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Machine Learning and Semantic Analysis of In-game Chat for Cyber Bullying
Dr Shane Murnion, Prof William J Buchanan, Adrian Smales, and Dr Gordon Russell¹

Shane Murnion studied for his PhD in Geographical Information Systems at the Queen's University of Belfast and Keio University In Japan. Since then he has worked as a research fellow at the University of Birmingham and the University of Portsmouth. since 2000 he has been working as an IT consultant in Stockholm, Sweden and is currently working within Skandia AB in Sweden as a security specialist within application security. He completed his PhD in 1996.

Bill Buchanan is a Professor in the School of Computing at Edinburgh Napier University, and a Fellow of the BCS and the IET. He currently leads the Centre for Distributed Computing, Networks, and Security and The Cyber Academy, and works in the areas of security, Cloud Security, Web-based infrastructures, e-Crime, cryptography, triage, intrusion detection systems, digital forensics, mobile computing, agent-based systems, and security risk. Bill has one of the most extensive academic sites in the World, and is involved in many areas of novel research and teaching in computing. He has published over 27 academic books, and over 250 academic research papers, along with several awards for excellence in knowledge transfer, and for teaching. He was named as one of the Top 100 people for Technology in Scotland for 2012, 2013, 2014 and 2015. In Feb 2016, he was also included in the FutureScot "Top 50 Scottish Tech People Who Are Changing The World". He was awarded an OBE in the Queen's Birthday awards in June 2017.

Gordon Russell is currently a subject Group Leader in CSN (Computer Systems and Networks) which has a successful portfolio of undergraduate and postgraduate programmes and 15 staff. He is also Head of Infrastructure in the School, and has current research interests around Cryptography, Digital Forensics and Cyber Security. He has led the development of the GCHQ certified MSc Advanced Security and Digital Forensics, including introducing new modes of study. Along with this Gordon led the development of the MSc Advanced Security and Cybercrime, which provides distance learning opportunities for postgraduate studies. Gordon has also helped develop The Cyber Academy, which aims to disseminate cyber intelligence at both a national and international level, with current links in Europe to law enforcement, and is currently an external examiner at the University of Northumbria. Gordon has a strong international reputation, which has been built on an innovative teaching environment (LinuxZoo) and on the SQL Hacks book. His research current work investigates the usage of secret shares for storing information, and focuses on creating robust Cloud-based infrastructures which do not require encryption keys, and which can automatically rebuild themselves on a major disaster.

Adrian Smales has extensive industry experience, including Lexmark and with the Natural History Museum. His current work relates to using Big Data for the early signs of illness. A key objective of any health care system is not only to overcome illnesses as it happens, but to be able to predict the early on-set of illness. The proposed research will develop and extend the current study into Frailty encompassing not only clinical factors, but economic, environmental and social factors. Current estimates suggest that 7% of the population over 65 years of age exhibit signs of frailty. His research aims to create a new paradigm in understanding, predicting and controlling the major contributing factors of frailty. Current quantificational assessment "accumulation of deficit" encapsulates the severity as a single metric known as the Frailty

¹ Dr Shane Murnion and Adrian Smales, are researchers in The Cyber Academy, Edinburgh Napier University. Prof William J Buchanan and Dr Gordon Russell are academics The Cyber Academy, Edinburgh Napier University.

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