

# Seyyed Soroush Mortazavi Moghaddam

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## PERSONAL STATEMENT

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Motivated computer engineering student, seeking to conduct research and continue his studies in the field of **computer science**, with a passion for **artificial intelligence**. Especially interested in the applications of **machine/deep learning**.

## EDUCATION

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### Amirkabir University of Technology

Tehran, Iran

*Bachelor of Science in computer engineering*

*Sep. 2016 – Jan. 2022 (Expected)*

- Total GPA: **3.86/4** — Last two year GPA: **4/4**
- Thesis: Learning the game of Gobblet through reinforcement learning

### Shahid Beheshti High School of Exceptional Talents

Qayen, Iran

*Diploma of mathematics and physics*

*Sep. 2012 – Jun. 2016*

## EXPERIENCE

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### Computational Intelligence Teaching Assistant

*Supervisor: Prof. Ebadzadeh*

*(2 semesters) Sep. 2020 – Jun. 2021*

### Data Mining Teaching Assistant

*Supervisor: Dr. Nazerfard*

*Feb. 2021 – Jun. 2021*

### Computer Architecture Teaching Assistant

*Supervisor: Dr. Zarandi*

*Sep. 2019 – Jan. 2020*

### Operating Systems Teaching Assistant

*Supervisor: Dr. Zarandi*

*Feb. 2020 – Jun. 2020*

### Principles of Cloud Computing Teaching Assistant

*Supervisor: Dr. Javadi*

*Feb. 2021 – Jun. 2021*

*As a teaching assistant in the courses mentioned above:*

- Coordinated the teaching assistance team
- Designed and graded assignments, test-quizzes and course projects
- Created video tutorials for assignment solutions, course materials and extra resources
- Helped students with their questions and problems regarding the assignments and the projects

### Voluntary Research Assistant

Amirkabir University of Technology

*Under the supervision of Prof. Safabakhsh*

*Mar. 2020 – Jul. 2020*

- Implemented RNN models for stock market prediction
- Gathered and preprocessed Iran's stock data, then experimented many different models on them
- Learned about time series data, various layer types and how to work with TensorFlow, TensorBoard and Keras; also to efficiently design and train DNNs

### Research and Development Intern

Tehran, Iran

*At Sobhe - AI knowledge enterprise*

*Jul. 2020 – Oct. 2020*

- Gathered a Persian text corpus by developing a web crawler application
- Used the mentioned corpus to create Persian word embeddings
- Cooperated in the data gathering and the design of a stock market predictor model

## SKILLS

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**Programming Languages:** Python, MATLAB, Java, C, JavaScript, SQL-Server

**Frameworks and Libraries:** TensorFlow, PyTorch, Keras, TensorBoard, Numpy, Scikit-learn, Pandas, Matplotlib

**Developer Tools:** Git, Google Colab, Jupyter lab, VS Code, PyCharm, IntelliJ, Code::Blocks

**Languages:** English (Advanced) [TOEFL-ibt: **109**, R:30, L:27, S:27, W:25], Persian (Native)

## HONORS AND AWARDS

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**Ranked 19th/30K:** In the national university entrance exam among 30 thousand students (2016)

**Announced as an Outstanding Student:** in Amirkabir University of Technology

## TOP WORK AND SELECTED COURSE PROJECTS

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### Learning The Game of Gobblet (B.Sc Thesis) | *Python*

*under the supervision of Prof. Safabakhsh*

*Sep. 2020 – Sep. 2021*

- Implemented self-play with Monte-Carlo learning and used a combination of DNN value function, Monte-Carlo tree search and minimax search to act as close as possible to the optimum policy, i.e, the Nash equilibrium
- Implemented a user interface to play the game against the self-learned AI

### Artificial Intelligence Related Course Projects

*Sep. 2019 – Jun. 2021*

- Solved the Rubik's Cube by Implementing A\*, bi-directional and IDS algorithms | *python*
- Implemented MLP neural networks, evolutionary algorithms and fuzzy C-means clustering | *python*
- Implemented an image compressor (K-means) and a voice gender recognizer | *MATLAB*
- Solved CSP problems using AC-3 algorithm | *python*
- Implemented a text classification program using n-grams | *python*
- Implemented pairwise and multiple sequence alignment algorithms (Clustal, HMMs, PSSM, etc. ) | *python*

### Portal CAPTCHA Solver | *Python*

*Oct. 2019*

- Implemented an application to solve university's portal CAPTCHA and sign into one's account
- Gathered the training data by a script and trained a CNN model on them

### Java Projects

*Feb. 2017 – Jun. 2017*

- Developed a download manager application for Windows
- Developed a multiplayer tank game (similar to NormalTanks)

### E-Shop | *Python, JavaScript, HTML, CSS*

*Feb. 2021 – Jun. 2021*

- Full stack development of an E-Shop website

## OTHER ACTIVITIES

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### Online Courses

- Machine learning, by Andrew Ng: Coursera (100/100)
- Reinforcement learning, by David Silver: Audited

### Curriculum advisor

(Remote) Tehran, Iran

*Iliyasteel - educational group*

*Sep. 2020 - Jun. 2021*

- Guided and advised a group of high school students with their study plan and study method during the year

### Volunteer member

Tehran and Qayen, Iran

*Sepehr NGO - cultural enrichment and empowerment foundation*

*Jan. 2017 - Present*

*Abolmafakher NGO - student-operated foundation, for educational and cultural development*

*Jul. 2017 - Sep. 2018*

- Helped design and create graphical materials and advertisements (posters, banners, Brochures, id cards, etc.)
- Helped with the holding of several educational and cultural events, contests and meetings in Tehran and Qayen

## REFERENCES

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**Reza Safabakhsh, Professor:** [safa@aut.ac.ir](mailto:safa@aut.ac.ir)

**Mohammad Mehdi Ebadzadeh, Professor:** [ebadzadeh@aut.ac.ir](mailto:ebadzadeh@aut.ac.ir)

**Hamidreza Zarandi, Assistant professor:** [h\\_zarandi@aut.ac.ir](mailto:h_zarandi@aut.ac.ir)

**Ehsan Nazerfard, Assistant Professor:** [nazerfard@aut.ac.ir](mailto:nazerfard@aut.ac.ir)

**Seyyed Ahmad Javadi, Assistant Professor:** [sajavadi@aut.ac.ir](mailto:sajavadi@aut.ac.ir)