ARASH HAJISAFI

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University of Southern California Ph.D. in Computer Science	Los Angeles, USA Jan 2022 – Present
Amirkabir University of Technology	Tehran, Iran
B.Sc. in Computer Engineering, GPA: $19.28/20$ $(3.97/4)$	Sep $2017 - Sep \ 2021$
TECHNICAL SKILLS	
Programming Languages: Python, Java, JavaScript, C/C++, MATLAB	
Machine Learning and Data Analysis: PyTorch (including PyTorch Geometr scikit-learn, pandas, NumPy, Matplotlib, Seaborn, Plotly	ric and Geometric Temporal),
Web & Big Data Technologies: Flask, Streamlit, SQLAlchemy, Spark, Kafka	
Database & DevOps: SQL (RDBMS: MySQL, PostgreSQL), Docker, Linux, Git	, GitHub Actions
Cloud Computing: Google Cloud Platform (GCP)	
WORKING EXPERIENCE	

University of Southern California – InfoLab Los Angeles, USA Graduate Research Assistant Jan 2022 – Present **Projects:**

Wearables for Health (W4H) Toolkit (video demonstration: https://youtu.be/67a8kuMjSAU)

- Led the development of the W4H Integrated Toolkit, an **open-source** toolkit centralizing both real-time and offline wearable data from various sources (e.g., Garmin, Apple Watch, Fitbit).
- Designed a scalable system architecture separating data engineering, analysis, and visualization.
- The toolkit comprises the following open-sourced tools:
 - StreamSim: Real-time data streaming simulator using Python and Flask.
 - W4H ImportHub: Integrates stored datasets with Python, SQLAlchemy, and Streamlit.
 - **pyGarminAPI**: **Python** library for interacting with the Garmin API.
 - Integrated Analytics Dashboard: Core component for data extraction and analysis using Streamlit, pandas, Flask, Spark, and Kafka.
- Released the toolkit in two modes: a **Docker** image for local setup and a centralized version on USC clusters.

Accurate EEG Seizure Detection and Classification

- Designed and implemented a GNN-based model using PyTorch and PyTorch Geometric to dynamically model brain correlations using EEG signals.
- Utilized **pretrained LLMS** to enhance model performance, unveiling dynamic brain dependencies.

Learning Dynamic Graphs for Accurate Point-of-Interest Visit Forecasting

- Transformed the problem of predicting POI visits in the U.S. into a time-series forecasting task, leveraging multi-context correlations.
- Introduced BysGNN, a temporal graph neural network implemented using **PyTorch**.
- Utilized **pretrained LLMS** to optimize the model, achieving significant improvement in forecasting accuracy.

Mentoring and Training

• Trained and guided two undergraduate students on an academic project, enhancing their research capabilities and ensuring project success. Summer 2022

Gam Electronics Co.

Software R&D Intern

- Engineered automated business processes using **Python**, **Flask**, and **Selenium**, enhancing efficiency.
- Conducted unit and integration testing using **pytest** and **unittest** libraries in **Python**.
- Developed interactive web dashboards using **HTML**, **CSS**, and **JavaScript** for enhanced user experience.

Tehran. Iran July 2020 - Sep 2020

RESEARCH INTERESTS

Graph Neural Networks, Deep Learning, Spatio-Temporal Data Management and Forecasting

PUBLICATIONS

- 1. A. Hajisafi, H. Lin, et al., "Dynamic GNNs for Precise Seizure Detection and Classification from EEG Data," Accepted: PAKDD '24.
- 2. A. Hajisafi, M. D. Siampou, et al., "Wearables for Health (W4H) Toolkit for Acquisition, Storage, Analysis and Visualization of Data from Various Wearable Devices," Accepted: ICDE '24 Demo Track.
- 3. A. Hajisafi, H. Lin, et al., "Learning Dynamic Graphs from All Contextual Information for Accurate Pointof-Interest Visit Forecasting," Published: SIGSPATIAL '23, DOI:10.1145/3589132.3625567 (2023).
- 4. H. Nguyen, A. Hajisafi, et al., "An Evaluation of Time-Series Anomaly Detection in Computer Networks," Published: 2023 International Conference on Information Networking (ICOIN), pp. 104-109. IEEE, 2023.
- 5. S. Shaham, A. Hajisafi, et al., "Holistic Survey of Privacy and Fairness in Machine Learning," In-submission (ACM Computing Surveys), arXiv preprint arXiv:2307.15838 (2023).

AWARDS AND HONORS

\cdot Ranked Within the Top 5% of My Class in Amirkabir University of Technology	2021
· Recognized as a Scientific Talent by the National Elites Foundation of Iran	2020
· Received Full Tuition Waiver Scholarship from Amirkabir University of Technology	2017
· Achieved the 229 th Place Among 140,000 Applicants in the Iranian University Ent	rance Exam 2017
· Awarded the Certificate of Honor at the International Mathematical Kangaroo Cor	ntest 2016