

Huahong Tu (Raymond)

School of Computing, Informatics, and Decision Systems Engineering
Ira A. Fulton Schools of Engineering
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RESEARCH AREAS

- Cybersecurity and Systems Engineering
- Networking and Telecommunications
- Data and Information Sciences

ACADEMIC EXPERIENCE

Assistant Clinical Professor Jan 2018 – Present

- Capital One Machine Learning FIRE Research Program, University of Maryland, College Park
 - Educating computer science practices of machine learning, data analytics, and cybersecurity
 - Supervisors: Dr. Patrick Killion and Dr. Ian Page

Graduate Research Assistant May 2014 – Dec 2017

- SEFCOM Laboratory, Center for Cybersecurity and Digital Forensics, Arizona State University
 - Advanced cybersecurity and systems engineering research in telecommunications network
 - Advisors: Dr. Adam Doupé and Dr. Gail-Joon Ahn

Lab Instructor

- School of Computing, Informatics, and Decision Systems Engineering, Arizona State University
 - Introduction to Programming Languages Fall 2014
 - Principles of Programming in Java Fall 2013

Teaching Assistant

- School of Computing, Informatics, and Decision Systems Engineering, Arizona State University
 - Distributed Software Development Fall 2014
 - Database Management System Implementation Spring 2014
 - Software Integration Spring 2014
 - Information Assurance Fall 2013
 - Information Assurance and Security Spring 2013
 - Computer Networks Fall 2012
 - Computer Science Capstone Project Spring 2012

INDUSTRY EXPERIENCE

Software Engineer (Intern) Jun 2013 – Sep 2013

- Mobile Development Division, Eventbrite
 - Developed Eventbrite mobile app and implemented QA automation
 - Supervisor: Mr. Sean Coady

Product Manager Sep 2010 – May 2011

- Software Development Division, GRG Banking
 - Developed ATM software, recruited international talents, and analyzed industry product trends
 - Supervisor: Mr. Yingbin Han

EDUCATION

Doctor of Philosophy (Ph.D.) in Computer Science Dec 2017

- School of Computing, Informatics, and Decision Systems Engineering, Arizona State University
 - Dissertation: From Understanding Telephone Scams to Implementing Authenticated Caller ID Transmission
 - Notable Courses:
 - Computer Network Security
 - Applied Cryptography
 - Advanced Computer Network Security
 - Information Assurance and Security
 - Software Security
 - Software Integration and Engineering
 - Distributed Software Development
 - Artificial Intelligence
 - Statistical Learning and Pattern Recognition
 - Statistical Machine Learning
 - Data Mining
 - Social Media Mining
 - Web and Multimedia Databases
 - Database Management System Implementation

Bachelor of Science (B.S.) with Honors in Computer Science Jul 2010

- School of Computer Science, University of Nottingham
 - First Class Honors (GPA 4.0 equivalent)
 - Dissertation: A Machine Learning Scheme to Model and Predict Currency Foreign Exchange Rates

PUBLICATIONS

Journal Papers

- Huahong Tu, Adam Doupé, Ziming Zhao and Gail-Joon Ahn, “Toward Standardization of Authenticated Caller ID Transmission,” in IEEE Communications Standards Magazine, IEEE Communications Society, Sep 2017

Conference Papers with Proceedings

- Huahong Tu, Adam Doupé, Ziming Zhao and Gail-Joon Ahn, “Toward Authenticated Caller ID Transmission: The Need for a Standardized Authentication Scheme in Q.731.3 Calling Line Identification Presentation,” in Proceedings of the ITU Kaleidoscope 2016 - ICTs for a Sustainable World (ITU K-2016), ITU Telecommunication Standardization Sector (ITU-T), Bangkok, Thailand, Nov 2016 (**Best Paper Award**)
- Huahong Tu, Adam Doupé, Ziming Zhao and Gail-Joon Ahn, “SoK: Everyone Hates Robocalls: A Survey of Techniques against Telephony Spam,” in Proceedings of the 37th IEEE Symposium on Security and Privacy (SP), IEEE Computer Society, San Jose, California, USA, May 2016 (**#1 in cybersecurity conferences, 13.3% acceptance rate**)

PATENT APPLICATIONS

Huahong Tu, Adam Doupé, Gail-Joon Ahn and Ziming Zhao, “Systems and methods for authenticating caller identity and call request header information for outbound telephony communications,” filed for Non-Provisional patent, USPTO application number 62/308,105, Arizona Technology Enterprises (AzTE), Mar 2016

AWARDS & HONORS

- University Graduate Fellowship, Arizona State University Mar 2016
- For excellent research progress and strong academic work.
- Winners Award, Money20/20 Hackathon 2015 Oct 2015
- 625+ of the world’s most skilled developers
 - For creating BridgePay: Using Visa Direct to send money to anyone
- Golden Award, Codility Boron Challenge 2013 Oct 2013
- 7200+ challengers around the world
 - For delivering a flawless solution to one of Codility’s programming challenges

SERVICE & OUTREACH

Standards Contribution

- “Propose to initiate a new work item on architecture and signalling requirement of calling identification authentication” joint contribution with China Telecom, at ITU-T Study Group 11, ITU Telecommunication Standardization Sector (ITU-T), Oct 2017

Professional Talk

- “Toward Authenticated Caller ID Transmission” at ITU-T Study Group 11, ITU Telecommunication Standardization Sector (ITU-T), Feb 2017
- “Everyone hates Robocalls: Why is it so hard to stop?” at Open Web Application Security Project (OWASP) Phoenix Chapter, Oct 2016

Television

- “How you can stop those annoying robocalls” news and TV broadcast by Steve Sbraccia, CBS WNCN, Aug 2017
- “ASU team tests ‘green padlock’ solution to scam phone calls” news and TV broadcast by Derek Staahl, 3TV KTVK and CBS 5 KPHO, Jun 2017
- “Robocall ringing your cellphone? Here’s what not to do” news and TV broadcast by Ian Schwartz, 3TV KTVK and CBS 5 KPHO, Mar 2017

Radio

- “How the FCC, the telecom industry and computer programmers are working to fight robocalls” on AirTalk hosted by Larry Mantle, 89.3 KPCC (Southern California NPR), Oct 2016

Print

- “The FCC Robocall Proceeding: International Insularity” by Anthony Rutkowski, CircleID, Oct 2017
- “Junk call nightmare flooded woman with hundreds of bizarre phone calls a day” by Jon Bronkin, Ars Technica, Aug 2017
- “Fed up with rising robocalls, millions say ‘Do Not Call’ list doesn’t work and want relief” by Lily Leung, The Orange County Register, Oct 2016

REFERENCES

Dr. Adam Doupe
Assistant Professor of Computer Science
Associate Director of the Center for Cybersecurity and Digital Forensics
Co-Director of the Laboratory of Security Engineering for Future Computing
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