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 Android service and modified executed chip program 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
– Volunteer teaching *Applied Algorithms*, *Biochemistry - Kitchen Edition*, and *SAT Math*