Saksham Chitkara

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EDUCATION

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

COURSEWORK
Independent Study : Ubiquitous Computing
14-736 Distributed Systems - Infrastructure
08-736 Ubiquitous Computing
15-513 Introduction to Computer Systems
08-734 Usable Privacy and Security
18-730 Introduction to Computer Security
10-601 Introduction to Machine Learning

COURSEWORK - AUDITED
15-640 Distributed Systems
08-840 Green Computing
08-735 User-Focused Sensing Systems

SRM UNIVERSITY
Bachelors of Tech., Computer Science
Aug 2012-2016 | Chennai, India | GPA 9.01/10.0

SKILLS

Programming and Scripting Languages
Java • Python • C
C++ • Matlab • Go • Assembly • HTML/CSS

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

CONFERENCES

• FTC's PrivacyCon 2018
- Speaker on Smartphone Privacy
• ACM Ubicomp 2017
- Topic: Why Does this App Need My Location?
- Acceptance (< 20%) | Top 5% of all papers
• CMU CyLab Conference 2017
- Poster Presentation - ProtectMyPrivacy
• DARPA Brandeis 2017
- CyberSecurity Project Presentation
- Topic: Privacy-Enhanced Android
• CMU Privacy Day 2017, 2018
- Poster Presentation - PrivacyProxy

AWARDS

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

EXPERIENCE

GOOGLE INC | Software Engineering Intern
May 2018 - Aug 2018 | Mountain View, CA
- Determine 'spam' apps and extensions from Google Play Store and Google Chrome which request extraneous permissions.

CARNEGIE MELLON UNIVERSITY | Research Associate
Jan 2016 – June 2017 | Pittsburgh, PA
- Lead the team to develop Privacy-Enhanced Android, a DARPA funded project, on improving the privacy and security of Android.

RESEARCH

WHY DOES THIS APP NEED MY LOCATION? Ubicomp 2017
First Author | Acceptance Rate < 20% | Featured Paper (Top 5%)
- 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 | Systems + Network Security
- Leveraged Crowdsourcing and In Situ Traffic Analysis via a Proxy to detect and mitigate Information Leakage.
- `https://arxiv.org/pdf/1708.06384.pdf`

BLE SMART RING | Independent Study
- 3D printed a ring, which collects bio acoustic feedback using an Inertial Measurement Unit and a trackpoint and transmit it via BLE.
- Train a machine learning layer to do hand gesture recognition. Integrate gestures and trackpoint control to Hololens and Google VR.

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.
- Implemented a Firewall which blocks Wifi and mobile data on a per app basis by interacting with the Android Kernel.

OPTICAL HEART RATE MONITOR | Mobile Systems
- Monitor the heart rate by illuminating user's finger via camera flash and detecting changes in blood volume (PPG). Error Rate < 5%.

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

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

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