Amir Masood Baghi

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"In the depth of Winter, I finally learned that within me there lay an invincible Summer."
- Albert Camus

Personal Profile

Currently a computer science student in a Master's program at Uppsala University, I am very enthusiastic about game development, computer graphics, and programming in general. I have a fair amount of academic knowledge of computer science and a medium level of knowledge of game development. I mostly aspire to contribute to unique and creative worlds and games that are inspiring. Moreover, I am an avid art and philosophy lover.

Education

Uppsala University   *Uppsala, Sweden*
Master of Science In Computer Science   *Fall 2022 - Current*

Immediately after finishing my bachelor's program, I applied for the MSc Computer Science program in Uppsala University to further my studies. Consequently, I got admitted into the program, and I started my studies in September 2022. Currently in the second semester of the program, I have managed to pass all of my courses while achieving distinction on most. I am planning to complete my program in September 2024.

Shiraz University   *Shiraz, Iran*
Bachelor's Program In Computer Engineering   *Fall 2018 - Fall 2022*

In 2018, I was admitted into Shiraz University's Bachelor's program in Computer Engineering, having ranked 662nd in the national entrance exam. After four years of studies at Shiraz University's School of Electrical and Computer Engineering, I finished my program with an 18.56/20 CGPA (*Ranked 2nd among the total of 81 students in my class*).

National Organization for Development of Exceptional Talents Asadpour High School   *Bandar Abbas, Iran*
Mathematics-Physics Diploma   *2014 - 2018*

Graduated with 19.28/20 CGPA.

Work Experience

Medrick Games   *Tehran, Iran (Remote)*
Unity Game Developer (Internship)   *Sept 2021 - Aug 2022*

In September 2021, I got accepted for an internship position at Medrick Games, which is an active game publishing and development studio in Tehran, Iran. Working remotely from Shiraz during most of the internship period, I worked as an Unity game developer in the hyper-casual game development department. In addition to game development, I participated in game design tasks such as idea development and refinement. During this time, my team and I made *four complete casual/hyper-casual mobile games* among other activities.

Academic Experience

Teaching Assistant, Database Design Principles Course   *Shiraz, Iran*
Shiraz University   *Spring 2022 (4th Year of Bachelor's)*

Applied in my eighth term. I provided learning materials on database design principles, ERD design, SQL, relational algebra, relational calculus, and functional dependencies. Under the supervision of Dr. Mohammad Hadi Sadreddini.

Teaching Assistant, Operating Systems Lab Course   *Shiraz, Iran*
Shiraz University   *Fall 2021 (4th Year of Bachelor's)*

Applied in my seventh term. I provided learning materials on Linux, bash scripting, working with processes, and concurrent programming using Python. Under the supervision of Dr. Mohammad R. Moosavi and Dr. Ashkan Sami.

Teaching Assistant, Computer Arch. Lab Course   *Shiraz, Iran*
Shiraz University   *Spring 2021 (3rd Year of Bachelor's)*

Applied in my sixth term. During this course, I, alongside other members of the TA team, taught the main parts of a MIPS architecture using Verilog. Under the supervision of Dr. Mohsen Raji.

Teaching Assistant, Principles Of Programming Course   *Shiraz, Iran*

Shiraz University   *Fall 2020 (3rd Year of Bachelor's)*

Applied in my fifth term. I provided learning materials and extracurricular classes on principles of programming using C. Under the supervision of Dr. Ali Hamze.

Teaching Assistant, Advanced Programming Course   *Shiraz, Iran*

Shiraz University   *Spring 2020 (2nd Year of Bachelor's)*

Applied in my fourth term. As the teaching assistant of the course, I provided learning materials, such as videos, lectures, and extracurricular classes on Java object-oriented programming. Under the supervision of Dr. Ali Hamze.

Teaching Assistant, Fundamentals Of Computer Programming Course   *Shiraz, Iran*

Shiraz University   *Fall 2019 (2nd Year of Bachelor's)*

Applied in my third term. I had passed the course in my first term. Under the supervision of Dr. Mohammad Hadi Sadreddini.

University Projects

A Game Listing App UI   *Uppsala, Sweden*

Uppsala University - Human Computer Interaction Course   *Fall 2022*

Based on human-computer interaction principles, a user interface was developed for a fictional video game listing app. Developed in Adobe XD.

Added Constraints, MiniCP Solver   *Uppsala, Sweden*

Uppsala University - Combinatorial Optimisation Course   *Fall 2022*

New constraints (e.g. AllDifferent and Disjunctive) were developed for the MiniCP constraint solver in Java.

Carcassonne Map Generator   *Uppsala, Sweden*

Uppsala University - Combinatorial Optimisation Course   *Fall 2022*

A *proper* map generator for the game of Carcassonne was implemented in a constraint modeling language, namely MiniZinc. Specific constraints and rules were to be followed in the generation.

Advanced Reversi AI   *Uppsala, Sweden*

Uppsala University - Functional Programming I Course   *Fall 2022*

The game of Reversi (Othello) and an advanced opponent AI were implemented in Haskell.

The CORDIC Machine   *Shiraz, Iran*

Shiraz University - Digital System Design Course   *Fall 2021*

The circular-rotation mode of the CORDIC machine was to be implemented on FPGA. Simulated in Python and written in Verilog.

Aphrodite, A Covid-19 Detection Application   *Shiraz, Iran*

Shiraz University - Systems Analysis and Design Course   *Fall 2021*

An application was developed upon a pre-trained model (COVIDNet-CT) to accommodate COVID-19 detection for hospitals in Shiraz. A completely dockerized application, including telemetry for the model performance and monitoring. Python, Qt C++, Prometheus, Grafana, Node Exporter, and MySQL were utilized.

Alethia, Mock Linkedin Website   *Shiraz, Iran*

Shiraz University - Databases Design Principles Course   *Spring 2021*

As the course project, a website simulating the features and looks of LinkedIn was developed. Vue.js, Gin (Golang), MySQL, Docker, gRPC, cron, Redis, and Nginx were utilized. All services were dockerized and an effective container orchestration was designed. *The project was ranked 2nd in the course.*

Various Game Development Mini-Projects   *Shiraz, Iran*

Shiraz University - Computer Games Design and Computer Graphics I Courses   *Fall 2020 - Spring 2021*

Main concepts in game development/graphics, such as skeletal animation (inverse kinematics), game engine development and design patterns, game physics, the render engine, and game metric analysis were implemented in these projects. All written in C++ using OpenGL/GLFW/GLUT.

Simple Unix Bash   *Shiraz, Iran*

Shiraz University - Operating Systems Course   *Fall 2020*

As the course project, a simple Unix-like bash was written in C++ to simulate the main functionalities of bash (e.g. executing Unix commands).

3d Eight Queens   *Shiraz, Iran*

Shiraz University - Computer Graphics I Course   *Fall 2020*

As the course project, a program simulating the eight queens problem in 3D graphics was written in C++ using only OpenGL. Advanced lighting and surface materials were implemented and used to improve the graphics.

Presentation/Video Sharing Website
Shiraz, Iran

Shiraz University - Technical Presentation Course *(Volunteer Project)*
Fall 2020

Done voluntarily for the Technical Presentation course. Based on the suggestion of the instructor of the course, Dr. Koorush Ziarati, we developed a website where students can share presentations and give feedback on other submissions, including a management panel for the instructor and an online video-streaming option with live comments. Developed using Django and Vue.js.

Modo, Bus Transportation App
Shiraz, Iran

I.D.E.A. Footsteps Contest
Summer 2020

For the I.D.E.A. Footsteps Contest, we were tasked with implementing a tracking system for the university's bus lines, including a mobile app to provide users with info on the scheduling. Developed with Flutter. *Our team's submission was ranked 1st in the contest.*

MIPS-Based CPU
Shiraz, Iran

Shiraz University - Computer Architecture and Computer Architecture Lab Courses
Spring 2020 - Fall 2020

A pipelined CPU based on MIPS was implemented in Python (*for Computer Arch. Course, ranked 1st*) and in Verilog (for Computer Arch. Lab Course).

Steiner Tree Finder
Shiraz, Iran

Shiraz University - Data Structures and Algorithms I Course
Spring 2020

As the course project, an algorithm to find an acceptable Steiner Tree for a graph, in O(N) time complexity, was designed and implemented in Python.

Atelier, Workshop Management Website
Shiraz, Iran

Shiraz University - Advanced Programming Course
Fall 2019

As the course project, our team implemented a fully functional website, written in Java, to carry out a workshop management system with various features. *The project was ranked 1st.*

Teatro, Game Console In C
Shiraz, Iran

Shiraz University - Principles of Programming Course
Spring 2019

As the course project, our team implemented a game console to be able to render certain 2D games on PC, written in C. *The project was ranked 2nd in the course.*

Blockchain-Based Transaction Management System
Shiraz, Iran

Shiraz University - Fundamentals of Computer and Programming Course
Fall 2018

As the course project, a system to manage transactions in an unreal currency, based mainly on blockchain technology, was implemented in Python.

Affiliations

I.D.E.A Association
Aachen, Germany (Remote)

Board Member
December 2020 - August 2022

After ranking first in the competition held by the association, we were invited to join the board to help the association in holding the next contest, as well as other activities such as contacting potential sponsors and participating in meetings where each member presents their professional experience in their area of work.

Awards And Honors

Ranked First, The First Technical Footsteps Competition
Shiraz, Iran

I.D.E.A Association
August 2020

Designed and developed a route-finding application for the university campus bus lines. Our submission for the competition was ranked first.

Ranked Second, My Class
Shiraz, Iran

Shiraz University
September 2018 - September 2022

Among 81 students, I ranked second in my class with a CGPA of 18.56/20.

Dean's List
Shiraz, Iran

Shiraz University
September 2018 - September 2022

As the second student in the ranking of my class, I was included in Shiraz University's Department of Computer Science, Engineering, and Information Technology's dean's list, which is a list of academically accomplished students in each class.

Certificates

TOEFL iBT (120/120)
Tehran, Iran

ETS
Dec 2021 - Dec 2023

Achieved a full score of 120 on the TOEFL Internet Based examination.

Completion Of A Full Program In English Language   *Bandar Abbas and Shiraz, Iran*

Iran Language Institute   *2010 – 2019*

Having started the English language program at the young adults level at the institute in 2010, I finished the full program in 2019, without a single fail, by passing the last course of the adults level with a total average score of 92 out of 100 for the whole program.

Skills

Programming Languages	Python, Java, C/C++, C#, JavaScript, Golang, Dart, Verilog, HTML/CSS, x86/MIPS Assembly Language, MiniZinc, and Haskell
Game Engines	Unity
GPU Programming Frameworks	CUDA and OpenACC
Graphics Libraries	OpenGL, GLUT, GLFW, GLSL, and SDL
Database Technologies	MySQL, Redis, and PostgreSQL
Container Orchestration	Docker
Data Engineering Tools	Kafka, Prometheus, and Grafana
Web/Application Frameworks	Spring, Django REST, Gin, Flutter, Vue, Vuetify, Qt, Bootstrap, Flask
Operating Systems	Windows and Linux-based operating systems
Mathematical and ML Tools	MATLAB, Maple, jupyter, NumPy, pandas, and scikit-learn
Project Management	Agile Software Development (SCRUM), Git Version Control Systems, Trello, JIRA, and Slack
Miscellaneous	LaTeX , UML Diagarms, and Adobe XD
Soft Skills	Communication, Team-work, Team Management, and Being Resilient and Diligent

Interests

- Programming
- Artificial Intelligence
- Games and their Development
- Philosophy
- Art, esp. Music and Film
- Storytelling

Languages

English	Full Proficiency
Farsi	Native Proficiency
Swedish	Intermediate Proficiency
Japanese	Elementary Proficiency

References available upon request.