Skanda Koppula

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Massachusetts Institute of Technology
Major: Computer Science and Engineering, BSc, GPA: 4.7/5.0 *Sept. 2013 - Present*

Relevant courses: Computer and Network Security, Compilers, Digital Communications Systems, Computer Systems Engineering, Cryptography, Design and Analysis of Algorithms, Theory of Computation, Artificial Intelligence

Projects and Work Experience

Yahoo Membership and Paranoids, Algorithms Engineer Intern *June 2016 - Sep. 2016*

Web Security Infrastructure Intern *June 2015 - Aug. 2015*
Square

- Built service to capture and encrypt memory dump when the Square card-reader crashes
- Developed back-end services to decrypt, and symbolify binary contents to human-readable source error trace

Biometric Authentication System with Homomorphic Encryption *May 2015 - Present*
MIT Energy Efficient Circuits Group

- Developed protocols for privacy-preserving speaker authentication in the Pailler/BGN cryptosystems
- Constructed a software prototype of speaker authentication systems

Embedded Software for MIT Electric Vehicle Team *May 2014 - Present*
Member of MIT Electic Vehicle Team

- Developed module (with 32-bit ARM core and high-power relays) to read in status of car toggles and output control CAN messages to drive car
- Built software tools to eavesdrop on the CAN bus and verify that message bus contains messages that match our signaling specification

Power-Based Side-Channel Attack for AES Key Extraction on ATMega328P *Sept. 2015 - Nov. 2015*
6.858 Final Project - Computer Systems Security

- Built hardware setup to measure power consumption, implemented Correlation Power Analysis, and extracted an AES secret from Arduino flash memory
- Paper found at https://skoppula.github.io/pdfs/sidechannel-report.pdf

Skills

Web Systems: **Java Web Services/JBoss**, **Rails**, **RSpec**, **Flask**, **JavaScript**, **Node.js**
Embedded Systems: **C** and working proficiency in **x86 Assembly** and **Bluespec Verilog**.
Misc: **Python**, **bash scripting**, and **R**

Awards

Analog Devices Undergraduate Research and Innovation Scholar Award	2015
Third Place in Jane Street Collegiate Programmatic Trading Competition	2015

Other interests

- Project Euler and other fun online algorithmic challenges
- Blogging about coding, data analysis, and art at skoppula.github.io
- Volunteer teaching *Applied Algorithms*, *Biochemistry - Kitchen Edition*, and *SAT Math*