Saksham Chitkara

sakshamchitkara12@cmu.edu | (612) 232-0913
http://www.contrib.andrew.cmu.edu/~schitkar/ | Github://saksham12 | LinkedIn://saksham-chitkara

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.

OPTICAL HEART RATE MONITOR | Mobile Systems
- Monitor the heart rate by illuminating a user's finger via a smartphone camera and detecting changes in blood volume during a cardiac cycle (photoplethysmography/PPG).
- The system's accuracy was within 5% of the actual heart rate.

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.

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.