AMIRHOSSEIN SOROUR

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EDUCATION

Concordia University
Master of Computer Science, The Immersive & Creative Technologies Lab (ICT lab)

2023 – 2025(Expected)
Montréal, Canada

- Supervisor: *Prof. Charalambos Poullis*

Amirkabir University of Technology (Tehran Polytechnic)
Bachelor of Science in Computer Engineering (Rank 2 among all Iranian Universities)

2018 – 2023
Tehran, Iran

- Thesis (**19.5**/20): ***Automatic Detection of Instrument and Scale for Persian Traditional Music***
- Supervisor: *Prof. Mohammad Mehdi Homayounpour*
- Cumulative Grade Average: **16.89**/20
- Selected Coursework: **18.62**/20
  - ✧ *Principles of Computational Intelligence(20/20)*
  - ✧ *Linear Optimization(20/20)*
  - ✧ *Math.(I)&(II) (20/20)*
  - ✧ *Research and Technical Presentation(19.5/20)*
  - ✧ *Advanced Programming(19/20)*
  - ✧ *Fundamentals of Computer Programming(17.75/20)*
  - ✧ *Differential Equations(17.8/20)*
  - ✧ *Signals and Systems(17.25/20)*
  - ✧ *Information Retrieval(17.15/20)*
  - ✧ *Algorithm Design(17/20)*

Shahid Dr.Alimohammadi High School
Diploma in Physics and Mathematics Discipline

2014 – 2017
Tehran, Iran

- Cumulative Grade Average: **19.76**/20

TEACHING EXPERIENCE

Teaching Assistant, *Computer Engineering Department, Amirkabir University of Technology*

- **Signals and Systems**, Instructor: *Prof. Mohammad Rahmati* — *Spring 2022*
- **Research and Technical Presentation**, Instructor: *Prof. Reza Safabakhsh* — *Spring 2022*
- **Applied Linear Algebra**, Instructor: *Assistant Prof. Mostafa Haghir Chehreghani* — *Spring 2021*
- **Applied Linear Algebra**, Instructor: *Assistant Prof. Ehsan Nazerfard* — *Fall 2020*
- **Discrete Mathematics**, Instructor: *Assistant Prof. Mostafa Haghir Chehreghani* — *Fall 2020*

WORK EXPERIENCE

MABNA Intelligent Technologies
Front-End Developer Intern

July 2022 – August 2022
Tehran, Iran

- Assisted in changing the software stack of a news aggregator website
- Migrated from a Next JS project to React JS
- Collaborated with Back-End developer to migrate from Flask framework to Django

Crouse (P.S.J) Co.
R & D Software Test Engineer Intern, Co-Op student

Feb. 2021 – June 2021
Tehran, Iran

- Worked with Powertrain ECU software team
- Developed a program with python for processing test script languages and extracting test data
- Analyzing and converting test scripts to automate software testing process
- Getting Familiar with software unit testing and compound testing and the automation process of software testing

Pars Technology Sadad
Customer Service Support Specialist

Sep. 2020 – Feb. 2021
Tehran, Iran

HONORS & REWARDS

- Eligible to Choose **Second Major** due to outstanding performance, Computer Engineering Department, Amirkabir University of Technology, Tehran, Iran, 2019.

- **Ranked top 0.4%** place among all applicants for the University Entrance Nationwide Exam (Approximately 140,000 applicants) in Mathematics and Physics Discipline, Iran, 2018.

- **Ranked top 0.7%** place among all applicants for the University Entrance Nationwide Exam (Approximately 120,000 applicants) in Foreign Languages (English), Iran, 2018.

Notable Projects

Solving Linear Programming Problems by Graphical Method | 🔗 *Code on GitHub*   May 2022
➤ Visualized how to solve linear programming problems by graphical method, using manim library in Python

Fuzzy Inference System for Tip Payment in Restaurant | 🔗 *Code on GitHub*   January 2022
➤ Developed a fuzzy system that determines the amount of tip in a restaurant given crisp inputs (quality of food and service), implemented in 3 distinct sections: fuzzification, inference and defuzzification

Persian News Search Engine | 🔗 *Code on GitHub*   Fall 2021
➤ Developed a document retrieval system using positional indexing, tf-idf method, classification, clustering and word embedding, implemented in 3 different phases

Implementation of Machine Learning Algorithms | 🔗 *Code on GitHub*   August 2021
➤ Implemented some of the machine learning algorithms: Linear Regression, Logistic Regression, Neural Network, K-means Clustering, Principal Component Analysis (PCA) using Octave programming language

Test Files Format Converter | 🔗 *Code on GitHub*   April 2021
➤ Implemented a format converter and syntax analyzer for text files with .ptu extension (kind of test files) and automating the process of extracting and exporting data of these files

Academic Course Projects

Data Mining | *Diabetes Diagnosis Classification*   Spring 2022
- Implemented an XGBoost classifier and steps including data preprocessing and hyperparameter tuning

Principles of Computational Intelligence | *Fruits Classifier*   Fall 2021
- Implemented a feed-forward fully connected neural network for classifying images of fruits

Programming Languages | *NUMEX Interpreter*   Fall 2021
- Implemented an interpreter for a simple programming language called NUMEX in Racket

Principles and Applications of Artificial Intelligence | *Poet Guesser*   Fall 2020
- Developed a program with Python to guess the poet of a given poem using NLP models

Principles and Applications of Artificial Intelligence | *Colored Cards Sorting*   Fall 2020
- Developed a program with Python to sort a bunch of colored cards using AI search algorithms: BFS, IDS, A*

Principles of Database Design | *Library Database*   Fall 2020
- Designed and implemented a relational database for managing a set of libraries

Software Engineering | *Online Music Player*   Spring 2020
- Designed an online music player software based on requirements and diagrams: Use Case, Sequence, Deployment, etc.

Advanced Programming | *Jpotify Music Player*   Spring 2019
- Designed and developed a music player similar to Spotify using Java GUI and socket programming

Fundamentals of Computer Programming | *Forgotten Future Game*   Fall 2018
- Developed a simple strategy game in C programming language as the final project of the course

Academic Course Reports

✦ **Sorour, A.,** Ardestani, M., Siavashpoor, M. and Poorghasem, H., "Convolutional Neural Networks" - presentation report for "Data Mining" course, Tehran, Iran, 2022. *(in Persian)*

✦ **Sorour, A.,** "Persian Document Retrieval System" - technical report for implementing a static search engine: algorithms, methods and reason of their usage, literature reviews for "Information Retrieval" course, Tehran, Iran, 2022. *(in Persian)*

✦ **Sorour, A.,** "Reinforcement Learning in Games: A Survey" - a literature review of recent studies for "Research & Technical Presentation" course, Tehran, Iran, 2021. *(in Persian)*

Certificates

Online Courses *(Coursera)*:

- ***Deep Learning Specialization***   DeepLearning.AI
  - *Neural Networks and Deep Learning* `(Grade:98.37%)`
  - *Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization* `(Grade:98.2%)`
  - *Structuring Machine Learning Projects* `(Grade:95.83%)`
  - *Convolutional Neural Networks* `(Grade:96.5%)`
  - *Sequence Models* `(Grade:98.5%)`

- ***TensorFlow Developer Professional Certificate***   DeepLearning.AI
  - *Introduction to TensorFlow for Artificial Intelligence, Machine Learning, Deep Learning* `(Grade:98.52%)`

- ***Mathematics for Machine Learning Specialization***   Imperial College London
  - *Mathematics for Machine Learning: PCA* `(Grade:100%)`

- *Machine Learning* `(Grade:97.25%)`   Stanford University
- *Introduction to Complex Analysis* `(Grade:89.36%)`   Wesleyan University
- *Introduction to Mathematical Thinking* `(Grade:96.43%)`   Stanford University

Skills

Technical Skills

- *Programming Languages and HDLs:* Python, Java, JavaScript, C, C++, VHDL, Verilog
- *Tools and Typesetting:* Git, Jira, Microsoft Word and Excel, LaTeX
- *Familiar with:* MySQL, HTML5, CSS3, React, Octave, MATLAB

Personal Skills: Willingness to learn and teach, Multitasking, Problem solving, Organized person

Language Skills: Persian (native), English (fluent), Arabic (familiar)

- **Course Completion Certificate at Advanced Level,** *English Department, Iran Language Institute (ILI)*   July 2017
- ➥ **TOEFL iBT: 88/120** (*Reading **24**/30, Listening **20**/30, Speaking **22**/30, Writing **22**/30*)   November 2022

Volunteer & Extracurricular Activities

➤ **Students' Scientific Chapter, Computer Engineering Department, Amirkabir University of Technology**

- Member of Executive committee of 6th Amirkabir Artificial Intelligence Competitions (AAIC)   **May 2022**
- Member of Executive committee of 3rd Data Mining Challenge (DMC@AAIC)   **Dec. 2021**
- Member of Executive committee of 19th Local ACM contest (AUT-ICPC)   **Nov. 2019**
- Member of Executive committee of 6th Amirkabir Programming League (APL)   **May 2019**

➤ **Students' Guild Council, Computer Engineering Department, Amirkabir University of Technology**

- Editor-in-chief of Pouyesh Student Magazine   **August 2021 – May 2022**
  (Students' Guild Council Publication)

- Member of Students' Guild Council   **June 2019 – June 2021**