

Department	School of Computing
Supervisors	Dr Zeeshan Siddiqui
Project Title	An AI-based biometrics facial recognition continuous authentication framework and protocols for Shoulder Surfing Attacks
<p>PROJECT DESCRIPTION</p> <p>The project looks into the existing security vulnerabilities related to Shoulder Surfing attacks while using personal devices or smartphones. The project is going to examine existing biometric/non-biometric authentication frameworks and protocols to narrow the existing vulnerabilities and provide a secure and robust biometric authentication framework using continuous biometric authentication techniques and the use of machine learning/AI. The framework and biometric authentication protocols are going to be developed and implemented on various devices, such as SmartPhone, Tablets or Laptops. The authentication protocols going to be developed using cryptographic functions and deep learning techniques.</p> <p>Academic qualifications</p> <p>A first degree (at least a 2.1) ideally in Computer Science or Cyber Security with a good fundamental knowledge of Cryptography and Machine Learning.</p> <p>English language requirement</p> <p>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.</p> <p>Essential attributes:</p> <ul style="list-style-type: none"> • Experience of fundamental aspects of computer science, cryptography and machine learning • Competent in mathematical computations and authentication protocols • Knowledge of machine learning and deep learning • Good written and oral communication skills • Strong motivation, with evidence of independent research skills relevant to the project • Good time management <p>Desirable attributes:</p> <ul style="list-style-type: none"> - Knowledge and understanding of different computational algorithms and functions - Knowledge and understanding of using tools, such as ProVerif, Tamarin Prover and Scyther - Knowledge and understanding of using simulation tools and techniques, such as Matlab. 	
Indicative Bibliography	Click here to enter text.
Enquiries	For informal enquiries about this PhD project, please contact Dr Zeeshan Siddiqui (z.siddiqui@napier.ac.uk)
Web page	https://www.napier.ac.uk/research-and-innovation/research-degrees/application-process

