Maedeh Dehghan

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EDUCATION

Shahid Behehshti University — **Tehran, Iran**
Bachelor of Science in Computer Engineering — *Sep. 2020 to Jun. 2024 [Expected]*

- **Cumulative GPA: 18.3/20 (3.82/4)**
- **GPA of last two years: 18.81/20 (3.91/4)**
- Ranked **3rd** among 120 undergraduate students.
- **Relevant Courses: GPA: 4/4**

Algorithms Design	Compiler Design	Machine Learning
Artificial Intelligence	Operating Systems	Statistics & Probabilities
Advanced Programming	Computer Architecture	Microprocessor & Assembly languages

RESEARCH INTERESTS

Compiler Design | **Computer Architecture** | **High-Performance Computing**
Cloud Computing | **Distributed Systems** | **Operating Systems**

TEACHING ASSISTANT EXPERIENCE

Operating Systems (x3) — **Spring 2023, Fall 2023, Spring 2024**
Shahid Beheshti University
- Designing programming assignments, giving quizzes, grading

Introduction to programming (x3) — **Since Fall 2021**
Shahid Beheshti University
- Designing programming assignments, grading, holding TA classes

Advanced programming (x4) — **Since Spring 2022**
Shahid Beheshti University
- Designing programming assignments, grading, holding TA classes

Algorithm Design — **Fall 2023**
Shahid Beheshti University
- Designing programming assignments, grading

Electrical Circuits (x2) — **Fall 2022, Spring 2023**
Shahid Beheshti University
- Designing programming assignments, grading, giving quizzes, holding TA classes

Artificial Intelligence — **Spring 2023**
Shahid Beheshti University
- Designing programming assignments, grading, holding TA classes

WORK EXPERIENCE

Platform Engineer — **Tehran, Iran**
Institute For Research In Fundamental Sciences (High-Performance Computing Center) — *Oct. 2023 to Present*
- Optimizing parallel computing applications for high-performance clusters, enhancing computational efficiency and tackling complex challenges.

Physics and Calculus Instructor — **Shiraz, Iran**
Farzanegan Highschool — *Sep. 2020 to Feb. 2023*

- Taught physics and calculus to high school students participating in the Physics Olympiad.
- Developed and implemented comprehensive lesson plans, covering various topics and problem-solving strategies.
- Prepared students for national and international physics competitions, focusing on conceptual understanding and advanced problem-solving techniques.

PROJECTS

- **Multi-Cycle RISC-V Processor**
  System Verilog, ModelSim
  - The project involves the design and implementation of a multi-cycle RISC-V processor.
  - The basic state machine used in the project is a Moore machine that takes [6:0]op as input and produces sets of outputs.
- **Doodle Jump in Assembly x86**
  Assembly x86, DOSBox
  - This project is an implementation of the popular mobile game "Doodle Jump" using **Assembly x86 programming language**.
  - The game will be developed to run on the DOS operating system, using the DOSBox emulator for compatibility.
- **Signal Generator**
  C, Keil, Proteus Design Suite
  - The purpose of this project is to implement the Signal Generator tool using the STM32 microcontroller.
  - The system consists of two modules. One module has the task of communicating with the user, and the other module has the task of generating waveforms. These two parts are connected to each other using SPI protocol.
- **Laptop Price Prediction**
  Python, Selenium, Pandas, Numpy, Sikit learn
  - This project is a machine learning project that predicts laptop prices based on torob.com.
  - Applied **K-Fold Cross Validation technique** to enhance model performance.

SKILLS

- **Programming Languages:** Python, Java, Golang, MATLAB, C/C++, HTML, CSS
- **Hardware Description Languages:** VHDL, System Verilog
- **Assembly Languages:** 8086, ARM, RISC-V
- **Tools and Libraries:** Git, Linux, Pandas, Numpy, sikit-learn, LLVM, CUDA, OpenMP, Docker, Kubernetes

HONORS AND AWARDS

- **Ranked 3rd** among 92 B.Sc students in the Computer Engineering department, Shahid Beheshti University, 2023.
- **Ranked 590th**National entrance exam for B.Sc Studies among 160,000 students, 2020.
- **Semifinalist** National Physics Olympiads, 2018 & 2019.

LANGUAGES

- **Persian:** Native
- **English:** IELTS: 7.5 (Speaking: 7.0, Reading: 8.5, Listening: 7.0, Writing: 6.5)
- **German:** Elementary (A2)

Publications