



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

### **PHD STUDENT PROJECT**

#### **Funding and application details**

**Funding status:** Self funded students only

**Application instructions:**

Detailed instructions are available at <https://blogs.napier.ac.uk/scebe-research/available-phd-student-projects/>

*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: Craig Thomson (Email: C.Thomson3@napier.ac.uk)
- 2<sup>ND</sup> SUPERVISOR: Isam Wadhaj

**Subject Group:** Cyber-security and system engineering

**Research Areas:** Computer Science - Cyber Security/Networks

**Project Title:** Identification of Security Flaws in Software Defined Networks

**Project description:**

Software Defined Networks (SDNs) are evolving rapidly. As such, the challenge exists of keeping up with this evolution at a security level, with threats continually identified at all of the Management, Control and Data Planes. The centralised nature of SDN controllers, in particular, raises the risk of a single point of failure with regard to attacks. However, the ability to assume control of network programming may pose an even greater threat. This project will involve the identification of gaps in current research into security aspects of SDNs and the implementation of solutions to these. The student will be given the freedom to work on the areas they themselves identify as important with support from their supervision team.

**References:**

- [1] Chica, J. C. C., Imbachi, J. C., & Vega, J. F. B. (2020). Security in SDN: A comprehensive survey. *Journal of Network and Computer Applications*, 159, 102595.

## **Candidate characteristics**

**Education:**

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

**Subject knowledge:**

- Software Defined Networks, security and forensics, advanced networking.

**Essential attributes:**

- Ability to work independently but also to take advice from more experienced academics and act upon it.

**Desirable attributes:**

- Solid research background.