SEYEDEH BAHARAN KHATAMI

442-357-0699 ⋄ skhatami@ucsd.edu
Linkedin: http://linkedin.com/in/bah-kh

EDUCATION

University of California, San Diego September 2021 - Present
Ph.D. in Computer Science, Advisor: Dr. Babak Salimi

University of Tehran 2016 - 2021
B.S. in Computer Engineering, GPA: 18.00/20

RESEARCH INTERESTS

Machine Learning, Causal Inference, Graph Representation Learning, Explainable AI, Algorithmic Fairness

RESEARCH EXPERIENCE

Graduate Reasearch Assistant at UC San Diego September 2021 - present

- Causal Inference in Network Data Using Double Machine Learning and Graph Neural Networks

Data Analytics Lab at University of Tehran July 2020 - August 2021
Undergraduate Reasearch Assistant

- Thesis: Mining patterns of bias and diversity & inclusion in advisor-advisee relationship of top-ranked universities in north America (Finalist for the Best Undergraduate Project Award)
- Improved results of graph classification of BA/Config generative model in graph dataset using modularized GCN & Struc2Vec
- Implemented a crawler in Python for data gathering for a social network analysis project

Machine Learning Internship at HARA Summer 2019
Intern

- Music genre classification in a music platform for recommendation to customers, implemented CRNN and parallel CNN & RNN in Pytorch

SKILLS

Programming Languages & Technologies	Python, Java, C/C++, MySQL, HTML CSS, JavaScript, R, Verilog HDL
Libraries and Frameworks	Numpy, Pandas, Matplotlib, Seaborn Networkx, Scikit-learn, PyTorch beautiful soup, React, Django, Spring
Tools & Methodologies	Jupyter, LaTeX, Git, Docker Kubernetes, Agile, Maven
Operating Systems	Windows, Linux
Languages	Persian (native), English (proficient) Arabic (familiar), Spanish (elementary)

SELECTED PROJECTS

Indoor Positioning with Bluetooth Low-Energy (BLE) Beacons

- Finding the position of moving beacon using supervised machine learning algorithms and trilateration in Python with Raspberry Pi and real-time visualization in NodeJS

Applied Supervised and Unsupervised Models to Different Datasets

- Applied models like neural network, decision tree and random forest with boosting and bagging, logistic regression, support vector machine, k nearest neighbors, k-means, Lasso, and Ridge to different datasets like MNIST, heart disease patients, and house price prediction

Applied Naiive Bayes and Markov Models to Text Dataset

- Applied bag of words technique with Laplace for Naiive Bayes and Unigram & Bigram for Markov Models

Implementation of Basic Blocks of Neural Network

- Implementation of background operations like back-propagation & regularization using Python

XV6 Open Source Code Development

- Worked on a Unix-like operating system developed in MIT
- Developed system calls, CPU scheduling algorithms, synchronization mechanisms, memory management

Modeling & Implementation of AI Search Algorithms

- Modeling & implementation of informed & uninmorfed search algorithms such as A^*, BFS, and IDS to find solution of taking patients to a hospital in a given map with obstacles and with time limit in runtime

Routing Between Two Points of City

- Modeled problem as an operations research problem and using optimization techniques for solving it. Visual representation was provided with networkx

Count the Number of Words in a Large Corpus Using Map Reduced Technique in Distributed Systems

- Implemented GHS Minimum Spanning Tree algorithm using Kompics

Food Ordering Website

- Developed a full stack project incorporating a Java Spring back-end, React front-end and MySQL database, deployed on cloud servers using Docker and Kubernetes

Implementation of Dynamic Routing & Traceroute in Virtual IP network

- Implementation of Distance Vector algorithm for dynamic routing in dynamic network using Java

Multithreading and Synchronizing a Neural Network

- Implemented synchronization techniques to manage data flow between MLP layers in C++

Implementation of Compiler

- Designed and Implemented a full compiler for a java-like language Smoola and software modeling language Rebecca.
- Phases included lexical analysis & parsing, semantic analysis, type checking and code generation using Java & ANTLR

Design and Implementation of Digikala Relational Database

- Implemented a full database for a website similar to Amazon in SQL Server
- Designed the ER diagram, tables, schemas, views, required queries, triggers, and stored procedures based on website's use cases

TEACHING EXPERIENCE

Artificial Intelligence Spring 2020, Fall 2020
Head TA

Programming Languages and Compilers Fall 2019
Project Supervisor

Engineering Probability and Statistics Fall 2019, Spring 2020
Database Systems Fall 2019, Spring 2020, Fall 2020
Operating Systems Fall 2019, Spring 2020, Fall 2020

SELECTED COURSES

Mathematical & Machine Learning Courses

· Learning Algorithms(Ongoing), Engineering Probability and Statistics (A^+), Artificial Intelligence (A^+), Linear Algebra (A), Data Analytics (A^+), Probabilistic Learning & Reasoning (B^+), Operations Research (A^+), Signal Processing (A), Calculus (A^+)

Algorithmic Courses

· Algorithmic Graph Theory (A^+), Data Structures (A), Design and Analysis of Algorithms (A), Distributed Systems Algorithms (A)

Software & System Courses

· Database Systems (A^+), Theory of Formal Languages and Automata (A^+), Programming Languages & Compiler (A), Internet Engineering (A^+), Real-Time Embedded Systems (A^+), Computer Networks(A^+), Computer Networks Security (A^+)

Online Courses

· Machine Learning with Graphs, CS224W Stanford course instructed by Jure Leskovec
· CNNs for Visual Recognition, CS231n Stanford course instructed by Fei-Fei Li

WORKSHOPS

IEEE Data Science School Winter 2020

· A 100-hour long workshop with theoretical lectures & programming hands-on with a talk at the end of each day about the application of data science in a real academic or industry problem.

HONORS

Fellowship Award for Graduate Study at UC San Diego Fall 2021 - Spring 2022
Finalist for the Best Undergraduate Project Award Summer 2021
Ranked Among Top 15% in Terms of Total GPA in the Faculty List 2020
Fellowship Award from the University of Tehran Sponsors Foundation 2016 - 2020
Ranked 146 in Mathematical University Entrance Exam (Among Top 0.14%) 2016
Ranked 15 in English University Entrance Exam (Among Top 0.23%) 2016
Reached Semi-Final in the Iranian National Olympiad in Mathematics & Informatics 2015
Accepted in Entrance Exam of National Organization for Development of Exceptional Talents 2011

VOLUNTARY PARTICIPATIONS

IEEE Membership, IEEEXtreme, and IEEE Student Branch Events Fall 2017- Winter 2020
Member of Student Council for Standardizing Course Quality and Load Fall 2018
Executive Staff of International Geometry Olympiad Summer 2016