or Java;
- Have the potential to engage in innovative research and complete the PhD within a three year period;
- Be expected to become active members of the University's academic community; and
- Have a minimum of English language proficiency (IELTS 7, or equivalent, in all skills).

APPLICATION PROCEDURE: Please submit a full CV and covering letter describing your motivation and suitability for this studentship by the deadline by email to s.shaikh@coventry.ac.uk.

Applications will be evaluated on the academic strength of the candidates and the match between the candidate, proposed project and available supervisors. Shortlisted applicants will be invited during week commencing 26th May for a brief presentation and skills test, followed by an interview.

For any further enquiries please contact Dr. Siraj Shaikh by email at s.shaikh@coventry.ac.uk. For further information on the university please visit www.coventry.ac.uk.