



COLLEGE of ENGINEERING AND PHYSICAL SCIENCES

SCHOOL OF COMPUTER SCIENCE

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Jason Ceci

*Out of Your Hands: Privacy Challenges when
Personal Devices are not in Users' Possession*

Chair: Dr. Fei Song

Advisor: Dr. Hassan Khan

Non-Advisory: Dr. David Flatla

Non-Advisory: Dr. Rozita Dara

Abstract:

The vast majority of North Americans own personal devices, such as smartphones, laptops and tablets. These devices store a wealth of personal and sensitive data. Much research has been conducted on protecting users' privacy while using personal devices. On the other hand, the privacy implications of common everyday cases where users hand off their personal devices to untrusted individuals have not been well explored. This thesis looks at two such cases: when users dispose of their old devices and when users get their devices repaired. Through a survey and semi-structured interviews, we determine how old devices are disposed of, how users sanitize (i.e., remove personal data with a low recovery probability) their devices prior to disposal, and what popular misconceptions lead to data leaks in disposed-of devices. We then investigate the privacy implications of device repair transactions by conducting a four-part study consisting of an observational study of service provider policies and procedures, a participant observation study where we drop off devices for a repair and analyze logs to measure privacy violations, a survey and semi-structured interview of personal device users on their experiences getting devices repaired.

In both cases, when users dispose of old devices or repair their devices, they are concerned for their privacy. However, this thesis concludes that the failure of several stakeholders has made it more difficult for the average user to protect their privacy during these events. Manufacturers' tools are misleading or missing, retailers and service providers provide vague policies and there is little evidence of any effective regulation protecting consumers during these transactions. This thesis provides controls, suggestions and actions for the different stakeholders and regulatory agencies to improve the state of privacy for consumers.