RAUNAQ KOCHAR

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EDUCATION

Masters in Computer and Information Sciences August, 2016 - Present

- Stony Brook University
- GPA: 3.67
- Courses: Operating Systems, Analysis of Algorithms, Parallel Programming, Computer Architecture, Computational Geometry.

Bachelor of Engineering in Computer Engineering July, 2012 - July 2016

- Pune Institute of Computer Technology
- GPA: 3.53

TECHNICAL SKILLS AND CERTIFICATIONS

- **Programming**
  C, C++, Python(Certified), SystemVerilog, R Programming(Certified), Javascript, MySQL, MongoDB
- **Tools and Technologies**
  REST APIs, Flask, AngularJS, KnockoutJS, Qt, Android, Machine Learning, MongoEngine, Selenium.
- **Certifications**
  Completed Python for Everybody Specialization, a course on Machine Learning and 5 courses as part of 10 course Data Science Specialization on Coursera.

INDUSTRY EXPERIENCE

Agnie Media Software
Software Development Intern February, 2016 - May 2016

- Collaborated on PivoxIO, a digital marketing assistant visualizing Google AdWords data parameters.
- Implemented querying and processing the data using Flask and Pandas, web scraping using Selenium and stored the data in MongoDB using MongoEngine.
- Implemented Pre Sales Dashboard for PivoxIO using AngularJS and Flask, using web scraping and MongoDB as the source of data. Designed the company's entire database to store data optimally using MongoDB.

PROJECTS

Write Only SeqORAM February, 2017 - Present

- Write Only Sequential Oblivious RAM which abstracts disk access patterns, making it independent of the algorithm, giving higher performance and equal security than randomized access.
- Working on a B+ tree on Linux Kernel 3.13.6 device mapper layer to optimize lookup for block of memory.
- Member of the Network Security and Applied Cryptography Lab under the guidance of Radu Sion.

Enhanced Cache Pirate February, 2017 - Present

- For empirical study of cache adaptivity and obliviousness of various algorithms.
- Contributing to a tool building on top of Cache Pirate, which in addition to stealing cache space also mimics unavailability of memory bandwidth, according to user defined parameters.

RISC64 Processor. February, 2017 - Present

- Designing and implementing RISC64 architecture with 5 stage pipeline.
- Using SystemVerilog for building the processor.

Per Process Overridden System Call Table November, 2016 - December, 2016

- Modified Linux kernel 4.6, giving each process a choice between some functions in the system call vector it wants to override based on a bitmap specified by it. The vectors could also be created on demand.
- Incorporated the per process system call table and built the modules for dynamic vector creation, setting and retrieving system call table information for each process.

Stackable Trace Enabled File System October, 2016 - November, 2016

- Modified the Linux Kernel 4.6 Virtual File System to incorporate the tracing and replaying of file operations performed by the user, storing and validating the operations as they were performed using checksum calculation.
- Contributed to ioctl modules to give the user the power to specify operations to be traced and replayed.

NFC Health Management October, 2015 - June, 2016

- RESTful Web Application using NFC tags as a key into centralized database of patients, coupled with on-the-go access to doctors to the patient data using an Android Application and MongoDB, GridFS in collaboration with Persistent Systems Pvt. Ltd.
- Contributed to the modular Web Application using Flask, Blueprints, Python and KnockoutJS.