Joseph Hallett

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I am a PhD student at the University of Edinburgh researching how digital evidence can be used to improve the security for app stores. My research covers topics from information security, hacking and malware and logic and theorem proving. I have experience working as a Linux security engineer for the digital television markets where I helped write the Linux and Android specifications for conditional access vendors. My passion is for cutting edge security research and helping users and developers understand the issues and limitations of the security of their devices. Through my teaching I have helped show others just how cool security research is.

EDUCATION

- 2013 *Currently studying for* PhD at Edinburgh University School of Informatics

  Expected 2017.

  Working in the *AppGuarden* project developing an evidence based secure app store.

  Supervised by Dr. David Aspinall

  2012 MEng Computer Science at Bristol University (second class honors first division)

  Specialised in cryptography and security.

  Won the Infineon Prize for best final year project in Computer Architecture.

  Wrote thesis on a steganographic method to create architecture independent bytecode. Looked at the techniques to find valid instructions on multiple architectures, assessed their steganographic properties, and showed how a distinguisher could be written for programs using them.

EXPERIENCE

- 2014 Teaching Assistant at Edinburgh University

  Developed labs for new *Secure Programming* course.

  2012–2013 Security Engineer at MathEmbedded

  Developed Linux and Android security specifications for conditional access vendors.

  Worked to create a dynamic analysis tool for assessing a systems conformance to the security specifications. Involved writing a kernel module and rootkit to hook into the system under test, and SQL database to implement the tests

  Updating a set-top box system to a more modern kernel. Rewrote BSP to support new kernel; integrated Grsecurity patch set to harden system; helped port their main application from a chroot into an LXC container.

- 2009–2012 Unit Assistant at Bristol University

  Worked for the *Procedural Programming* and *Principles of Programming* units.

- 2008 Software Engineering intern at GE Oil and Gas

  Year in industry

  Worked on testing sub-sea software, development of coding standards for C++ & Visual Basic inside GE Oil and Gas as well as the development of automatic testing equipment for watchdog PLCs. Witnessed the testing of several hardware and software projects.

  I was awarded a 2:1 for my year of work and report on the design and implementation of automatic test equipment.

- 2007 Software Engineering intern at Renishaw

  Summer Placement Worked on soldering and testing PCBs as well as modelling the effects of temperature on equipment.

TECHNICAL SKILLS

EXPERIENCE WITH: Linux kernel development, Android Development, Linux system development, Grsecurity, OpenCL, OpenMP, MPI, Git, Radare2

PROGRAMMING LANGUAGES: C, C++, Assembly languages, Python, Ruby, SQL, Haskell, Java, Prolog, Lisp, Matlab, R and LaTeX