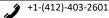# Pratik Musale

Pittsburgh, PA   prm73@pitt.edu   +1-(412)-403-2601   https://www.linkedin.com/in/pratikmusale/

Objective

To apply my background knowledge of usable privacy to design efficient software and IoT solutions for numerous domains where a user can effectively understand the sensing environments and their implications.

Education

Ph.D. in Computer Science (2019-Present)
University of Pittsburgh
Advisor: Professor Adam Lee

M.S. in Computer Science (Aug 2018)
Stony Brook University
Advisor: Professor Bong Jun Choi
Thesis: Lightweight Authentication for IoT Ecosystem

B.E. in Electronics and Telecommunication (Mar 2015)
University of Pune (Savitribai Phule Pune University)
First Class with Distinction

Appointments

Department of Computer Science, University of Pittsburgh
Graduate Teaching/Research Assistant (June 2020 – Present)
Ph.D. Fellowship (Aug 2019 – May 2020)

Department of Computer Science, Stony Brook University
Graduate Teaching/Research Assistant (August 2016 – May 2018)

Work Experience

Navigate Consulting (Jan 2019 – June 2019)
- To investigate the feasibility of single sign-on feasibility for the Industry IoT ecosystem.
- Designing prototypes for the deployment of IoT devices on field.

Spectra Televentures (2015 – 2016)
- Maintenance of Radio Towers for Nokia Network's customer Vodafone.
- Installation and commission of new 3G and 4G network.

Academic Projects

Gait Authentication (2016—2018)
- Identifies walking pattern of users using Random Forest Classifier.
- The system utilizes smaller number of features for profiling and eliminates the step cycle detection.

Accident Prevention System Cars (2014)
- The system continuously monitors to check for anomalies in driving pattern, media volume, and detects driver's alcohol level pre-driving.

- Uses the ultrasonic sensor to detect the spacing between cars.

Accident Location and Detection (2013)
- This project utilizes GPS and GSM technology to facilitate emergency messages on accident occurrence.
- The detection part was created using a pressure switch on a prototype.

Publication

[1] **Musale, Pratik**, and Adam J. Lee. "Trust TEE?: Exploring the Impact of Trusted Execution Environments on Smart Home Privacy Norms." *Proceedings on Privacy Enhancing Technologies* 3 (2023): 5-23.

[2] Duin Baek, **Pratik Musale**, and Jihoon Ryoo. 2019. Walk to Show Your Identity: Gait-based Seamless User Authentication Framework Using Deep Neural Network. In The 5th ACM Workshop on Wearable Systems and Applications (WearSys '19). Association for Computing Machinery, New York, NY, USA, 53–58. https://doi.org/10.1145/3325424.3329666

[3] **P. Musale**, D. Baek, N. Werellagama, S. S. Woo and B. J. Choi, "You Walk, We Authenticate: Lightweight Seamless Authentication Based on Gait in Wearable IoT Systems," in *IEEE Access*, vol. 7, pp. doi: 10.1109/ACCESS.2019.2906663

[4] **P. Musale**, D. Baek and B. J. Choi, "Lightweight gait based authentication technique for IoT using subconscious level activities," *2018 IEEE 4th World Forum on Internet of Things (WF-IoT)*, Singapore, 2018, pp. 564-567, doi: 10.1109/WF-IoT.2018.8355210.

Skills

Languages:	*Framework:*
Python, Java, JavaScript, C, MATLAB	Android Programming, Arduino
Software:	*Database:*
IBM SPSS	MySQL, NoSQL