

Raymond H. Tu

MACHINE LEARNING · CYBERSECURITY · COMPUTER SCIENCE

ASSISTANT CLINICAL PROFESSOR AT THE UNIVERSITY OF MARYLAND

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Skills

- Coding** Major programming languages such as Python, Java/Scala, C/C++, JavaScript, MATLAB, and etc.
- Teaching** Computer science subjects in data science, computer security, programming, networking, and etc.
- Research** Innovations in machine learning, cybersecurity, networking, systems engineering, and etc.
- Leadership** Technical projects such as software development, machine learning, cyberattack mitigation, and etc.

Education

Ph.D. in Computer Science

2011 - 2017

Arizona State University

- Dissertation: From Understanding Telephone Scams to Implementing Authenticated Caller ID Transmission
- Notable Courses:
 - Software Security
 - Computer Network Security
 - Information Assurance & Security
 - Applied Cryptography
 - Artificial Intelligence
 - Statistical Machine Learning
 - Data Mining
 - Statistical Learning & Pattern Recognition
 - Software Integration & Engineering
 - Distributed Software Development
 - Web & Multimedia Databases
 - DB Management System Implementation

B.Sc. in Computer Science

2007 - 2010

University of Nottingham

- Dissertation: A Machine Learning Scheme to Model and Predict Currency Foreign Exchange Rates
- Graduated with First-Class Honours (GPA 4.0 equivalent)

Experience

Assistant Clinical Professor

Jan 2018 - Present

University of Maryland

- Faculty and research leader of *FIRE Capital One Machine Learning*, a *First-Year Innovation & Research* stream that provides a *Course-based Undergraduate Research Experience* for undergraduate students with authentic research and mentorship experience in *Machine Learning* and *Artificial Intelligence*.
- Led and oversaw a series of machine learning projects in applicable areas such as *Computer Vision*, *Natural Language Processing*, and *Data Analytics*.
- More info: fire.umd.edu/streams-COML.html

Research Assistant

May 2014 – Dec 2017

Arizona State University

- Took charge of a series of research projects in identity management and authentication for the security of telecommunications networks.
- Led to the publication of several top-tier computer science conference and journal papers.
- Led to the creation of a US non-provisional patent.

Teaching Assistant/Lab Instructor

Jan 2012 – Sep 2014

Arizona State University

- Helped to teach, grade and provide lab instructions for computer science courses such as *Software Development*, *Database Management*, *Computer Networks*, *Information Security*, *Programming*, etc.

Software Engineer (Intern)

Jun 2013 – Sep 2013

Eventbrite

- Developed software for Eventbrite mobile app and QA automation.

Product Engineer

Sep 2010 – May 2011

GRG Banking

- Led and oversaw ATM feature development, talent recruitment, and industry analysis.

Publications

CONFERENCE

Users Really Do Answer Telephone Scams

In the proceedings of the 28th USENIX Security Symposium (USENIX Security)
Huahong Tu, Adam Doupe, Ziming Zhao, Gail-Joon Ahn

Distinguished Paper Award

Aug 2019
Santa Clara, CA

Toward Authenticated Caller ID Transmission: The Need for a Standardized Authentication Scheme in Q.731.3 Calling Line Identification Presentation

In the proceedings of the ITU Kaleidoscope 2016 - ICTs for a Sustainable World
Huahong Tu, Adam Doupe, Ziming Zhao, Gail-Joon Ahn

Best Paper Award

Nov 2016
Bangkok, Thailand

SoK: Everyone Hates Robocalls: A Survey of Techniques against Telephone Spam

In the proceedings of the 37th IEEE Symposium on Security and Privacy
Huahong Tu, Adam Doupe, Ziming Zhao, Gail-Joon Ahn

May 2016
San Jose, CA

JOURNAL

Toward Standardization of Authenticated Caller ID Transmission

IEEE Communications Standards Magazine
Huahong Tu, Adam Doupe, Ziming Zhao, Gail-Joon Ahn

Sep 2017

PATENT

Systems and Methods for Authenticating Caller Identity and Call Request Header Information for Outbound Telephony Communications

US Patent App. 15/459,597
Huahong Tu, Adam Doupe, Ziming Zhao, Gail-Joon Ahn

Sep 2017

Funding

2019	Google Cloud Platform Credits, For teaching of FIRE Capital One Machine Learning in 2019	\$5,000
2018	Amazon Web Services Credits, For research of FIRE COML Summer Research Challenge in 2018	\$23,000
2018	Google Cloud Platform Credits, For teaching of FIRE Capital One Machine Learning in 2018	\$5,000

Honors & Awards

2019	Distinguished Paper Award, For a paper presented in proceedings of the USENIX Security Symposium	Santa Clara, CA
2016	University Graduate Fellowship, For excellent research progress and strong academic work.	Tempe, AZ
2016	Best Paper Award, For a paper presented in proceedings of the ITU Kaleidoscope Conference	Bangkok, Thailand
2015	Money20/20 Hackathon Finalist, For creating BridgePay: Using Visa Direct to send money to anyone	Las Vegas, NV
2013	Golden Award, For delivering a flawless solution to one of Codility's programming challenges	Online

Service & Outreach

2019	Opinions Writer, Robocalls are unstoppable—3 questions answered about why your phone won't quit ringing	The Conversation
2017	Standards Contributor, Proposal to initiate a new work item on calling identification authentication	ITU
2017	Presenter, Toward Authenticated Caller ID Transmission	ITU
2016	Presenter, Everyone hates Robocalls: Why is it so hard to stop?	OWASP Phoenix