

Experience

Research Intern – AMD [2019] I researched and developed a novel hybrid hair rendering method for real-time computer graphics. It's written from scratch in Vulkan™ and C++17. The rasterizer is similar to TressFX but it also features a volumetric approximation for level-of-detail. I've submitted the paper to EGSR 2019. (M.Sc. Thesis, 7 months).

GPU Software Engineer – UX3D [2018] I wrote a lot of computer graphics solutions in Vulkan™ for our customers. I developed Khronos Group's official glTF Sample Viewer in WebGL. I was one of UX3D's founding staff. (Part-Time, 5 months).

ICT Engineer – Ericsson [2017] I made the tools for their GIC which automate insertion of cabling information to a database. (Internship, 3 months).

Thesis Intern – Ericsson [2016] I developed the tooling infrastructure to gather code coverage for their performance-sensitive system. I researched metrics for clustering similar tests to reduce wait time in their CI system. (B.Eng. Thesis, 5 months).

Side Projects

Monte Carlo Raytracer A photon map raytracer multithreaded by OpenMP and written in C++14.

GLFW Regular contributor to the X11 back-end.

Ocean Wave Simulator & Renderer Based on a Gerstner wave shader using OpenGL tessellation.

CHIP-8 Emulator Written in C++11 with SDL2.

Behaviour Tree Evolution (BTE) AI A sandbox for testing genetic algorithms on behaviour trees.

NQ Sokoban A 3-D Sokoban clone in OpenGL.

Particle Simulator with Curl-Noise A kernel in OpenCL for procedural fluid flow such as smoke.

Lossless Codec Library LZW and ANS for C++.

Education

Linköping University [2016 - 2019] Soon to get a *M.Sc.* degree in *Computer Science*. I have focused on both *computer graphics* and *artificial intelligence*.

Technical University of Munich [2018] I did my exchange semester at TUM to study methods in *machine learning* applicable to computer graphics.

Linköping University [2013 - 2016] Received my *B.Eng.* degree in *Computer Engineering*. I focused on *software development* and *systems programming*.

Proficiency

Software Development Knowledgeable in many programming languages: C++, Python, C#, Java, just to name a few. I am comfortable using C++20, and have been a part of ISO's WG21. I can develop on both Windows and Linux with their respective toolchains. I can profile, debug, and commit code. I can build efficient algorithms and analyze them.

Computer Graphics I can use both OpenGL and Vulkan™. I'm experienced in real-time rendering methods, as well as offline techniques. I can write shaders in GLSL and kernels in CUDA/OpenCL. I know about geometric modeling and animation, hair rendering, procedural texturing, raytracing, PBR, volume rendering, and fluid simulation too. I've experience with RenderDoc and AMD's RGP.

Computer Architecture I've got a good grasp on common CPU and GPU architectures. I can tailor my code to the hardware to squeeze performance from it. I am familiar with data-oriented designs.

Artificial Intelligence and Machine Learning I know both "classical" and deep machine learning in R and Python (using SciPy, Keras, TensorFlow). I also have experience building game AI systems.

Distinction

Volunteer at Meeting C++ I helped organize it.

Attended Yrkes-SM Got bronze in web design.

Winner of the ITG-Award 1st in programming.

Languages

English My certificate proves *professional fluency*.

Swedish I am *fluent*. I've lived there for 10 years.

Brazilian Portuguese This is my mother tongue.

Spanish I've *intermediate* proficiency in reading.

German & Japanese Just *elementary* knowledge.

Certificates

Cambridge ESOL CAE C1 English proficiency.

Cisco CCNA Network installation and routing.

Swedish Driver's License Class B (until 2023).

Links

[1] <https://eriksvjansson.net>

[2] [linkedin.com/in/eriksvjansson](https://www.linkedin.com/in/eriksvjansson)

[3] github.com/caffeineviking

References Given on request, please contact me!