Sahar Sattari

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Education

University of British Columbia, Vancouver, Canada
Doctor of Philosophy in Biomedical Engineering 2023 - Present

University of British Columbia, Vancouver, Canada
Master of Applied Science in Biomedical Engineering 2021 – 2023

Sharif University of Technology, Tehran, Iran
Bachelor of Applied Science in Electrical Engineering 2016 - 2020

Research Experience

University of British Columbia

- **Real-Time Gait Characteristic Feedback for Parkinson's Patients to Prevent Freezing of Gait Episodes.** (2023-2024): Developing a real-time phone IMU data processing pipeline and an online notification system to provide haptic cues for Parkinson's patients.
- **Pre-processing of Mobile EEG Data in Real-Life Scenarios Using Blind Source Separation and Dimension Reduction Algorithms.** (2023-2024): Applying contrast-based analysis on mobile EEG data contaminated with high-amplitude motion artifacts.
- **Cluster-Based Analysis of Brain States in Athletes with Concussion.** (2023-2024): Applying k-means clustering algorithms on EEG topographical maps to extract brain microstates.
- **MASc Thesis: Brain-to-Brain Synchrony, Hyperscanning** (2021-2023): Applying causal-based analysis to brain data from two participants during social interaction.
- **MASc Thesis: Neurophysiological Indicators of Subconcussive Head Impacts in Contact Sports** (2021-2022): ERP-based EEG investigation of blink-related oscillations in contact-sport female athletes.
- **Designing a Platform for Self-Digital Auscultation at Home for COPD Patients (**Winter 2021): Building, testing, and verifying a low-fidelity prototype of the platform.

Sharif University of Technology

- **BSc Thesis: EEG and ECG Data Fusion for Emotion Recognition** (2019-2020): Applied weighted, ensemble, and feature fusion techniques on EEG and ECG data to increase the accuracy of automated emotion recognition.

Publications

- **Sattari S**, Damji S, McLeod J, Mirian MS, Wu LC, Virji-Babul N. Altered resting state EEG microstate dynamics in acute-phase pediatric mild traumatic brain injury. medRxiv. 2024 Oct 27:2024-10.
- Damji S, **Sattari S**, Zadravec K, Campbell KL, Brunet J, Virji-Babul N. Changes in EEG Microstate Dynamics and Cognition Post-Chemotherapy in People With Breast Cancer. Brain and Behavior. 2025 Mar;15(3):e70335.
- McLeod J, Chavan A, Lee H, **Sattari S**, Kurry S, Wake M, Janmohamed Z, Hodges NJ, Virji-Babul N. Distinct Effects of Brain Activation Using tDCS and Observational Practice: Implications for Motor Rehabilitation. Brain Sciences. 2024 Feb 13;14(2):175.
- **Sattari S**, Kenny R, Liu CC, Hajra SG, Dumont GA, Virji-Babul N. Blink-related EEG oscillations are neurophysiological indicators of subconcussive head impacts in female soccer players: a preliminary study. Frontiers in Human Neuroscience. 2023 Jul 19;17:1208498.

Teaching and Mentorship Experience

University of British Columbia

- Teaching Assistant for "Wearables" (Winter 2024)
- Teaching Assistant for "Introduction to Computation in Engineering Design" Lab (Winter 2023, 2024)

Taught C++ coding.
- Teaching Assistant for "Statistical Methods for Evaluating Medical Technologies" Lab (Winter 2023, 2024)
  Assisted with course project design and grading.
- Teaching Assistant for "Biomedical Instrumentation" Lab (2021-2023)
  Taught lab content, delivered presentations during lab sessions, and supervised a class of 20 students.
- Teaching Assistant for "Professional and Academic Development" Course (Winter 2022)
  Graded graduate students' proposals and 3-minute thesis presentations.
- Teaching Assistant for "Biomedical Engineering Design Project" (Winter 2022)
  Supervised students and assisted with their capstone projects.

Sharif University of Technology
- Teaching Assistant for "Biomedical Engineering Foundations" (Fall 2020)
  Taught course content and graded assignments.
- Teaching Assistant for "Biosensors" (Fall 2020)
  Taught course content and graded assignments.
- Teaching Assistant for "Computational Intelligence" (Spring 2020)
  Taught course content and graded assignments.
- Teaching Assistant for "Logic Circuits and Digital Systems" Lab (2018-2019)
  Designed the lab manual, taught lab content, delivered presentations during lab sessions, supervised 5 TAs and 40 students across 3 semesters, and designed the final project for students.

Work Experience

MyelinZ, United Kingdom
- Brain computer interface intern — Winter 2024
  Designed and implemented pipelines to analyze wearable sensor data collected during gameplay.

IPM Institute for Research in Fundamental Science, Iran
- Internship Project: Motion Artifact elimination in FNIRS signals — Summer 2019
  Simulated motion artefacts in Functional Near-Infrared Spectroscopy (FNIRS)

Sharif University of Technology, Iran
- Executive manager of Neuroscience Symposium — 2019
- Tutored High school students for preparation in national university entrance exam — 2017-2018

Awards

- SBME Graduate Support Initiative Entrance Award — 2023
- NSERC CREATE Care Anywhere scholarship — 2023
- Designing for People (DFP) scholarship, University of British Columbia — 2021-2022

Programming and Computing Skills

Proficient in Python, Git, SPSS, MATLAB

Languages

Persian (Native), English (Advanced) TOEFL iBT: 113 (R30/L30/S26/W27)