HABIBA FARRUKH

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EDUCATION

Purdue University **2017 - Present**

- Ph.D. in Computer Science
- Advisor: Professor Z. Berkay Celik
- Thesis: Leveraging Multi-modal Sensing for Improving Mobile Systems Security

LUMS School of Science & Engineering, Pakistan **2012 - 2016**

- B.S. in Computer Science

RESEARCH AND PROFESSIONAL EXPERIENCE

Research Assistant - Purdue University **2017 - 2022**

- Designed secure and usable camera-based liveness detection system for commodity mobile devices.
- Investigated sensor-based attacks on mobile devices.
- Introduced secure group pairing system for IoT devices.
- Investigated technology abuse and its impact on vulnerable populations.
- Disseminated research through academic conference papers.

Applied Scientist Intern - Amazon Robotics **2020**

- Conducted research on improving effectiveness of robotic package identification systems.
- Developed a deep-learning based automated package identification system for robotic arms in Amazon's fulfillment centers.

Research Assistant - Network and Systems Group, LUMS **2015**

- Redesigned switch buffer organization scheme for data centers.
- Developed software defined networks for separating data flows, managing buffer sizes and handling weighted processor sharing.

AWARDS AND HONORS

- Recipient of Bilsland Dissertation Fellowship Award (2022)
- Recipient of ACM CCS Student Travel Grant (2022)
- Recipient of NSF Student Travel Grant from ACM MobiSys (2018)
- Recipient of scholarship to attend Grace Hopper Conference for Women in Computing (2018)
- Graduated with Distinction (Bachelor of Science)
- Placement on Dean's Honor List (2014-2016)

PROFESSIONAL ACTIVITIES

Program Committee Member

- USENIX Security Symposium, 2022
- ACM S3 Workshop (co-located with MobiCom), 2021

Reviewer

- ACM Transactions on Sensor Networks (TOSN), 2022
- ACM Computing Surveys (CSUR), 2022

External Reviewer

- Network and Distributed System Security (NDSS), 2023
- USENIX Security Symposium, 2022
- Annual Computer Security Applications Conference (ACSAC), 2021
- Network and Distributed System Security (NDSS), 2021

TEACHING EXPERIENCE

Guest Lecturer

- CS590 IoT & CPS Security, Purdue University, Spring 2022

Teaching Assistant

- CS422 Computer Networks, Purdue University, Fall 2020
- CS422 Computer Networks, Purdue University, Fall 2019
- CS422 Computer Networks, Purdue University, Spring 2018
- CS251 Data Structures and Algorithms, Purdue University, Fall 2017
- CS251 Data Structures and Algorithms, Purdue University, Spring 2017

PUBLICATIONS

Conference Publications

C1 Muslum Ozgur Ozmen, Ruoyu Song, **Habiba Farrukh**, Z. Berkay Celik
Evasion Attacks on Smart Home Physical Event Verification and Defenses
Proceedings of the Network and Distributed System Security Symposium (NDSS), 2023

C2 Abdullah Imran, **Habiba Farrukh**, Muhammad Ibrahim, Z. Berkay Celik and Antonio Bianchi
SARA: Secure Android Remote Authorization
Proceedings of the USENIX Security Symposium (USENIX SEC), 2022

C3 Siddharth Divi, Yi-Shan Lin, **Habiba Farrukh** and Z. Berkay Celik
New Metrics to Evaluate the Performance and Fairness of Personalized Federated Learning
International Workshop on Federated Learning for User Privacy and Data Confidentiality (FL-ICML), 2021

C4 **Habiba Farrukh**, Tinghan Yang, Hanwen Xu, Yuxuan Yin, He Wang, Z. Berkay Celik
S^3: Side-channel attack on Stylus Pencils through Sensors
Proceedings of the ACM Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT/UbiComp), 2021

C5 **Habiba Farrukh**, Reham Aburas, Siyuan Cao, He Wang
FaceRevelio: A Face Liveness Detection System for Smartphones with a Single Front Camera
Proceedings of the ACM International Conference on Mobile Computing and Networking (MobiCom), 2020

C6 Siyuan Cao, **Habiba Farrukh**, He Wang
Towards Context Address for Camera-to-Human Communication
Proceedings of the IEEE International Conference on Computer Communications (InfoCom), 2020

C7 Siyuan Cao, **Habiba Farrukh**, He Wang
Demo: Enabling Public Cameras to Talk to the Public
Proceedings of the ACM International Conference on Mobile Systems, Applications, and Services (MobiSys), 2018

PATENTS

P1 Siyuan Cao, **Habiba Farrukh**, He Wang
Method of communicating between a client-server system and remote clients, US Patent 11,030,869

P2 **Habiba Farrukh**, Reham Mohammed, Siyuan Cao, He Wang
System architecture and method of authenticating a 3D object, US Patent App. 16819166

REFERENCES

Available upon request.