HABIBA FARRUKH

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EDUCATION

Purdue University *Spring 2017 - Present*
- Ph.D., Computer Science *(Advisor:* He Wang*)*
- *Research Interests: Designing and building mobile systems involving various sensing and machine learning algorithms.*

LUMS School of Science & Engineering, Pakistan *August 2012 - May 2016*
- B.S Computer Science

Courses: Networks, Mobile Systems and Security, Information Security, Data Mining, Software Engineering, Databases, Computer Vision, Digital Image Processing, Applied Probability

WORK EXPERIENCE

Research Assistant - SIMBA Lab @ Purdue University *June 2018 - Present*
- Conducting research on building innovative and secure mobile sensing and computing systems using a combination of security, machine learning and vision algorithms.

Research Assistant - Network and Systems Group @ LUMS *Summer 2015*
- Redesigned switch buffer organization scheme for data centers using a software defined network to separate short and long flows, manage buffer sizes and handle weighted processor sharing.

Teaching Assistant - Purdue University *Spring 2017 - Fall 2019*
- Computer Networks; Data Structures and Algorithms.

LANGUAGES AND TECHNOLOGIES

- C++; Java; Python; MATLAB; JavaScript; Ruby; Rails; Scala
- Android; iOS; OpenCV; OpenPose; TensorFlow; Git

PROJECTS

Privacy Leakage in Mobile Devices Through Sensor Data *Fall 2019 - Present*
- Working on developing a framework for finding potential privacy risks for mobile devices due to malicious use of unsupervised sensor data.

3D Face Authentication System for Smartphones *Fall 2018*
- Designed and implemented a 3D face authentication system for smartphones capable of detecting 2D spoofing attacks via 3D face reconstruction with a 98.7% accuracy, using only the front camera.

Context Addressing for Human-to-Camera Communication *Fall 2017*
- Developed a real-time framework for human identification, leveraging the fusion of mobile sensor data and computer vision algorithms, without using face recognition.

User Guided Symbolic Execution and Visualization *Spring 2016*
- Implemented a program analysis tool for visualizing program execution tree with options to select paths and areas of the code to focus or ignore and provide models for external function calls.

PUBLICATIONS

- **Habiba Farrukh**, Reham Aburas, Siyuan Cao, He Wang, ***A 3D Face Authentication System for Smartphones with Front Camera***, Under submission to ***IEEE Transactions on Mobile Computing 2019***
- Siyuan Cao, **Habiba Farrukh**, He Wang, ***Towards Context Address for Camera-to-Human Communication***, ***IEEE InfoCom 2020***
- Siyuan Cao, **Habiba Farrukh**, He Wang, ***Video Demo: Enabling Public Cameras to Talk to the Public***, ***ACM MobiSys 2018***

AWARDS AND HONORS

- Graduated with Distinction *Bachelor of Science*
- Placed on LUMS Dean's Honor List *2014-2016*
- Received NSF Student Travel Grant from ACM MobiSys 2018 *2018*