

Tom Axblad

✉ 073-9444934
✉ tom.axblad@gmail.com



About me

I am always motivated to work with code for games and VR. I have always had an interest in learning programming and development since I first encountered programming as a concept. This has led me to specialising within Visualisations and Graphics to learn more creative applications of programming, resulting in my degree job suggesting a ray traced foveated rendering technique using eye tracking in VR.

Experience

2021-Present **Software Engineer / Game Developer, Adventure Box, Stockholm.**

I started working within the games industry in the beginning of 2021 as a software engineer for Adventure Box. During this time I have worked with different parts of the in-house game engine used in Adventure Box, including: UI, multiplayer networking, AI, rendering, and event systems. The company works in an agile like planning using git as version control. During my time at the Adventure Box I have learned how to work with game development from a company perspective, regarding product monetizing and virality.

2018-2020 **Teacher Assistant, KTH, Stockholm.**

As a teacher's assistant I helped students understand the material and solve difficult problems. Working as an assistant gave me a deeper knowledge about how to communicate effectively with different types of people, as well as how to understand what is missing in order for a person to understand complex concepts.

2018-2019 **Software Engineer, MiToo, Stockholm.**

As responsible for software and product migration, I both provided other employees with data and custom programs to facilitate their work, and lead a company wide migration project from an old e-commerce system to a new system.

Education

2018-2020 **Masters Programme - Computer Science: Visualisation and Graphics, KTH, Stockholm.**

The Visualisation and Graphics specialisation within the Computer Science Master focused on how to apply advanced algorithms and Mathematics in order to create impressive and informative visualisations, renderings and interactive applications. Complementing the specialisation with parallel programming has given me the knowledge on how to use multi threaded hardware for fast rendering, problem solving, and other applications.

2015-2020 **Degree Programme - Computer Science and Engineering , KTH, Stockholm.**

5-year education that provides good knowledge in programming, advanced mathematics, entrepreneurship, and working in major projects.

- 2013 **Military Education, Telecom warfare track, LedR, Försvarsmakten, Enköping.**
A three month military education with a focus on group assignments. This education taught me to quickly handle and carry out difficult tasks that I have no previous experience with, which included risk management, group collaboration, studying law, physical activities, mental endurance, physical endurance, and solving very difficult tasks in isolation.

Teacher's Assistant: Courses

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| 2020 | Master course: Introduction to Visualization | <i>Lab Assistant, Exercise Responsible, Examiner</i> |
| 2019-2020 | Basic Programming | <i>Lab Assistant</i> |

Projects

- 2020 **Foveated Path tracing in VR, Masters Degree Thesis.**
My masters degree was to find how significant the improvement is when using foveated rendering for a Path traced rendering system in VR. For this project, I implemented a GPU based rendering system for VR headsets. The system is written in HLSL, and uses Unity to handle objects management and inputs, but does not use any standard rendering from Unity. The foveated system uses the focal point of the users eye to generate multiple textures of different resolutions, which are then up-sampled with bi-cubic interpolation, and then merged together to form the final rendered image displayed in the VR headset for that eye.
- 2019 **Simmix, Advanced Graphics interaction.**
Project Simmix is a collaborative 3D modeling tool in VR. It uses networking to connect multiple people into one instance and uses custom made mesh handling structures to make and manipulate 3D models. My role in the project was to implement the back-end system which manages all other systems in the project. I was also responsible for the VR integration, the input system, and UI.
- 2019 **Asters Planetai, Game Development.**
Asters Planetai is a game where time manipulation enables you to interact with your past selves. By rewinding time you can see your clones performing the exact actions you did in the past, and you can even destroy your past self to stop them. In this project, I made the key feature of recording the actions of the player, and then execute these actions on all clones when rewinding time. I also made all of the art assets for the project.
- 2020-2021 **Custom Compression Algorithm, Rust.**
When I was a beginner in writing rust code I wanted to start a project to learn more, and I also wanted to create a compression algorithm focusing on processor parallelism, so I took both of these and made a project with them. The proposed compression algorithm is based on the idea of doing very simple compression on a file to facilitate parallel work, compressing over the file again when done to create a layered compression. The algorithm creates more layers until the achieved compression is negligible.

Programming Experience

Rust, C, C++, Java, C#, JavaScript, React, HTML, CSS, XML, Python, GO, Haskell.
Also Has experience with Godot, Unity, Blender, Photoshop, and Premiere Pro.

References

Given out upon request.