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

Work and Research Experience

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

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

Speaker Recognition 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

A Public Key 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.

Structure-Based Statistical Modeling of Protein Interactions *May 2014 - Aug. 2014*
Research Project at the Keating Lab

- Published Python package to predict the stability of protein complexes
- Implemented five-term frequency-analysis procedure to more efficiently do stability prediction
- Optimized implementation to achieve $> 350\%$ speed-up by caching results, extending rate-limiting Python sections with C

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 amateur **R**

Awards

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

Other interests

- Building performance motorcycles for MIT Electric Vehicle (embedded systems/system architecture)
- Blogging about software, data analytics, and art at skoppula.github.io
- Volunteer teaching *Applied Algorithms*, *Biochemistry - Kitchen Edition*, and others