Soheil Hemmat

Date of Birth: *June 20th 2004* | ***Nationality:*** *Iran*
Email: soheil.hemmat.83@gmail.com | ***LinkedIn:*** https://www.linkedin.com/in/soheil-hemat

EDUCATION

B.Sc. in **Computer Science** 2022 – Present
Shahed University, Tehran, Iran
Ranked 1st in Cohort
GPA (Last 2 years): **18.92 / 20**
GPA (Overall): **18.2 / 20**
B.Sc. Thesis (Ongoing): "***Mostar index applied to some new graphs***" **Supervisor:** Dr. Ardeshir Dolati

RESEARCH INTERESTS

- **ML**
- **Theoretical Computer Science**
- **Computer Vision**
- **HCI**
- **Computation**
- **NLP**

SELECTED RESEARCH AND ACADEMIC PROJECTS

2025–2026 **B.Sc. Thesis — "*Mostar index applied to some new graphs*" (in progress) — Supervisor: Dr. Dolati**
- Investigating the Mostar index for kite, wheel, and inflated graphs; proving formulas
- Implementing computational validation in Python and releasing reproducible code and figures
- Writing the thesis in LaTeX, presenting findings, and refining proofs based on feedback

2025 **Research on AI Regulation in Europe — Supervisor: Dr. Hajiani (*Narrative review; submitted*)**
- Synthesized EU AI Act governance, GDPR interfaces, and FRIA obligations
- Extracted policy takeaways and insights relevant for AI regulation frameworks

2025 **AI Capstone — Recommender Systems (ALS, SVD, LightGCN), MovieLens-100K:**
- Implemented & benchmarked models in Python/PyTorch
- built evaluation pipeline (RMSE/MAE/P@5/R@5) and reproducible code

2025 **Designed and Implemented Weather Database:**
- Designed and implemented a weather database system using SQL and created an ERD
- Developed efficient queries for data retrieval and analysis of weather patterns

2024 **Research Collaboration on Support Vector Machines (SVM) — Supervisor: Dr. Seyed Javadi**
- Collaborated with a team on initial experiments and data analysis for SVM research

2024 **Two-Way Gödel Mapper (Python):**
- Encoded/decoded register-machine programs via Gödel numbering

2024 **Designed Client&Server Program by Suckt Programing:**
- Designed and implemented a Client-Server terminal messenger using TCP sockets
- Implemented asynchronous message handling with multithreading

2024 **Mini Compiler in C (Flex/Bison):**
- Built a lexer & LALR(1) parser with operator precedence; handled identifiers/numbers/loops

2024 **Estimating Functions using Genetic Algorithm (GA):**
- Developed a tree-based genetic algorithm in Python to approximate mathematical functions.
- Applied the model to predict house prices using MSE for evaluation

COMPUTER SKILL

Technical Skills: Python, C++, Spss, Latex, Graphiz, MySQL, HTML, CSS, Jupyter Notebook

General: Microsoft Office

Working Experience

Spring 2025 **Teaching Assistant, Operating Systems (**Supervised by Dr. Purbahman)
- Designed and evaluated Exercises
- Solved students' problems

Spring 2025 **Teaching Assistant, Digital Design** (Supervised by Dr. Farhadian)
- Conducted tutorial sessions
- Designed and evaluated exercises and circuits
- Assisted students with problem-solving

Spring 2025 **Substitute Lecturer, Compiler Course** (Supervised by Dr. Seyed Javadi)
- Delivered a one-time lecture on computational complexity and compiler design while the regular instructor was unavailable.
- Addressed student questions and clarified complex concepts

Fall 2024 **Head Teaching Assistant, Basis of Theory of Computation (**Supervised by Dr. AliAbdi)
- Managed the team
- Conducted tutorial sessions
- Assisted in grading midterm exams and problem-solving

Spring 2024 **Teaching Assistant, Abstract Matrix and Linear Algebra** (Supervised by Dr. Nasr)
- Conducted tutorial sessions
- Designed Exercises
- Assisted students with problem-solving

2023-Summer **Education Mentor** at **Hamrah Aval Academy**
- Mentored top-performing students in the 'Keyboard' program by MCI Academy.
- Provided guidance and support to help students improve problem-solving and learning,
- Designed and supervised exercises in Python, including algorithmic and ML problems

Patents

Precision Measurement Tool for Large O-Rings (>200 mm).
Conducted computational calibration for the accurate measurement of large, flexible O-rings, and for developing a tool that integrates mechanical design.
Nationally registered in Iran, Patent No. 112589 Spring 2025

Qualifies & Certificates

An Introduction to NLP, Amirkabir University of Technology (Credited) Fall 2023
Federated Learning 2.0, Amirkabir University of Technology (Credited) Fall 2023
Lectures on Modern Topics in Applied Mathematics, University of Tehran (Credited) Fall 2024
Media Skills and Information Warfare in Noisy Cyberspace, Shahed University (Credited) Fall 2025

Honors & Awards

2025 **Ranked among the top 5% of all B.Sc. students,** Shahed University
2025 **Recognized as an Exceptional Talent** for achieving **1st** rank in cohort, Shahed University
2024 **Ranked in ICPC Asia Tehran Regional Contest** (Algorithmic Competition) using Python**,** Shahed University
2024 **Ranked 2nd in the** Local Programming Championship using Python, Shahed University

Languages

Farsi: Native **English**: Fluent(IELTS in preparation, test on December 20th, 2025) **Arabic**: Basic **Japenease**: Basic

References

- **Dr. Hesam Sharifi**, Associate Professor
  School of Applied Mathematics, Shahed University
  Email: HSharifi@Shahed.ac.ir
- **Dr. Amin AliAbdi**, Assistant Professor
  School of Computer Science, Shahed University
  Email: A.aliabdi@shahed.ac.ir
- **Dr. Ardeshir Dolati**, Associate Professor
  School of Computer Science, Shahed University
  Email: Dolati@Shahed.ac.ir