Skanda Koppula

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Massachusetts Institute of Technology

Major: Computer Science and Engineering, BSc, GPA: 4.7/5.0　　　　　　　　*Class of 2017*

Relevant courses: Computer and Network Security, Computer Architecture, Machine Learning, Computer Systems Engineering, Advanced Algorithms

Work and Research Experience

Web Security Infrastructure Internship　　　　　　　　*June 2015 - Aug. 2015*
Square
  – Constructed client service to capture, encrypt, and transmit contents on the stack when a Square reader crashes

  – Developed back-end service to recieve, decrypt, and convert binary contents to human-readable program error trace

  – Currently building a Java-SQL interface that signature-protects all database records and warns users about inefficient record-fetch queries.

Voice Recognition System with Homomorphic Encryption　　　　*May 2015 - Present*
Research Fellowship at the MIT Digital Circuits Group
  – Designing homomorphic ML algorithm to do voice recognition that works under memory and computing limitations

  – Prototyping embedded system in Bluespec Verilog to implement this algorithm

  – Build a test bench to check the accuracy and performance specs of the designed circuit

Cache Coherency Protocol in Out-of-Order Processor　　　*Sept. 2014 - Dec. 2015*
6.175 Final Project - Cache Coherency in Multicore Architecture
  – Used Bluespec Verilog to implement a non-blocking cache hierarchy

  – Integrated non-blocking cache heirarchy into an implementation of a instruction-order-optimizing processor

Structure-Based Statistical Modeling of Protein Interactions　　　*May 2014 - Aug. 2014*
Research Project at the Keating Lab
  – Implemented five-term frequency-analysis procedure to predict the stability of protein complexes

  – Optimized implementation to achieve $> 350\%$ speed-up by caching results, extending rate-limiting Python sections with C

Skills

Web Systems: **Java**, **Ruby on Rails**, **JavaScript**.
Embedded Systems: **C** and working proficiency in **x86 Assembly** and **Bluespec Verilog**.
Misc: **Python**, **bash scripting**, and amateur **R**

Awards

Third Place in Jane Street Collegiate Programmatic Trading Competition	2015
First Place Undergrad Research Poster - NSF TeraGrid Supercomputing Conference	2013
Finalist in the Google International Science Fair	2012

Other interests

  – Blogging about software, data analytics, and art at skoppula.github.io
  – Volunteer teaching *Applied Algorithms*, *Biochemistry - Kitchen Edition*, and others