HABIBA FARRUKH

305 N University Street, West Lafayette, IN, 47907
(765) 479-9736 ◇ hfarrukh@purdue.edu

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*

- Conducting research on developing machine learning solutions for robotic systems in Amazon's fulfillment centers.

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; PyTorch; 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.

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 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

- ***Side-channel attack on Stylus Pencils***
  Habiba Farrukh, Tinghan Yang, Hanwen Xu, Yuxuan Yin, He Wang
  Under submission to ***UbiComp 2020***
- ***FaceRevelio: A Face Liveness Detection System for Smartphones with Front Camera***
  Habiba Farrukh, Reham Aburas, Siyuan Cao, He Wang
  26th Annual International Conference on Mobile Computing and Networking ***(ACM MobiCom '20)***
- ***Towards Context Address for Camera-to-Human Communication***
  Siyuan Cao, **Habiba Farrukh**, He Wang
  IEEE International Conference on Computer Communications ***IEEE InfoCom '20***
- ***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 ***ACM MobiSys '18***

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*