Ryan Tsang

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EDUCATION

University of California, Davis – College of Engineering Present
PhD Student, ECE - Embedded System Security **GPA:** 3.96
University of California, Berkeley - School of Engineering December 2019
BS, Electrical Engineering and Computer Science & Engineering Physics (cumulative) **GPA** 3.79

RESEARCH EXPERIENCE

Graduate Student Researcher – Prof. Houman Homayoun, UC Davis 2020 - Present
- Researching Hardware and Firmware Security for the Embedded Systems and IoT Supply Chain through Simulation and Concolic Execution
- Exploring Machine Learning-Enabled Phishing Attacks
- Exploring Power Management IC Attacks via Firmware Modification

Undergraduate Researcher – Prof. Constance Chang-Hasnain, UC Berkeley 2018 – 2019
- Characterized Resolution in commercial Time of Flight Sensors + integrating in-house HCG VCSELs with commercial ToF sensor
- Worked in Nanofabrication Lab on Edge Emitting Laser fabrication

PUBLICATIONS

- *R. Tsang, D. Joseph, A. Asmita, S. Salehi, N. Carreon, P. Mohaptra, H. Homayoun. "FANDEMIC: Firmware Attack Construction and Deployment on Power Management IC and Impacts on IoT Applications". Network and Distributed Systems Security Symposium 2022 (Accepted)*

TEACHING EXPERIENCE

TA for ECE 170 – Computer Architecture Fall 2021
- Topics include Performance, Assembly, CPU Pipeline, Memory
- Content development – labs, homework, and notes

TA for ECE 172 – Embedded Systems Winter 2021
- Topics include C programming, I/O, Wired Communication Protocols

Undergraduate Course Staff for Elec. Eng. 16A Fall 2017 – Fall 2019
- **Discussion TA** Spring/Fall 2019: Bi-Weekly discussion sections and Office Hours, content development (midterm/final exam problems)
- **Lab TA** Fall 2018: Instructed students with weekly labs, circuit building, and introductory EE concepts
- **Lab Assistant** 2017-2018: Guided students in weekly labs

HONORS AND AWARDS

UC Berkeley Regent's and Chancellor's Scholar
- Most prestigious scholarship offered by UC Berkeley to entering Undergraduate Students

Eta Kappa Nu (IEEE EECS Honor Society) Member
- Membership extended only to top quarter of EECS students during Junior Year

Epsilon Pi (Engineering Physics Honor Society) Charter Member
- Charter member of UC Berkeley Eng. Physics Honor Society, reformed as of 2018

SKILLS

- Hardware: Basic PCB Design, Soldering, Standard Measurement Devices
- Microcontrollers: nRF52832/52840, Arduino Uno, CC3200
- Software: Python, C/C++, Java, Bash, Ghidra, EAGLE, Basic Binary Reverse Engineering