



School of Computing, Engineering, and the Built Environment Edinburgh Napier University

PHD STUDENT PROJECT

Application instructions:

Detailed instructions are available at :

<https://www.napier.ac.uk/research-and-innovation/doctoral-college/how-to-apply>

Prospective candidates are encouraged to contact the Director of Studies (see details below) to discuss the project and their suitability for it.

Project details

Supervisory Team:

- DIRECTOR OF STUDY: Dr Craig Thomson (Email: c.thomson3@napier.ac.uk)
- 2ND SUPERVISOR: Isam Wadhaj

Subject Group: Cyber Security and System Engineering

Research Areas: Machine Learning, Internet of Things, Cyber Security

Project Title: Utilisation of Machine Learning for Intrusion Detection in IoT Networks

Project description:

This project would have a starting point of investigating the use of Machine Learning in Intrusion Detection in the various aspects of IoT networks. This may be Wireless Sensor Networks (and all subsets of therein), Industrial IoT, Vehicular Ad-hoc Networks (VANETS) or any other aspect of interest. You would be given the freedom to identify gaps in research in this area that you would work on, be that in how Machine Learning may be used to detect and mitigate attacks, or in identifying particular attack risks which require mitigation.

Candidate characteristics

Education:

A first-class honours degree, or a distinction at master level, or equivalent achievements in computer science.

Subject knowledge:

- Machine Learning
- Network Security
- Advanced Networking

Essential attributes:

- Ability to work and make progress independently.
- Good coding skills.
- Fundamental security knowledge.

Desirable attributes:

- Networking skills - IoT in particular.
- Simulation experience.