

Amir Masood Baghi

Uppsala, Sweden

+46 73 971 61 88 | bamirmasoud@gmail.com | github.com/amirbaghi | linkedin.com/in/amir-masoud-baghi

Currently a computer science Master's student at Uppsala University, I have a strong interest in both game development and machine learning. With a solid foundation in these areas, I aim to participate in research and development-oriented activities towards developing fresh approaches to practical problems, such as those found in the development of games. In addition, I enjoy exploring art, philosophy, and overall programming.

Education

Uppsala University

Uppsala, Sweden

Master of Science In Computer Science

Fall 2022 - Current

- Passed with *distinction* in all completed courses.
- Recipient of the Uppsala University International Scholarship Fund for the second year.

Shiraz University

Shiraz, Iran

Bachelor's Program In Computer Engineering

Fall 2018 - Fall 2022

- Ranked 662nd in the National Entrance Exam (among 144,000 applicants).
- Finished in four years with an 18.56/20 CGPA. Ranked 2nd among the 81 students of 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

Electronic Arts, SEED

Stockholm, Sweden

Master's Thesis Intern In Machine Learning

Jan 2024 - Current

- Currently working on my master's thesis as an intern in the SEED research team at Electronic Arts.
- Researching the application of modern *multi-agent reinforcement learning* methods in game-AI using machine learning, in addition to possible improvements to the methods.

Medrick Games

Tehran, Iran (Remote)

Unity Game Developer (Internship)

Sept 2021 - Aug 2022

- Collaborated with my team to develop four casual/hyper-casual mobile games, among other project contributions.
- Primarily focused on programming game mechanics and gameplay for prototypes, utilizing Unity/C#.
- Participated in game design tasks, including idea development and refinement. Additionally involved in marketing activities, such as producing one-minute promotional videos for our games.

Academic Experience

Teaching Assistant, Various Courses

Uppsala, Sweden

Uppsala University

Spring 2023 - Current

- Previously Human-Computer Interaction, Combinatorial Optimization, and Statistical Machine Learning. Currently the new instance of Statistical Machine Learning and Reinforcement Learning.

Research Intern

Uppsala, Sweden

Uppsala University

Summer 2023 - Winter 2023

- A voluntary research endeavour, I studied the neural compression and novel view synthesis of high-resolution micro-CT imaging using state-of-the-art methods in the field and implemented a feasible solution to the problem. *Supervised by Jens Sjölund.*

Teaching Assistant, Various Courses

Shiraz, Iran

Shiraz University

Fall 2019 - Spring 2022

- Assisted in various courses including Database Design Principles, Operating Systems Lab, Advanced Programming, and more.

Projects

Neural Compression and Novel View Synthesis of High-Resolution Micro-CT Imaging

Uppsala, Sweden

Uppsala University - Independent Research Work and Project in Computer Systems Course

Winter 2023

Implicit neural representations (INRs), like CuNeRF and hash-based methods, were used to compress, reconstruct, and render high-resolution 3D micro-CT scans. Implemented using PyTorch and Optuna. Under supervision of Jens Sjölund and partly Stefanos Kaxiras in the Project In Computer Systems course.

Learning To Play Pong Using DQN

Uppsala University - Reinforcement Learning Course

A Deep Q-Network (DQN) was implemented, based on the Nature paper by Mnih et al. (2015), to learn and play the game of Pong (and most Atari games). The network was tested on "Breakout!" successfully as well. Implemented using PyTorch.

Uppsala, Sweden

Spring 2023

Raytracing, Environment, and Shadow Mapping For a Model Viewer

Uppsala University - Computer Graphics Course

Enhanced an existing GLTF model viewer as the final course project by adding raytracing, environment, and shadow mapping. Developed in C++ with OpenGL and GLSL, building upon earlier assignments that established the renderer's foundations.

Uppsala, Sweden

Spring 2023

Advanced Reversi AI

Uppsala University - Functional Programming I Course

The game of Reversi (Othello) and an advanced opponent AI were implemented in Haskell. Ranked 3rd in a tournament against other AIs.

Uppsala, Sweden

Fall 2022

Aphrodite, A Covid-19 Detection Application

Shiraz University - Systems Analysis and Design Course

Developed a Dockerized COVID-19 detection application for Shiraz hospitals using a pre-trained model (COVIDNet-CT). Utilized Python, Qt C++, Prometheus, Grafana, Node Exporter, and MySQL.

Shiraz, Iran

Fall 2021

Game Engine Development Mini-Projects

Shiraz University - Computer Games Design and Computer Graphics I Courses

Implemented game engine components in C++ with OpenGL/GLFW/GLUT, incorporating core game development and graphics concepts such as skeletal animation, game physics, rendering engines, design patterns, and metric analysis.

Shiraz, Iran

Fall 2020 - Spring 2021

Simple Unix Bash

Shiraz University - Operating Systems Course

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).

Shiraz, Iran

Fall 2020

Teatro, Game Console In C

Shiraz University - Principles of Programming Course

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

Shiraz, Iran

Spring 2019

Awards, Honors, And Certificates

2023	Completion of SFI (Svenska För Invandrare) , Uppsala Kommun	Uppsala, Sweden
2023	International Scholarship Fund , Uppsala University	Uppsala, Sweden
2022	Dean's List , Shiraz University	Shiraz, Iran
2021	TOEFL iBT (120/120) , ETS	Tehran, Iran
2020	Ranked First In The Technical Footsteps Competition , I.D.E.A Association	Shiraz, Iran
2019	Completion Of A Full Program In English Language , Iran Language Institute	Shiraz, Iran

Skills

Programming Languages	Python, C/C++, C#, Java, JavaScript, Golang, HTML/CSS, MiniZinc, Haskell, GLSL
Game Development	Unity, Game Design Patterns
Graphics and GPU Libraries	OpenGL, GLUT, GLFW, SDL, CUDA, OpenACC
Web/Application Frameworks	Flutter, Vue, Qt, Spring, Django REST, Gin, Bootstrap, Flask
Mathematical and ML Tools	PyTorch, Ray, NumPy, Polars, Pandas, Optuna, Scikit-Learn
Project Management	Agile Software Development (SCRUM), Git, Trello, JIRA
Miscellaneous	Docker, MySQL, LaTeX, UML Diagrams
Soft Skills	Communication, Teamwork, Team Management, Resilience, Perseverance

Interests

Programming / Games and their Development / Art, Music, Film / Artificial Intelligence / Philosophy

Languages

English	Full Proficiency
Farsi	Native Proficiency
Swedish	Intermediate Proficiency

References available upon request.