Big data and analytical tools for social scientific research

Pete Burnap

Abstract

This talk will present the research undertaken within the Social Data Science Lab at Cardiff University (socialdatalab.net), an interdisciplinary centre led by researchers in the schools of Social Sciences and Computer Science & Informatics. The first part of the talk will present COSMOS, an openly available tool to support the democratisation of 'big social data' and analytical tools for social scientific research. The second part will discuss our core computational social science research agenda - classification of online phenomena at scale and speed (for example, online production and dissemination of hate speech, suicidal communications, and malicious software). The final part of the talk will present future research challenges within the lab, including ongoing attempts to mine online signals of offline phenomena to support decision making at strategic level within government departments.

Biography

Dr Pete Burnap is a Lecturer at Cardiff University and Social Computing research priority area lead in the School of Computer Science & Informatics' Complex Systems research group. He has developed a reputation for data-driven, innovative, and interdisciplinary research that broadly contributes to the growing field of Data Science, working closely with the Cardiff School of Social Sciences and School of Engineering. He is an applied computer scientist with a principal focus on data and computational methods to improve understanding, operations and decision making outside of academia, while contributing to the academic fields of Social Computing, Web Science and Cybersecurity. These three fields are integrated within his research through the analysis and understanding of Web-enabled human and software behaviour, with a particular interest in emerging and future risks posed to civil society, business (economies) and governments. He achieves this using computational methods such as machine learning and statistical data modelling, and interaction and behaviour mining, opinion mining and sentiment analysis to derive key features of interest. His research outcomes, which include more than 50 academic articles – stemming from funded research projects worth over £4.6million, are organised and disseminated via the Social Data Science Lab, within which he is a director and the computational lead. The lab is currently supporting 5 post-doctoral researchers and 12 PhD students studying topics related to Risk, Safety & Human/Cybersecurity.