

# Saksham Chitkara

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## EDUCATION

### CARNEGIE MELLON UNIVERSITY

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

### COURSEWORK

15-640 Distributed Systems

15-618 Parallel Computer Programming

08-736 Ubiquitous Computing

18-600 Foundations of Computer Systems

08-734 Usable Privacy and Security

18-730 Introduction to Computer Security

10-601 Introduction to Machine Learning

### COURSEWORK - AUDITED

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 Framework

Git • Vim • Shell Scripts •  $\LaTeX$

## CONFERENCES

### • FTC's PrivacyCon 2018

- Upcoming - 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

- Poster Presentation - PrivacyProxy

## AWARDS

• Prabhu and Poonam Pandey Fellowship,  
(1 of 34 students in MSIS 2017)

@ Information Networking Institute,  
Carnegie Mellon University

• India's Best Brains, Rank 3/3700

## 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>

## PROJECTS

### HAND GESTURE RECOGNITION | Wearable Systems

- 3D printed a custom ring, which collects bio acoustic feedback using a 6 Degree of Freedom Inertial Measurement Unit (IMU) and transmits it via BLE.
- Train a machine learning layer to do hand gesture recognition from the accelerometer data and integrate it to play tetris.

### PROTECT MY PRIVACY | App with 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.
- Implement hooks to provide 'Fake' user information to the apps and separate out the data by purpose of data accesses.
- Implemented a Firewall which blocks Wifi and mobile data on a per app basis by interacting with the Android Kernel.

### PRIVACY-ENHANCED ANDROID | DARPA funded project

- Constructed an all-encompassing purpose taxonomy for private data access on smartphones and separate out private data access on the basis of the data-usage purpose.
- Enforced data transmission to apps on the basis of these purposes.

### DYNAMIC MEMORY ALLOCATOR | Systems

- Implemented 'malloc' by requesting memory from OS. Keep track of free blocks via segregated lists and coalesce memory on 'free' call.

### TINY UNIX SHELL | Systems

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

## EXPERIENCE

### 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.

### DELL INC | Software Engineering Intern

Summer 2014 | Chennai, India

- Wrote scripts to perform security automation and testing.