



Research Proposal Outline

Course: MSc Computer Science

Module: Research Methods and Professional Practice

Assignment: Research Proposal Outline

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Student ID: 126853

For the purpose of my research proposal presentation, I will aim to focus on my current proposed capstone project, *Crowdsourced Device Tracking: Security and Privacy Concerns* (Such as the Apple 'Find My' Network). I will be aiming to highlight both the significance and technological advancements that have made this possible, as well as the fundamental security and privacy risks surrounding these.

This topic is linked to a fairly recent technological release, therefore peer-reviewed academic literature is fairly limited. I intend to source the majority of my information from publications from security researchers, manufacturer blog posts/whitepapers, pre-print academic material and other miscellaneous resources. All such material will be scrutinised and compared with other documented research as well as personal knowledge of the topic at hand.

This research aims to highlight the fundamental security flaws surrounding crowd-sourced tracking, including its use for human pattern tracking, as well as near-realtime tracking of an individual or asset. During this research, I intend to conduct some basic testing to establish how reliable the Apple implementation of crowdsourced tracking is, based on the significant number of devices automatically enrolled into the network.

At this stage, although not fully explored, I plan to undertake a public survey to collect information on everyone's individual use cases for such technologies as well as identifying volumes of people that have actually been affected by the mis-use of such devices. As these crowdsourced tracking devices have current negative

connotations due to the 'stalking' potential, as described in the media, I intend to collect information in a non-identifiable manner that protects the identity of the individuals providing feedback.

Although no formal artefacts will be produced as a result of this work, I aim to produce a series of datasets/maps (Correlated between GPS and crowdsourced FMI reports) to demonstrate the effectiveness and deviation within an urbanised environment. Despite the fact that there is no further intention than awareness, I aim for these to be of such quality and reliability that these can be used within any potential publications or blog posts created at some point in the near future.

At this stage, a rough timeline has not been compiled for this project. I anticipate that the initial research will be conducted over a period of time not exceeding 8 weeks (Based on the length of the Dissertation module), followed by a substantive period of evaluation and write-up.