HABIBA FARRUKH

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EDUCATION

Purdue University   *Spring 2017 - Present*

- Ph.D. candidate, Computer Science
- 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, Deep Learning, Data Mining, Software Engineering, Databases, Computer Vision, Digital Image Processing, Applied Probability

WORK EXPERIENCE

Applied Scientist Intern - Amazon Robotics   *Summer 2020*

- Conducted research and developed a machine-learning based automated package identification system for robotic arms in Amazon's fulfillment centers.

Research Assistant - SIMBA Lab @ Purdue University   *June 2018 - Fall 2020*

- 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; PyTorch; Git

PUBLICATIONS

- ***S^3: Side-channel attack on Stylus Pencils through Sensors***
  Habiba Farrukh, Tinghan Yang, Hanwen Xu, Yuxuan Yin, He Wang, Z. Berkay Celik
  ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT/UbiComp), 2021

- ***FaceRevelio: A Face Liveness Detection System for Smartphones with a Single Front Camera***
  Habiba Farrukh, Reham Aburas, Siyuan Cao, He Wang
  26th Annual International Conference on Mobile Computing and Networking (MobiCom), 2020

- ***Towards Context Address for Camera-to-Human Communication***
  Siyuan Cao, **Habiba Farrukh**, He Wang
  IEEE International Conference on Computer Communications (InfoCom), 2020

- ***Video Demo: Enabling Public Cameras to Talk to the Public***
  Siyuan Cao, **Habiba Farrukh**, He Wang
  18th ACM International Conference on Mobile Systems, Applications, and Services (MobiSys), 2018

PROJECTS

Privacy Leakage in Mobile Devices Through Sensor Data *Fall 2019 - Fall 2020*

- Working on developing a framework for finding potential privacy risks for mobile devices due to malicious use of unsupervised sensor data.

Face Liveness Detection 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 99.3% 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.

AWARDS AND HONORS

- Received NSF Student Travel Grant from ACM MobiSys 2018 *2018*
- Received scholarship to attend Grace Hopper Conference for Women in Computing *2018*
- Graduated with Distinction *Bachelor of Science*
- Placed on LUMS Dean's Honor List *2014-2016*