ARASH HAJISAFI

RTH 323, 3650 McClintock Ave, Los Angeles, CA 90089, United States
hajisafi@usc.edu ◇ +1 (213) 539-8993 ◇ arashhs.github.io

RESEARCH INTERESTS

Graph Neural Networks, Spatio-Temporal Forecasting, Spatio-Temporal Data Management

EDUCATION

University of Southern California — Los Angeles, USA
Ph.D. in Computer Science — Jan 2022 – Present
Advisor: Prof. Cyrus Shahabi

Amirkabir University of Technology — Tehran, Iran
B.Sc. in Computer Engineering, GPA: 19.28/20 — Sep 2017 – Sep 2021
Advisor: Prof. Mohammad Mehdi Ebadzadeh

WORKING EXPERIENCE

University of Southern California – InfoLab — Los Angeles, USA
Graduate Research Assistant — Jan 2022 – Present
Projects:
Spectral-Temporal Graph Neural Network for Forecasting Visiting Patterns

- Modeled the problem of predicting the hourly number of visits to Points of Interest (POIs) across the U.S. as a multivariate time-series forecasting task.
- Developed a novel **Graph Neural Network-based** forecasting architecture to capture the POI relationships based on their associated feature and temporal correlations to build a dynamic graph. The proposed model captures temporal intra- and inter-series correlations using a two-step **attention** mechanism. The generated graph is then fed to a GNN layer to build new representations for POIs and conduct the forecasting based on the learned latent representations.

W4H: Wearables for Health and Disease Knowledge

- Building an open-source toolkit to enable health facilities efficiently store, analyze, and visualize real-time wearable data from heterogeneous sources (e.g., Fitbit, Garmin, Apple Watch) under a unified Geo-Referenced Multivariate Time-Series (GeoMTS) data format.
- Developed a layered system architecture to separate the data engineering, analysis, and visualization tasks.
- Utilized big data frameworks such as **Spark** and **Kafka** to meet the scalability and reliability requirements of the system.

Gam Electronics Co. — Tehran, Iran
Software R&D Intern — July 2020 – Sep 2020

- Designed and developed complex automated business processes.
- Took the high-level requirements and transformed them into functional specifications with detailed development plans.
- Prepared and executed User Acceptance Testing (UAT), developed improvement plans, and took accountability for fixing identified errors.
- Designed and developed web forms for the given specifications.

AWARDS AND HONORS

- 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**$^{\text{th}}$ Place Among 140,000 Applicants in the Iranian University Entrance Exam 2017
- Awarded the Certificate of Honor at the International Mathematical Kangaroo Contest 2016

TECHNICAL SKILLS

Programming Languages: Python, Java, JavaScript, C/C++, MATLAB

Libraries/Frameworks: Flask, PyTorch, pandas, NumPy, Matplotlib, Seaborn, Streamlit, SQLAlchemy

Programming Paradigms: Procedural, Object Oriented, Functional

Big Data Technologies: Spark, Kafka

Others: SQL (RDBMS: MySQL, PostgreSQL), Linux, Git, LaTeX