Arash Hajisafi | Curriculum Vitae

(+98) 912 846 8256 • hajisafiarash@gmail.com • hajisafi.com
arashhs • arash-hajisafi

Education

Amirkabir University of Technology **Tehran, Iran**
Bachelor of Science, Computer Engineering *September 2017 – Present*
CGPA: 19.07 / 20 (3.97/4)
Advisor: Prof. Mehdi Rasti

Related Coursework:

- Principles of Computer & Programming: 20
- Advanced Programming: 19.25
- Software Engineering (I): 20
- Operating Systems: 19.95
- Engineering Statistics: 20
- Applied Linear Algebra: 19.26
- Theory of Machines and Languages: 19.75
- Microprocessor and Assembly Language: 20

Khaje Nasir High School **Tehran, Iran**
High School Diploma, Mathematics and Physics *2013 – 2017*
GPA: 19.89 / 20

Research Interests

- Software Engineering
  - Specification, Verification and Validation of Software Systems
  - Developing Novel Techniques and Tools for Improving Software Reliability
  - Recommender Systems for Software Developers
- Machine Learning
  - Deep Learning
  - Reinforcement Learning
  - Natural Language Processing
- Operating Systems
- Programming Languages
- Statistics and Data Science

Awards and Honors

2020: Currently Ranked Within the Top 5% of My Class in Computer Engineering Department with a CGPA of 19.07 (out of 20), Amirkabir University of Technology

2017: Full Tuition Waiver Scholarship from Amirkabir University of Technology

2017: Achieved the Top 0.2% Place Among All Applicants in the Iranian University Entrance Exam (nearly 140000 applicants)

2016: Graduated as the Valedictorian of My High School with a GPA of 19.89 (out of 20)

2016: Awarded the Certificate of Honor at The International Mathematical Kangaroo Contest

Experience

Research

Design and Analysis of a Secure Smart Card Based Healthcare System
Research and Technical Presentation Course *Spring 2020*

- The research contains reviewing the architecture of smart cards and security threats using them in an Electronic Healthcare System. A functional system architecture has been proposed to address these security threats which specifies a smart-card-based authentication method. The research has been done for my Research and Technical Presentation course (including both Written and Oral Presentations).

Industry

Gam Electronics Co. **Tehran, Iran**
Software R&D Intern *July 2020 – Present*

- Designing and building automated business processes
- Participating in the development of complex business processes
- Taking the high-level requirements and transforming them into functional specifications with detailed development plans
- Preparing and executing User Acceptance Testing (UAT) and developing improvement plans as well as taking accountability in fixing identified errors
- Creating Web Forms for clients

Technical and Personal Skills

Programming Languages: Proficient in

- C, Arduino
- ARM Assembly
- VHDL
- Java (**inc.** Spring, Hibernate and Maven)
- Python (**inc.** NumPy and SciPy)

Web Application Development

- HTML/CSS (Intermediate)
- Bootstrap (Familiar)
- JavaScript (Familiar)

Kernel Programming Experience

- XV6
- FreeRTOS

Miscellaneous

- MySQL (Advanced)
- XML (Intermediate)
- Git (Intermediate)
- Flex and Bison (Advanced)
- LaTeX(Intermediate)
- Linux (Intermediate)
- OOP (Advanced)

Also reasonable skill in

- MATLAB (Intermediate)
- C++ (Intermediate),
- Verilog (Intermediate)
- Lisp, Racket (Familiar)
- Standard ML (Familiar)

Industry Software Skills

- Vivado Design Suite (Advanced)
- Proteus Design Suite (Intermediate)
- PSpice (Intermediate)
- Camunda BPM (Intermediate)
- MS Word, MS Excel and MS Powerpoint (Advanced)

Soft Skills

- Hard-working
- Teamwork
- Accountability
- Time management
- Analytical thinking

Language Proficiency

- **English** (fluent)
  - IELTS score: To be taken by September 16 (Expected overall bandscore: 7)
  - GRE score: To be taken by the end of October
- **Persian** (mother tongue)

Projects

- **JTanks Game**
  - A 2D tank game made in java for the final project of my Advanced Programming course written at the end of my freshman year at university
  - Both multiplayer and single-player modes are implemented as well as a text-based map editor
  - The project is based on Buffer-Strategy implementation and uses multi-threading techniques
- **Restaurant Table Booking and Food Reservation Web Application**
  - A Java Spring MVC and Hibernate project used for the implementation of my Software Engineering (I) project for table booking and food reservation in a restaurant
  - Based on a Github repository which we applied different software evolution and maintenance techniques on to adapt the project with newer versions of Java and Spring framework and add many new functionalities such as food reservation and a better implementation for table booking and time management as well as fixing several bugs.
  - Re-wrote the database from the ground up to adapt it with new functionalities
- **Restaurant Management Database With GUI Using Python and MySQL**
  - A database system for restaurant management using Python Tkinter and MySQL for the final project of my Database Design course
  - Applied ER and normalization techniques to design the database and adopted Python to build a GUI app to connect with the database and add/delete/edit records and tables, and execute queries on the database
- **Threads and Ticket Lock Implementation in XV6**
  - Modified XV6 process allocation, execution, and termination implementations to add support for threads so that each process can have several threads.
  - Modified scheduling algorithm to schedule threads.
  - Added Ticket Lock to the kernel.
  - This was my Operating Systems course final project
- **Modified XV6 with New Features**
  - Implemented a modified version of the XV6 original scheduling algorithm and a modified priority-based scheduling algorithm to take both the waiting time and importance of a task into account.
  - Added system calls to choose the scheduling algorithm in a process, to count the number of called system calls in a process, and some other system calls.
  - Added ability to measure creation time, termination time, sleeping time, ready time, and running time of processes to measure the performance of the new scheduling algorithms
- **Arduino FreeRTOS EDF and FCFS Scheduling Implementation**
  - Implementation of EDF and FCFS scheduling algorithms in FreeRTOS for Arduino boards for my Real-Time and Embedded Systems course.
- **Compiler Project**

- Lexical Analysis, Syntax Analysis, Semantic Analysis, and Intermediate Code Generation implemented with JFlex and Bison for my Compiler Design Course (final project) for a specific grammar (which is included in the repository)
- Intermediate representation is in three address code format

- **Java Download Manager with GUI (JDM)**
  - A GUI java download manager with queue support for my Advanced Programming course (midterm project)
- **Simple Google Search Query Parser and Report Generator Web Application**
  - A simple google search query parser used for generating an organized excel file from google search query results and retrieving various information on top search results (URL, domain, and some SEO information) Using Java Spring and Maven to run on a web-server
- **MATLAB Voice Gender Detection**
  - Gender detection project for MATLAB based on voice files. Final project for my Signals and Systems course
- **Hardware Implementation of a Matrix Equation Solver Algorithm**
  - Implementation of a matrix equation solver algorithm in VHDL for the final project of my FPGA course
- **Elevator Circuit**
  - An elevator circuit designed and implemented in Verilog for my Logic Circuits course Final Project
- **Battle Ship Game**
  - Battle Ship Game implemented in Java. Supports both single-player and local multiplayer modes. The game is console-based and doesn't have any GUI.
- **Simple Image Compressor**
  - Implementation of an image compression algorithm in python using NumPy library for my Applied Linear Algebra course
- **Hangman**
  - A terminal-based Hangman game written in C for the final project of my Introduction to Programming course in the first semester at university

Extra-Curricular Activity

- I was one the website moderators and video content creators at GameemaG back in 2013. GameemaG was one of the most credible websites focused on the video games industry in Iran, which had become one of the most engaging community hubs among Persian speaking gamers due to its fast and comprehensive news, reviews and previews. In 2016, the website's name changed to VGMag. I was responsible for moderating the website as well as the discussion board and creating video content for the site.
- I was the Student Council President during my senior years at Khaje Nasir High School and tried to do my best to bring everyone together and help the students to exert 100% of their abilities while growing together as a team and experiencing the joy of learning.

References

- Up to 4 references available on request