Saksham Chitkara

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EDUCATION

CARNEGIE MELLON UNIVERSITY
Master of Science
Information Security
August 2017 - May 2019 | Pittsburgh, PA

RELEVANT COURSEWORK
- Research : Ubiquitous Computing
Advisor : Dr. Mayank Goel
- Distributed Systems
- Computer Systems - [TA Fall 2018]
- Storage Systems
- Computer Security
- Usable Privacy and Security
- Machine Learning
- Mobile and Pervasive Computing

SRM UNIVERSITY
Computer Science Engineering
Aug 2012-2016 | Chennai, India

SKILLS

Programming Languages
Java (JUnit) • Python • C
C++ • Matlab • Go • Assembly

Tools and Frameworks
Android • Django • Cassandra
Spanner • Redis • Memcached
Git • Vim • Shell Scripts • LaTeX

CONFERENCES

• ACM SOUPS 2018
- Poster - Usability of Crypto-currencies
• FTC PrivacyCon 2018
- Speaker on Smartphone privacy
• ACM Ubicomp 2017
- Why Does this App Need My Location?
- Acceptance (< 20%) | Top 5% paper
• CMU CyLab Conference 2017
- Poster - Protect My Privacy
• DARPA Brandeis 2017
- Topic: Privacy-Enhanced Android
• CMU Privacy Day 2017, 2018
- Poster Presentation - PrivacyProxy

FELLOWSHIPS

• Prabhu and Poonam Goel Fellowship , (1 of 34 students in MSIS 2017)
@ Carnegie Mellon University
• India's Best Brains 2014, 3 in 3700

EXPERIENCE

GOOGLE INC | Software Engineering Intern
Google Product Infrastructure | May 2018 - Aug 2018 | Mountain View, CA
- Implement a user-facing search API using Structured Spanner to lookup OAuth information by brand name and allow special operator search.
- Achieve a speed up from ~150 secs to ~90 secs by async execution of tasks.

CARNEGIE MELLON UNIVERSITY | Research Associate
School of Computer Science | Jan 2016 – June 2017 | Pittsburgh, PA
- Worked on Research papers (see below) and lead the CMU team to develop Privacy-Enhanced Android, a DARPA and Google funded project.

RESEARCH

WHY DOES THIS APP NEED MY LOCATION?
Ubicomp 2017 | First Author | Featured Paper | Acceptance Rate < 20%
- Designed and built a Context-Aware library based permission model for Android which tells the users the purpose of the private data accesses providing 25% better protection, 30% reduced decisions.
- `https://dl.acm.org/citation.cfm?doid=3139486.3132029`

PRIVACY PROXY | Mobile Systems | Network Security
- Leveraged Crowdsourcing and In Situ Traffic Analysis via a Proxy to detect and mitigate Information Leakage. The project will be Opensourced.
- `https://arxiv.org/pdf/1708.06384.pdf`

USABILITY OF BITCOIN | SOUPS 2018 Poster | First Author
- Conducted a Research study to figure out 'Why' people buy crypto currencies and what is their perception of crypto currencies.
- Some use cases involve using crypto currencies to buy drugs online.

PROJECTS

PROTECT MY PRIVACY | DARPA funded | 30,000+ downloads
- Built an end-to-end app, which collects, enforces and transmits the user's privacy decisions on other apps and third-party libraries (root permission).
- Implemented a Firewall which blocks Wifi and mobile data on a per app basis by interacting with the Android Kernel using iptables.

CRYPTOCURRENCY LEDGER | Distributed Systems
- Implemented a Distributed ledger to keep track of proof-of-work for cryptocurrencies. Built a miner to calculate the hash based on the difficulty.

DISTRIBUTED CONSENSUS - RAFT | Distributed Systems
- Implemented Raft to achieve Distributed Consensus. Implementation was robust, fault-tolerant in case of Network Partitions or multiple leaders.

DISTRIBUTED FILE SYSTEM | Distributed Systems
- Built a Distributed File System modeled on Facebook's Haystack paper to store and retrieve images. Used multiple stores with Cassandra and Redis.

FLASH TRANSLATION LAYER | Storage Systems
- Built a flash translation layer for an emulated SSD. Supports translation from LBA to physical addresses, garbage collection, and wear leveling.