Michael K. Mabey

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EDUCATION

PhD Computer Science (Information Assurance) *May 2016*
Arizona State University | GPA 3.83 Tempe, AZ

M.S. Computer Science (Information Assurance) *Aug 2011*
Arizona State University | GPA 3.58 Tempe, AZ
Thesis: Collaborative Digital Forensics: Architecture, Mechanisms, and Case Study

B.S. Computer Science (Information Systems) *May 2009*
Utah State University | GPA 3.25 Logan, UT

EXPERIENCE

Research Assistant *Nov 2009 – Present*
Security Engineering for Future Computing (SEFCOM) Lab, ASU Tempe, AZ
Advisor: Prof. Gail-Joon Ahn *Sponsors*: Department of Energy and National Science Foundation

- Recipient of the Department of Defense Information Assurance Scholarship Program (IASP) for the 2012–2013, 2013–2014, and 2014–2015 school years.
- Developed a web email acquisition approach that reestablishes persistent cookie sessions stored by a browser, and automated the process using **Python** and **Selenium**.
- Designed and implemented the core components of a modular, highly scalable, collaboration-centric digital forensic framework built on the **OpenStack** cloud architecture. Functions of the components included distributed job scheduling, storage management, and concise evidence representation and transmission.
- Set up and maintained an **OpenVPN** installation for the SEFCOM lab.
- Researched methods for performing forensic acquisition on **Android** devices.
- Acted as a mentor for an undergraduate student that otherwise would not have pursued a master's degree and collaborated with him on the research for his thesis.

Teaching Assistant *Aug 2010 – Present*
Arizona State University Tempe, AZ

- Instructor for FSE 100 Introduction to Engineering: Fall 2011, Spring & Fall 2012, and Spring & Fall 2013.
- Spring 2014: Assistant to Dr. Ryan Meuth for FSE 100 Introduction to Engineering.
- Spring 2014: Assistant to Dr. Debra Calliss for CSE 423/424 Capstone I and CSE 485/486 Capstone II.
- Spring 2011: Assistant to Dr. Gail-Joon Ahn for CSE 467 Data & Information Security.
- Fall 2010: Assistant to Dr. Gail-Joon Ahn for CSE 465 Information Assurance.

Student Trainee *Jun 2013 – Aug 2013*
US Army Fort Meade, MD

- Summer internship in connection with DoD IASP scholarship.

Graduate Student Summer Intern *May 2011 – Jul 2011*
Sandia National Laboratories Albuquerque, NM

- Helped design a dynamic malware analysis framework built on **OpenStack**, allowing incident responders to define customizable analysis environments and use arbitrary analysis tools in triage or manual analysis mode.
- Wrote **Python** scripts to automate the setup process for using a SheevaPlug computer as a wireless intrusion detection agent running **Kismet**.

Graduate Student Recruitment Specialist/Webmaster *Jul 2006 – Aug 2009*
Electrical & Computer Engineering Department USU Logan, UT

- Primary responsibilities included maintaining and augmenting the department website using **PHP**, **MySQL**, and other basic web technologies like **CSS**, **JavaScript**, and an **SMTP** server.
- Replaced a **MS Access** database by porting the old data to a **MySQL** server and creating a set of **Python** programs with the **Dabo** framework that interfaced with the database.

PUBLICATIONS

[1] Wonkyu Han, Mike Mabey, Gail-Joon Ahn, and Tae Sung Kim. Simulation-Based Validation for Smart Grid Environments: Framework and Experimental Results. In Thouraya Bouabana-Tebibel and Stuart H. Rubin, editors, *Integration of Reusable Systems*, volume 263 of *Advances in Intelligent Systems and Computing*, pages 27–44. Springer International Publishing, 2014. ISBN 978-3-319-04716-4. DOI:10.1007/978-3-319-04717-1_2.

[2] Justin Paglierani, Mike Mabey, and Gail-Joon Ahn. Towards Comprehensive and Collaborative Forensics on Email Evidence. In *Collaborative Computing: Networking, Applications and Worksharing (Collaboratecom), 2013 9th International Conference Conference on*, pages 11–20. October 2013.

[3] Wonkyu Han, Mike Mabey, and Gail-Joon Ahn. Simulation-Based Validation for Smart Grid Environments. In *Information Reuse and Integration (IRI), 2013 IEEE 14th International Conference on*, pages 14–21. August 2013. DOI:10.1109/IRI.2013.6642448.

[4] Mike Mabey and Gail-Joon Ahn. Towards Collaborative Forensics. In Tansel zyer, Keivan Kianmehr, Mehmet Tan, and Jia Zeng, editors, *Information Reuse and Integration in Academia and Industry*, pages 237–260. Springer Vienna, 2013. ISBN 978-3-7091-1537-4. DOI:10.1007/978-3-7091-1538-1_12.

[5] Michael Kent Mabey. *Collaborative Digital Forensics: Architecture, Mechanisms, and Case Study*. Master's thesis, Arizona State University, August 2011.

[6] Mike Mabey and Gail-Joon Ahn. Towards Collaborative Forensics: Preliminary Framework. In *Information Reuse and Integration (IRI), 2011 IEEE International Conference on*, pages 94–99. August 2011. DOI: 10.1109/IRI.2011.6009527.

TECHNICAL STRENGTHS

Research Interests	Digital Forensics, Internet of Things, Cloud Computing
Programming Languages	Python, C/C++, HTML, CSS, Answer Set Programming
Protocols & APIs	JSON, XML, REST
Network Administration/Security	Wireshark, iptables
Operating Systems	Windows, Linux, Chrome OS
Databases	MySQL, SQLite

RELEVANT SCHOOL PROJECTS

- Implemented **Python** scripts that interpreted MBRs and boot sectors for FAT file systems.
- Wrote a program in **Python** to scan **C** and **C++** source files for commonly used but insecure function calls, which then suggested to the user more secure yet equivalent library functions.
- Created a web-based interactive learning module designed to teach basic principles of password strength and symmetrical encryption using **Python**, **JavaScript**, and **Ajax**. http://csilm.usu.edu/~securityninja/.

AWARDS AND ACTIVITIES

- DoD Information Assurance Scholarship Program (IASP) Recipient (3 years) 2012–2015
- Inducted into Eta Kappa Nu (HKN) Engineering Honors Society November 2010
- Team Leader — ASU team in the UCSB International CTF 2009, 2010
- Tallest Graduate Student at ASU (not an actual award)