

# Michael K. Mabey

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## EDUCATION

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- PhD Computer Science — Information Assurance** (expected) May 2017  
Arizona State University Tempe, AZ  
*Research Topics:* Email forensics, Chrome OS forensics, Collaborative forensics
- M.S. Computer Science — Information Assurance** Aug 2011  
Arizona State University Tempe, AZ  
*Committee:* Gail-Joon Ahn (Chair), Stephen S. Yau, Dijiang Huang  
*Thesis:* Collaborative Digital Forensics: Architecture, Mechanisms, and Case Study
- B.S. Computer Science — Information Systems** May 2009  
Utah State University Logan, UT

## EXPERIENCE

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- Research Assistant** Nov 2009 – Present  
Security Engineering for Future Computing (SEFCOM) Lab, ASU Tempe, AZ  
*Lab Directors:* Gail-Joon Ahn, Adam Doupé  
*Sponsors:* Department of Energy, National Science Foundation
- Recipient of the Department of Defense Information Assurance Scholarship Program (IASP) from 2012–2016 (4 school years).
  - Researched forensic techniques for **Chrome OS/Chromium OS** by creating tools in **Python** and using **libvirt** to interface with a **KVM/QEMU** hypervisor. (In progress)
  - Developed a web email forensic 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.
- Teaching Assistant** Aug 2010 – Dec 2015  
Arizona State University Tempe, AZ
- CSE 465 Information Assurance with Dr. Gail-Joon Ahn: Fall 2010, Fall 2015.
  - CSE 469 Computer and Network Forensics with Dr. Gail-Joon Ahn: Spring 2015.
  - FSE 100 Introduction to Engineering with Dr. Ryan Meuth: Spring 2014.
  - CSE 423/424 Capstone I and CSE 485/486 Capstone II with Dr. Debra Calliss: Spring 2014.
  - CSE 467 Data & Information Security with Dr. Gail-Joon Ahn: Spring 2011.
- Teaching Assistant (Instructor of Record)** Aug 2011 – Dec 2014  
Arizona State University Tempe, AZ
- CSE 465 Information Assurance: Fall 2014.
  - FSE 100 Introduction to Engineering: Fall 2011 – Fall 2013 (5 semesters).
- Summer Intern** Jul 2015 – Sep 2015  
Arizona Cyber Threat Response Alliance (ACTRA) Phoenix, AZ
- Designed an operationalized workflow for AZ Infragard member organizations to share **threat intelligence** through a common **STIX/TAXII** platform.

**Student Trainee**  
US Army

*Jun 2013 – Aug 2013, Jun 2014 – Aug 2014*  
Fort Meade, MD

- Summer internships in connection with DoD IASP scholarship.

**Graduate Student Summer Intern**  
Sandia National Laboratories

*May 2011 – Jul 2011*  
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**.

## PUBLICATIONS

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- [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*, 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 Özyer, 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] **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 & QUALIFICATIONS

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<b>Research Interests</b>	Digital Forensics, Internet of Things, Cloud Computing
<b>Programming Languages</b>	Python, C/C++, HTML, CSS, $\LaTeX$
<b>Forensic Tools</b>	FTK, Sleuth Kit & Autopsy, dd, HxD, etc.
<b>Protocols &amp; APIs</b>	JSON, XML, REST, STIX/TAXII
<b>Network Administration/Security</b>	OpenVPN, Wireshark, ufw, Apache, lighttpd
<b>Operating Systems</b>	Windows, Linux, Chrome OS
<b>Databases</b>	MySQL, SQLite

## AWARDS AND ACTIVITIES

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- DoD Information Assurance Scholarship Program (IASP) Recipient (4 years) *2012 – 2016*
- Inducted into Eta Kappa Nu (HKN) Engineering Honors Society *Nov 2010*
- Team Leader — ASU team in the UCSB International CTF *2009, 2010, 2014, 2015*
- Eagle Scout, Boy Scouts of America *2002*
- Tallest Graduate Student at ASU (not an actual award)