

Soroush Shahi

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EDUCATION

PhD, Computer Science, *Northwestern University, Evanston, IL* 2024 (Expected)
Bachelor of Science, Computer Engineering, *University of Tehran, Tehran, Iran* 2020

EXPERIENCE

Research Intern - Apple Inc. 2023

- Submitted two research papers, built two demos, and filed one patent.
- Developed a prototype app used internally by a design team for rapid prototyping of hand gestures.
- Worked on machine-learning projects focusing on computer vision, sensing, and interaction technologies.

Research Assistant - Northwestern University 2021-Present

- Participating in applied research projects that include deep learning, data collection, and experiment design.
- Leading research to automate the detection of health-related human activities using wearable devices in real-world settings.

Instructor - Northwestern University 2022-Present

- Co-instructor and workshop designer to teach human activity recognition using wearable sensors.
- Teaching assistant and guest lecturer for CS 211, fundamentals of computer programming II.

iOS Developer - Remote 2016-2018

- Helped multiple startups with building iOS applications that offered services such as parking payments and photo album maker.

SKILLS

Deep Learning

- Proficient in deep learning fundamentals and optimization techniques.
- Experienced in implementing generative AI architectures such as Transformers.
- Familiar with few-shot learning techniques such as meta-learning, and metric-learning.
- Skilled in analyzing and interpreting data from wearable sensors using deep representations.

Data/Software Engineering

- Experienced in organizing sensor data and building data loaders using Python and PyTorch.
- Experienced in organization and annotation of unstructured large-scale dataset using technical approaches.
- Proficient in using Python for end-to-end deep learning algorithm development.
- Experienced with Swift and Objective-C for developing interactive experiences.

SELECTED PAPERS

Vision-Based Hand Gesture Customization from a Single Demonstration ACM UIST 2024
Soroush Shahi, Cori Park, Asaf Liberman, Oron Levy, Jun Gong, Richard Kang, Kareem Bedri, Gierad Laput

Moonwalk: Advancing Gait-Based User Recognition on Wearable Devices with Metric Learning *Under Review*
Asaf Liberman, Oron Levy, Soroush Shahi, Cori Park, Jun Gong, Richard Kang, Kareem Bedri, Gierad Laput

SmokeMon: Unobtrusive Extraction of Smoking Topography Using Wearable Energy-Efficient Thermal ACM IMMUT 2023
Rawan Alharbi, Soroush Shahi, Stefany Cruz, Sougata Sen, Bonnie Spring, Aggelos Katsaggelos, Josiah Hester, Nabil Alshurafa

Detecting Eating, and Social Presence with All Day Wearable RGB and IR ACM CHASE 2023
Soroush Shahi, Sougata Sen, Yang Gao, Amit Adate, Rawan Alharbi, Aggelos Katsaggelos, Josiah Hester, Nabil Alshurafa

SmartAct: Energy Efficient and Real-Time Hand-to-Mouth Gesture Detection Using Wearable RGB-T BSN 2022
Soroush Shahi, Mahdi Pedram, Glenn Fernandes, Nabil Alshurafa

Impacts of Image Obfuscation on Fine-grained Activity Recognition in Egocentric Video PerCom 2022
Soroush Shahi, Rawan Alharbi, Yang Gao, Sougata Sen, Aggelos Katsaggelos, Josiah Hester, Nabil Alshurafa

PATENTS

Vision-Based Hand Gesture Customization
Method and Device for Unobtrusive Extraction of Smoking Topography

MEDIA

The new 'necklace' could help cigarette smokers quit FOX 32 Chicago
Data-tracking necklace helps smokers kick habit WGN9