Department	School of Computing
Supervisors	Dr Zakwan Jaroucheh, Dr Zhiyuan (Thomas) Tan
Project Title	Blockchain-based Ecosystem to Combat Fake News

PROJECT DESCRIPTION

Building blocks for the so-called "Internet of Value" are provided by blockchain and distributed ledger technology (DLT), which allow for the recording of interactions and the transfer of "value," which can refer to any record of ownership of an asset, such as money, securities, or land titles, as well as ownership of specific information, such as identity, health information, or other personal data. Blockchain technology is becoming more and more recognised as a solution for enhancing data traceability and transparency in smart societies and social systems. We clearly observe an evolution toward a decentralised paradigm in the social media space. Web3 proposal claims a vision of the Internet that can cut the intermediation of Big tech companies by completely decentralising the web. This new model of the Web enables the integration of metaverses, cryptocurrencies and tokens in many social media platforms. This gives the possibility both to reward users for their social actions and to define Non Fungible Tokens (NFTs), digital assets representing real-world objects like art, music, game items, videos so creating a new form of decentralised finance, the Social Finance (SocialFi).

On the other side, the proliferation of false information and disinformation has serious ramifications for society in terms of politics, society, ethics, and privacy. Therefore, it is morally necessary to stop the spread of false information. There is a lot more potential for blockchain and distributed ledger technologies than just financial payment systems. Blockchain eliminates the need for a reliable middleman since it establishes trust through encryption. Game-theoretical incentives and cryptography foster trust inside a decentralised system.

We, at the “School of Computing, Engineering and Built Environment”, Edinburgh Napier University, invite candidates from worldwide to join us in expanding our understanding of the potential of the blockchain and ledger technologies in creating a new trust-based approach/framework for resolving some of the aspects of this combat to help news creators getting their news backed by the community, and to help users to judge on the credibility and correctness of this news. You will have good exposure to a network of top-tier scholars as well as various industry partners. The School of Computing, Engineering and Built Environment is ideally located at the beautiful and central Merchiston campus in Edinburgh. You will be supported by the dedicated supervision team, formal challenging and interesting research training classes, world-class social environment with doctoral students and staff from all around the world.

Prospective applicants are encouraged to contact the Supervisor before submitting their applications. Applications should make it clear the project you are applying for and the name of the supervisor(s).

Academic qualifications
A first degree (at least a 2.1) ideally in computer science or closely related discipline with a good fundamental knowledge of blockchain and cryptography but this is not a requirement.

English language requirement
IELTS score must be at least 6.5 (with not less than 6.0 in each of the four components). Other, equivalent qualifications will be accepted. Full details of the University’s policy are available online.

Essential attributes:

- Experience of fundamental computer science with strong programming skills.
- Competent in software engineering fundamentals and preferably cryptography/math
- Knowledge of Click here to enter text.

- Good written and oral communication skills
- Strong motivation, with evidence of independent research skills relevant to the project
- Good time management

Desirable attributes:
Click here to enter text.

Indicative Bibliography	Z. Jaroucheh, M. Alissa and W. J. Buchanan, "Trust-based Ecosystem to Combat Fake News," 2020 IEEE International Conference on Blockchain and Cryptocurrency (ICBC), 2020, pp. 1-3, doi: 10.1109/ICBC48266.2020.9169435. "How google fights". PDF Iosifidis, Petros, and Nicholas Nicoli. "The battle to end fake news: A qualitative content analysis of Facebook announcements on how it combats disinformation." International Communication Gazette 82.1 (2020): 60-81. Fraga-Lamas P, Fernández-Caramés TM. Fake news, disinformation, and deepfakes: Leveraging distributed ledger technologies and blockchain to combat digital deception and counterfeit reality. IT Professional. 2020 Mar 27;22(2):53-9. Qayyum A, Qadir J, Janjua MU, Sher F. Using blockchain to rein in the new post-truth world and check the spread of fake news. IT Professional. 2019 Jul 15;21(4):16-24.
Enquiries	For informal enquiries about this PhD project, please contact Zakwan Jaroucheh (z.jaroucheh@napier.ac.uk)
Web page	https://www.napier.ac.uk/research-and-innovation/research-degrees/application-process