

# 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, Multicore Computer Architecture, Machine Learning, Computer Systems Engineering, Data Structures and Algorithms, Circuits, Theory of Computation

## Projects and WorkExperience

### Web Security Infrastructure Intern

*June 2015 - Aug. 2015*

*Square*

- Build 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*

*Researcher in the MIT Digital Circuits Group*

- Built privacy-preserving speaker authentication chip that is functional in a low-memory and low-power environment
- Made Bluespec Verilog hardware design to implement this algorithm
- Designed a test bench to check the accuracy and performance specs of the designed circuit

### Embedded Software for MIT Electric Vehicle Team

*May 2014 - Present*

*Member of the electrical engineering MIT EVT sub-team*

- Programmed 32-bit ARM core to read in status of car toggles and output control messages on CAN bus to drive car
- Built software tools to eavesdrop on the CAN bus and verify that message bus contains messages that match our signaling specification

### Authentication Scheme for Controller Area Networks

*March. 2015 - May. 2015*

*6.875 Final Project - Computer and Network Security*

- Designed low-cost authentication layer to verify messages on vehicular CAN networks
- Implemented system prototype and tests in Python, Java, and Processing. Formally proved security.

## Skills

Web Systems: **Java Web Services/JBoss, Rails, RSpec, JavaScript, React, 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](https://skoppula.github.io)
- Volunteer teaching *Applied Algorithms, Biochemistry - Kitchen Edition*, and *SAT Math*