

# AMIRHOSSEIN SOROUR

CE Department, Amirkabir University of Technology

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## RESEARCH INTERESTS

- Artificial Intelligence
- Machine Learning
- Optimization
- Data Mining
- Natural Language Processing
- Computer Vision

## EDUCATION

### Amirkabir University of Technology (Tehran Polytechnic)

2018 – 2022(Expected)

Bachelor of Science in *Computer Engineering* (Rank 2 among all Iranian Universities)

Tehran, Iran

- Cumulative Grade Average till now for:

Total 114 units : **16.64/20**

Last year courses : **17.44/20**

Selected coursework : **18.62/20**

*Fundamentals of Computer Programming(17.75/20), Advanced Programming(19/20), Differential Equations(17.8/20), Math.(I)&(II) (20/20), Linear Optimization(20/20), Algorithm Design(17/20), Signals and Systems(17.25/20), Information Retrieval(17.15/20), Research and Technical Presentation(19.5/20), Principles of Computational Intelligence(20/20)*

### Shahid Dr.Alimohammadi High School

2014 – 2017

Diploma in *Physics and Mathematics Discipline*

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 Feb. 2022 – July 2022
- **Research and Technical Presentation**, Instructor: Prof. Reza Safabakhsh Feb. 2022 – July 2022
- **Applied Linear Algebra**, Instructor: Assistant Prof. Mostafa Haghir Chehrehgani Feb. 2021 – July 2021
- **Applied Linear Algebra**, Instructor: Assistant Prof. Ehsan Nazerfard Sep. 2020 – Feb. 2021
- **Discrete Mathematics**, Instructor: Assistant Prof. Mostafa Haghir Chehrehgani Sep. 2020 – Feb. 2021

## WORK EXPERIENCE

### MABNA Intelligent Technologies

July 2022 – Sep. 2022

Front-End Developer Intern

Tehran, Iran

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

### Crouse (P.S.J) Co.

Feb. 2021 – June 2021

R & D Software Engineer Intern, *Co-Op student*

Tehran, Iran

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

## 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

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- 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 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

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- Data Mining** | *Diabetes Diagnosis Classification* Spring 2022
- Implemented a XGBoost Classifier and steps including data preprocessing and hyperparameters 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 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 of 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: UseCase, 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

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- ◆ 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

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### 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

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### Technical Skills

- *Programming Languages and HDLs:* Python, Java, JavaScript, C, C++, VHDL, Verilog
- *Tools and Typesetting:* Git, Jira, Microsoft Word and Excel, L<sup>A</sup>T<sub>E</sub>X
- *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:** Registered for the October 9, 2022 test.

## VOLUNTEER & EXTRACURRICULAR ACTIVITIES

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

- Member of Executive committee of 6<sup>th</sup> Amirkabir Artificial Intelligence Competitions May 2022  
(*Amirkabir Artificial Intelligence Competitions(AAIC)*)
- Member of Executive committee of 3<sup>th</sup> Data Mining Challenge ([DMC-AAIC](#)) Dec. 2021  
(*Amirkabir Artificial Intelligence Competitions(AAIC)*)
- Member of Executive committee of 19<sup>th</sup> Local ACM contest ([AUT-ICPC](#)) Nov. 2019
- Member of Executive committee of 6<sup>th</sup> 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

## REFERENCES

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- ✧ *Official certificates, documents and other references are available upon request.*