

# 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

## 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

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 to control 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%.

### PRIVACY-ENHANCED ANDROID | DARPA funded project

- Construct and enforce an all-encompassing purpose taxonomy for private data access on smartphones.

### DISTRIBUTED CONSENSUS - RAFT | Distributed Systems

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

### TINY UNIX SHELL | Systems

- Supports builtin commands, forking and handling multiple child processes running in foreground or background and I/O redirection.