



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://www.napier.ac.uk/research-and-innovation/research-degrees/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: Zakwan Jaroucheh (Email: Z.Jaroucheh@napier.ac.uk)
- 2ND SUPERVISOR: Baraq Ghaleb

Subject Group: Cyber-security and system engineering

Research Areas: Computer Science: Cyber Security, Other (DeFi, Blockchain, finance)

Project Title: Blockchain Technology and Decentralised Finance (DeFi) : The Bridge to the Future of Finance

Project description:

Blockchain and Distributed Ledger Technology (DLT) provide building blocks of the so-called “Internet of Value”, since they enable recording of interactions and transfer “value” referring to any record of ownership of asset - for example, money, securities, land titles – and ownership of specific information like identity, health information as well as other personal data. Blockchain enables communities, the decentralised Web, token economies, and global peer-to-peer payment. As an alternative to the restrictive, centralised, and centuries-old traditional financial system that much of the world is familiar with today, Decentralized Finance, also

known as "DeFi," is a developing open and worldwide phenomenon. DeFi gives everyone with a smartphone and an internet connection the chance to invest, borrow, lend, and trade their money according to their own terms. DeFi places people at the core of a peer-to-peer financial system operated on open-source blockchains like Ethereum, eliminating the need for banks to serve as intermediaries. DeFi technology has advanced significantly in recent years, although more research is still needed in this area.

We, at the "School of Computing, Engineering and Built Environment", Edinburgh Napier University, invite candidates from worldwide seeking to pursue research in Blockchain economics to join us in expanding our understanding of fintech, blockchain and DeFi. You will conduct interdisciplinary research that combines computer science and financial economics. You will have good exposure to a network of top-tier scholars as well as various industry partners. Here are some themes (not limited to) for PhD opportunities: 1) the skepticism of traditional banking institutions about forming partnerships with cryptocurrencies, 2) how blockchain technology revolutionized banking and improved the speed of cross-border payments in some countries, 3) the application of cryptocurrencies in blockchain-based crowdfunding, and 4) explore the role of regulation on algorithm design, especially with DeFi.

References:

Candidate characteristics

Education:

A second class honour degree or equivalent qualification in Computer science or closely related discipline.

Subject knowledge:

- Knowledge of blockchain and cryptography but this is not a requirement.

Essential attributes:

- Experience of fundamental computer science with strong programming skills.
- Competent in software engineering fundamentals and preferably cryptography/math.
- Good written and oral communication skills.
- Strong motivation.
- Good time management.

Desirable attributes: