NEGIN RAHIMI

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RESEARCH INTERESTS

Optimization - Algorithms - Graph theory - Machine learning - Artificial Intelligence - Game theory - Statistics

EDUCATION

Bachelor in Computer Science, Amirkabir University Of Technology *2019 - Expected December 2023*
GPA:19.57/20(1st rank)
GPA(Last Semester): 20

Bachelor in Mathematics, Amirkabir University Of Technology *2019 - Expected December 2023*
GPA:19.31/20(1st rank)
GPA(Last 3 Semesters): 20

RESEARCH EXPERIENCE

Researcher Assistant Amirkabir University
Department of Mathematics and Computer Science *October 2023 - Present*
-Under the supervision of Dr.Mostafa Shamsi
-Research focused on faster submodular minimization

Researcher Assistant Sharif University
Department of Mathematics and Computer Science *December 2022 - August 2023*
-Under the supervision of Dr.Mojtaba Tefagh
-Research focused on betweenness centrality within graph networks.
-Developed a novel algorithm with the aid of greedy algorithms

EXPERIENCE

Teaching Assistant Sharif University
Department of Computer Engineering *September 2023 - Present*

- **Machine Learning** - Instructor: Dr.Seyed Abolfazl Motahari

- **Mathematics for Machine Learning** - Instructor: Dr.Amir Najafi

Teaching Assistant Amirkabir University
Department of Mathematics and Computer Science *September 2021 - Present*

- **Data Structures & Algorithms** - Instructor: Dr.Sajad Shirali-Shahreza
- **Design & Analysis of Algorithms** - Instructor: Dr.Sajad Shirali-Shahreza
- **Numerical Linear Algebra** - Instructor: Prof.Mehdi Dehghan
- **Probability1** - Instructor: Dr.Omid Naghshineh Arjmand
- **Foundation of Probability** - Instructor: Dr.Omid Naghshineh Arjmand
- **Introduction to Logic & Set Theory** - Instructor: Dr.Nazanin Roshandel Tavana
- **Foundation of Numerical Analysis** - Instructor: Dr.Farhad Fakhar-Izadi
- **Foundation of Numerical Analysis** - Instructor: Dr.Mostafa Shamsi

Head Teaching Assistant Amirkabir University
Department of Mathematics and Computer Science *February 2022 - Present*

- **Numerical Calculation** - Instructors: Dr.Fatemeh Shakeri - Dr.Farnaz Hooshmand - Dr.Ali Hatam - Dr.Mohammad Ali

- **Numerical Calculation** - Instructors: Dr.Mostafa Abbaszaddeh - Dr.Fatemeh Shakeri - Dr.Mostafa Shamsi - Dr. Farnaz Hooshmand - Dr.Ali Hatam

- **Numerical Calculation** - Instructors: Dr.Mostafa Abbaszaddeh - Dr.Fatemeh Shakeri - Dr.Farnaz Hooshmand - Dr.Ali Hatam- Dr.Mohammad Ali
- **Numerical Calculation** - Instructors: Dr.Mohammad Ali - Dr.Fatemeh Shakeri - Dr.Mohammad-Reza (Rafsanjani) Sadeghi

HONORS & AWARDS

Ranked 1st among 60 students *Present*
Mathematics Department, Amirkabir University

Ranked 1st among 70 students *Present*
Computer Science Department, Amirkabir University

Ranked 16th in Iranian Mathematics Olympiad for University Students (Sanjesh) *September 2022*

Ranked 11th among more than 3000 participants in the Iranian University Entrance Exam for master's degree in Mathematics *July 2022*

Ranked in the top 0.02% among more than 164000 participants in Iranian University Entrance Exam (Konkour) *July 2019*
Mathematics and Physics majors

NOTABLE COURSES

Convex Optimization (Graduate)
Audited

Online Learning(Graduate)
Audited

Machine Learning (Graduate)
Audited

Reinforcement Learning(Graduate)
Audited - In progress

Stochastic Process(20/20)

Chaos and Nonlinear Dynamics(Graduate)
Audited

Probability1(19.4/20)

Game Theory(20/20)

Linear Optimization(20/20)

Design & Analysis of Algorithms (17/20)

Data Mining(20)

Numerical Linear Algebra(20/20)

Artificial Intelligence(19.1/20)

Advanced programming(20/20)

Graph Theory(20/20)

Data Structures & Algorithms(20/20)

Numerical Analysis1(20/20)

SELECTED PROJECTS

Django-based Professor Appointment and Scheduling System - GitHub Amirkabir University
- Enables students to view, reserve, and request appointments.
- Implemented a notification system.
- Incorporated a barcode-based access system.

Multi-threaded Rust Grep Utility - GitHub Amirkabir University
- Developed a custom implementation of the grep utility.

Parallel Matrix Multiply HTTP Server - GitHub Amirkabir University
- Utilized a multi-process architecture with inter
- Process communication (IPC) mechanisms, semaphores, custom numbers of threads, and mutex locks using C++.

K-Cross Fold Validation and Decision Tree Analysis using RapidMiner - GitHub Amirkabir University
- Successfully completed a machine learning project utilizing RapidMiner.
- Implemented K-Cross Fold Validation and Decision Tree analysis techniques.

Comparative Analysis of Classification Models - [GitHub](#) Amirkabir University
- Utilized Python and adult income data for this project.
- Compared Decision Tree, SVM, and KNN models.

Enhancing Breast Cancer Prediction using MLP - [GitHub](#) Amirkabir University
- Assessed its performance through precision, recall, F1-score, and confusion matrix analysis.

ONLINE NOTABLE COURSES

Convex Optimization(Prof.Boyd)
Audited

Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization
Coursera

AI For Everyone
Coursera

Neural Networks and Deep Learning
Coursera

Supervised Machine Learning: Regression and Classification
Coursera

Intermediate Machine Learning
Kaggle

Intro to Machine Learning
Kaggle

SKILLS

Programming Languages: Python, MATLAB, C/C++, Rust

Libraries and Frameworks: TensorFlow, Scikit-Learn

Environments and Tools: Git

Miscellaneous: LaTeX, LINDO, RapidMiner

LANGUAGES

English: Proficient (TOEFL score expected soon)

Persian: Native

REFRENCES

Dr. Farnaz Hooshmand Khaligh : Associate Professor, Amirkabir University
f.hooshmand.khaligh@aut.ac.ir - [Google Scholar](#) - [CV](#)

Dr. Mostafa Shamsi : Associate Professor, Amirkabir University
m_shamsi@aut.ac.ir - [Google Scholar](#) - [CV](#)

Dr. Fatemeh Shakeri : Assistant Professor, Amirkabir University
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