

# Amir Masood Baghi

Uppsala, Sweden

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

I am strongly passionate about game development and machine learning. Having a deep background in these two fields, I tend to research, study, and develop new game-dev and AI adjacent tools, projects, and methods. Also, I am very interested in art, especially in its forms of films, music, and video games, and I try to incorporate it in all of my projects in one way or another.

## Education

### Uppsala University

Uppsala, Sweden

#### Master of Science In Computer Science

Fall 2022 - Fall 2024

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

### Netlight Consulting

Stockholm, Sweden

#### Software Engineering Consultant (Game-Dev and AI/ML)

Sep 2024 - Current

- Currently a software engineering consultant at the Netlight Consulting firm.
- Focusing mainly on game development and AI/ML assignments and clients.

### Electronic Arts, SEED

Stockholm, Sweden

#### Master's Thesis Intern In Machine Learning

Jan 2024 - Aug 2024

- Worked on my master's thesis as an intern in the SEED research team at Electronic Arts.
- Researched, implemented, and improved upon a state-of-the-art *multi-agent reinforcement learning* method for the game-AI in football-like environments.

### 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 - Aug 2024

- Courses include Human-Computer Interaction, Combinatorial Optimization, 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

<b>Applying Multi-Agent Reinforcement Learning as Game-AI in Football-like Environments</b> EA SEED and Uppsala University - Master's Thesis A state-of-the-art multi-agent reinforcement learning method was researched, implemented, and improved upon, using reward shaping and architectural changes, as the game-AI for the game of football. Implemented mainly in PyTorch and Ray, among other tools. Under supervision of Linus Gisslén, Alessandro Sestini, and Jens Sjölund.	<b>Stockholm, Sweden</b> <i>Spring and Summer 2024</i>
<b>Neural Compression and Novel View Synthesis of High-Resolution Micro-CT Imaging</b> Uppsala University - Independent Research Work and Project in Computer Systems Course 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 course.	<b>Uppsala, Sweden</b> <i>Winter 2023</i>
<b>Deep-Q Network for Pong</b> 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.	<b>Uppsala, Sweden</b> <i>Spring 2023</i>
<b>Advanced Reversi AI</b> 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.	<b>Uppsala, Sweden</b> <i>Fall 2022</i>
<b>Aphrodite, A Covid-19 Detection Application</b> 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.	<b>Shiraz, Iran</b> <i>Fall 2021</i>
<b>Game Engine Development Mini-Projects</b> 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.	<b>Shiraz, Iran</b> <i>Fall 2020 - Spring 2021</i>

Awards, Honors, And Certificates

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

Skills

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

Interests

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

Languages

<b>English</b>	Full Proficiency
<b>Farsi</b>	Native Proficiency
<b>Swedish</b>	Intermediate Proficiency

References available upon request.