

# Michael K. Mabey

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5606 S Hurricane Ct Unit E ◇ Tempe, AZ 85283



## EDUCATION

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### PhD Computer Science (Information Assurance)

Arizona State University | GPA 3.81

May 2016

Tempe, AZ

### M.S. Computer Science (Information Assurance)

Arizona State University | GPA 3.58

Aug 2011

Tempe, AZ

*Thesis:* Collaborative Digital Forensics: Architecture, Mechanisms, and Case Study

### B.S. Computer Science (Information Systems)

Utah State University | GPA 3.25

May 2009

Logan, UT

## EXPERIENCE

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### 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 and 2013–2014 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

June 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

Electrical & Computer Engineering Department USU

Jul 2006 – Aug 2009

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

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- [1] 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.
- [2] 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.
- [3] 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.
- [4] Michael Kent Mabey. *Collaborative Digital Forensics: Architecture, Mechanisms, and Case Study*. Master's thesis, Arizona State University, August 2011.
- [5] 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

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

## RELEVANT SCHOOL PROJECTS

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- 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**.
- Demonstrated a buffer overflow attack on a **C++** program using **gdb**.

## AWARDS AND ACTIVITIES

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- DoD Information Assurance Scholarship Program (IASP) Recipient (2 years) 2012–2014
- 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)