

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 papers, built two demos, and filed one patent.
- Engaged in machine-learning projects focusing on 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 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 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

- Familiar with deep learning fundamentals and optimization methods.
- Experienced in implementing advanced architectures such as Transformers.
- Familiar with few-shot learning techniques such as meta-learning, and metric-learning.

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 *Under Review (ACM UIST)*

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 (ACM UIST)*

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 IMWUT 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

REFERENCES

Nabil Alshurafa — Northwestern University
Aggelos Katsaggelos — Northwestern University
Gierad Laput — Apple Inc.