Gustav Björk

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Born 23 February 1996

WORK EXPERIENCE

Jun 2023 – Now

Development Team Lead

MSAB, Stockholm

On top of my earlier tasks, I continue to develop our tools to access and interpret mobile data while leading the android decoding team.

Oct 2021 – Jun 2023

Software Developer and Scrum Master

MSAB, Stockholm

- Developing tools used in IT forensics to gather evidence from mobile phones.
- Reverse engineering and code injection to decode app data.
- Decrypting encrypted data.
- Most of my work is done in C++.

Jan 2021 – Oct 2021

Graphics programmer for the Gripen E/F aircraft

Saab AB, Järfälla

- Designed and implemented the rendering framework used for the displays in the Gripen E/F aircraft.
- I was part of a small team of 3 people where we had the sole responsibility for the rendering framework. This allowed me to be included in architectural and design decisions.
- I worked in C++ and using the rendering API OpenGL.

2012 – 2019

Summer Worker in Software Development

Hitachi ABB HVDC, Ludvika

- I developed tools for the electrical engineers to utilize in their workflow, especially to analyze, compare, and visualize results from power grid simulations. During 2019 I was also a supervisor for the new summer workers at the department.
- C++, Matlab, Python

Apr 2019 – Jun 2019

Freelance Game Developer

Redgert Comms, Stockholm

- I developed a web-based game to help market the company ”K2A Fastigheter” leading up to their stock exchange listing. I was hired as a freelance developer by the PR agency ”Redgert Comms”.
- The game was made from scratch using JavaScript and WebGL.

EDUCATION

2015 – 2020

Master of Science in Engineering Degree in Game and Software Engineering

Faculty of Computing, Department of Computer Science, Blekinge Tekniska Högskola (BTH)

- Master’s thesis on intersection detection using Neural Networks. Link to publication

SKILLS

Languages

Swedish - Native
English - Fluent

Programming languages and APIs

C++, C, TypeScript/JavaScript, Python
OpenGL, WebGL, DirectX 12

PROJECTS

My school and hobby projects are best viewed through my portfolio - bjorkgustav.se/portfolio

Ongoing

Web-based game engine

Continuously developing my game engine. To easily showcase my work I've made it web-based, built from scratch with Typescript and WebGL.

- Deferred rendering
- Directional and point shadow mapping
- Volumetric lighting
- Skeletal animation
- Particle system
- Grass rendering
- Instancing
- Collision detection and handling through SAT, including continuous collisions
- Dynamic hierarchical trees (quad and octree) for frustum culling and collision checking
- Overlaid HTML for GUI elements

This engine, in different stages of it's development has been used to create game jam submissions, they are all available in my portfolio.

Sept 2019 – Dec 2019

Large Game Project - SPLASH$_2$O

BTH, Karlskrona

Ray-traced online first-person shooter built in C++ and DirectX 12.

My contributions included

- Sole responsibility for the physics engine with mesh-to-mesh continuous collisions.
- Frustum culling using an octree.
- Particle effects framework.
- Game design and gameplay programming

Jan 2018 – Mar 2018

Small Game Project - SPASM

BTH, Karlskrona

My contributions included

- Creating models
- Animations
- Map building (tools and map design)
- Map building block appearance and connections
- Score visualizations
- Game design and gameplay programming

ADDITIONAL INFORMATION

References References are gladly provided upon request.