

Lars Andersson

Passionate about software development and visual design. I dedicate most of my spare time to game development, combining technical- and creative problem-solving. I enjoy turning ideas into interactive experiences, and continuously improving my skills through hands-on projects.

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experience

2023 - present

Software Developer at [Toyota Material Handling Europe](#) (via HiQ)

Developing the next generation of Toyota's autonomous forklifts.

- Firmware development on the Truck Controller System (TCS) (**C, C++, Bazel, GoogleTest**)
- Firmware development on the Unit for Automation Control (UAC) (**Structured Text, PLC**)
- Designing and constructing HIL rigs for TCS (**Hardware, Arduino, Linux, PyTest**)
- Reverse engineering UAC vehicle export mechanism, and re-implemented via scripting as a proof-of-concept to speed up development times (**Python**)
- Building tools for analysing CAN debug data (**C, Code Generation, Python, Bazel**)
- Maintaining and improving Azure pipelines
- Validating functionality and implementations on actual forklifts

C, C++, Structured Text (PLC), Python, Asyncio, PyTest, Bazel, GoogleTest, CANopen, Vector CANalyzer, Azure DevOps, Hardware, Linux, HIL, Code Generation

2022 - 2023

Software Developer at [Qualcomm/Arriver](#) (via HiQ)

Tailoring Qualcomm's camera perception software to meet BMW's requirements.

- Embedded software development (**C, Bazel**)
- Developing tools to validate data integrity in SIL (**C++**)
- Developing tools to preprocess and refine data for HIL (**C++**)

C, C++, SOME/IP, Bazel, Jenkins, Jira, Gerrit

2021 - 2022

Software Developer at [Volvo Cars](#) (via HiQ)

Bring-up of the Autonomous Drive Primary Module (ADPM) in Volvo Cars' next-generation autonomous vehicles (**Volvo EX90**).

- Porting Volvo Cars' Core System Platform (CSP) to new hardware (**C, Docker, BitBake**)
- Integrating Nvidia's DriveOS 6 into the CSP, in close collaboration with Nvidia (**C, QNX, NVIDIA ORIN DevKit**)
- Successfully adapted Volvo's CSP software download mechanism to work on the new platform as a proof-of-concept (**C**)
- Designing and constructing development rigs (**Hardware, Linux, Bash, Python**)

C, QNX, Nvidia Drive OS, Docker, Python, Robot Framework, Bash, BitBake, Jenkins, Gerrit, Atlassian Jira & Confluence, Linux, HIL

2018 - 2021

Software Developer at [Svenska Ledargruppen](#)

Developing front end for different services provided by Svenska Ledargruppen such as HELP24, Qoll, BASkontroll and SlåLarm.

- Redesigning and simplifying complex websites and user interfaces (**HTML, JavaScript, CSS**)
- Developing web-based applications targeted for both mobile and non-mobile devices

Front-End, JavaScript, HTML, CSS, jQuery, Bootstrap, Data Tables, Google Maps API

2017 - 2021

Teaching Assistant at [Chalmers University of Technology](#)

- EDA223 - Real-Time Systems (**master's level**)
- DAT455 - Introduction to Python (**bachelor's level**)
- LET626 - Introduction to Real-Time Systems (**bachelor's level**)
- LEU432 - Introduction to Computer Engineering (**bachelor's level**)

projects

- 2023 - 2024** NES emulator - [NesScape](#)
A Nintendo Entertainment System (NES 8bit) emulator implemented in **C++** that aims to provide cycle accurate emulation of the original NTSC NES hardware. CPU implemented with all 256 opcodes cycle accurate. PPU implemented with accurate pixel rendering and sprite0 hit detection, and scrolling via loopy-registers. APU contains fully working pulse, triangle and noise channels while DMC channel is mostly implemented. The most common iNES mappers implemented (NROM, MMC1B, UxROM, AxROM and UN1ROM).
GitHub Repository - github.com/babaganosch/nes_emulator
- 2025** Weekend project - [CPU-based physics particle simulation](#)
Developed a CPU-based particle simulation, in **C++**, as a focused weekend project to explore performance limits. Successfully simulated ~30000 physics-based particles (2-6 px) in a 1800x1200 world, at a stable 60 FPS. Implemented full particle to particle collision handling, and rendered all particles in a single draw call using quads via a vertex array. Optimised update performance through basic spatial partitioning and multithreaded processing.
GitHub Repository - github.com/babaganosch/big_physics_sim
- 2016 - 2026** Various games and portfolio - [larsandersson.info](#)
- o **Nibelung** - Currently WIP
 - o **Abaddon** - Infinite world-gen prototype
 - o **Illfated** - Dungeon crawler with randomly generated worlds
 - o **Mincart Maniac** - Endless cave runner released on both iOS and Android
 - o **Pole Position Clone** - Retro racing game prototype in pseudo-3D
 - o **Frogger Recreation** - Project in Chalmers, recreation of Frogger but with a twist!
- 2021** Master's thesis - [Optimising a GPU-accelerated particle system for WebGL 1.0 using Extensions](#)
Exploring the advantages (and disadvantages) of **WebGL** extensions within the context of GPU-accelerated particle systems, as a part of my master thesis at Chalmers.
Thesis available @ [larsandersson.info](#)
- 2020** Open source GameMaker extension - [Notification System](#)
Lightweight framework for signals in GameMaker Studio with features such as callbacks and channels.
GitHub Repository - github.com/babaganosch/NotificationSystem
- 2019** Bachelor's thesis - [Objective Tiny-Timber : OTTO](#)
Creation of an object-oriented language and a **precompiler** for it, as an alternative to real-time **C**. The purpose was to improve and facilitate laboratory assignments within the course EDA223 - Real-Time Systems at Chalmers, and the University of Gothenburg.
Thesis available @ [larsandersson.info](#)
- 2018** Project at Cybercom - [Traffic Monitoring and Visualisation](#)
Collection of real-time data over Gothenburg, visualised on a **web application** with AI-based predictions of future traffic situations, as a project in the course DAT066 - Project at Chalmers, in collaboration with Cybercom.
Project report (swedish) available @ [larsandersson.info](#)
- 2018** Project at Volvo Cars - [Route Recorder](#)
Android application made to be run on a Volvo car infotainment computer, with the purpose to record driven routes and to visualise them as a heatmap on the in-car screen. Project in course DAT256 - Software Engineering Project at Chalmers.
Small preview available @ [larsandersson.info](#)
- 2018** Project at Chalmers - [Shape Arena](#)
Agar.io inspired **Java** multiplayer game developed in a team of five, as a project in the course DAT055 - Object oriented applications at Chalmers.
GitHub Repository - github.com/babaganosch/ShapeArena
- 2014** Clothing designs - [Sausage Clothing](#)
Clothing with custom prints by me. Some designs are heavily inspired by stuff I saw online at the time, and some are just replications of famous logos, often with a twist.
Website - sausagedclothing.se

education

- 2019 - 2021 Computer Systems and Networks - [Chalmers University of Technology](#)
 - o Master's Degree - Thesis: **Optimising a GPU-accelerated particle system for WebGL 1.0 using Extensions**
- 2016 - 2019 Computer Engineering - [Chalmers University of Technology](#)
 - o Bachelor's Degree - Thesis: **Objective Tiny-Timber : OTTO**
- 2013 - 2014 Foundation Year in Science and Engineering - [Jönköping University](#)
 - o Mathematics
 - o Physics
 - o Chemistry
- 2008 - 2011 Electrician (Upper Secondary School) - [Falkenbergs Gymnasieskola](#)
 - o Specialisation in Electronics

languages

- Swedish**
 - o Native
- English**
 - o Fluent

technical

- Languages** C, C++, GLSL, Python, Java, JavaScript, Structed Text, GML, HTML + CSS
 - Environments** Windows, Linux, OS X, QNX, CANopen, SOME/IP, Agile workflow (Scrum, SAFe)
 - Tools** VSCode, Git, Azure DevOps, Jenkins, Vector CANalyzer, Gerrit Code Review, Jira, Adobe Create Cloud, PyTest, Robot Framework, GoogleTest
- I enjoy, and have ease of, learning new technologies.**

references

References available upon request.

socials

Github
github.com/babaganosch

Twitter
twitter.com/babaganosch

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