

EDUCATION

M.Sc. in Computer Science
University of Copenhagen
2021-2024 (GPA: 11.6)

B.Sc. in Computer Science
University of Copenhagen
2018-2021

SKILL HIGHLIGHTS

- Systems development
- Machine learning
- High-performance software
- 3D Applications & processing
- Tool development
- Domain specific languages
- Software design

CODING

- C++
- Python
- PyTorch
- Java- & TypeScript
- C#/.NET
- Java
- Haxe
- Haskell

LANGUAGES

English	Fluent
Danish	Fluent

CONTACT

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Gustav Hanehøj

Freelance Software Engineer



ABOUT ME

I am an experienced software engineer with a passion for writing high quality code. With more than 7 years as a developer, I have worked on a diverse set of software solutions, including product platforms, machine learning, game engines and application software. I bring a positive, curious and ambitious spirit to the projects I work on.

I excel at designing and writing clean, orthogonalized and robust software, and in tackling existing technical debt to improve a software system. My academic background gives me the tools and abilities needed to think abstractly about complex systems and construct simple solutions. Machine learning has been a particular focus of my degree, and I have been continuing the work of my thesis on neural meshing as a part time research assistant at University of Copenhagen.

I have considerable experience with practical software solutions, and I have worked on large system- and platform-level C++ codebases, making me adept at writing highly performant and well-scaling code. Working on software tools used by other developers has given me an appreciation of the importance of communication and documenting my work, and I enjoy working in teams and making the collaborative process function easily.

I am quick to learn new technologies and to digest existing codebases, and I have a drive to understand whatever I am tasked to work on. I find motivation in delivering high quality solutions that solve real-world problems and in finding the balance between pragmatism and robustness.

EXPERIENCE

Hanehoj Consulting

Contract Software Engineer

2023 – Present

NOTABLE PROJECTS:

- Platform Developer
Sep 2023 – Nov 2023
Helped prepare an application product line for worldwide scaling by developing a templating system to make localized versions of the application configurable.

University of Copenhagen

Research Assistant

2024 – Present

- Scalable Neural Meshing of Arterial Networks
Jun 2024 – Present
Developed a framework for efficient mesh generation of arterial networks using a neural implicit representation to model an anatomically plausible geometry space, and with a focus on parallelizability and scalability.

Componium

Co-Founder, Software Engineer

2023 – Present

- **Game Engine Developer**
Jun 2023 – Present
Worked on an in-house game engine, developing various primary systems, including a thread-safe job and memory management system, a game object system and an AI system.
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Laerdal Copenhagen

Software Engineer

2015 – 2023

- **Software Engineer**
Aug 2020 – May 2023
Ported an existing product to a new version of the in-house web-application platform, including changes to make the UI accessible. Later joined the platform team, writing an embedded test framework, and supporting the application teams with platform needs. Since 2021, I was one of the primary programmers on a major overhaul of the platform, including a complete rework of the backend framework.
- **Software Test Engineer**
Aug 2018 – Jul 2020
Worked as the primary programmer on various tools to automate test cases of web-apps using TypeScript and Selenium. Developed a framework to simplify and accelerate test creation by creating reusable test subroutines.
- **Software Tester**
Jun 2015 – Jul 2018
Part time software tester, gaining early experience with debugging and issue diagnosis.

Skills

	Level	Latest use	Years of experience
Area			
Web-applications (full-stack)	Proficient	2022	3
PC applications	Expert	2025	4
Middleware (libraries/platforms)	Expert	2025	7
Programming language development	Expert	2025	6
Machine learning	Proficient	2025	4
Multi-threading / scalability	Proficient	2025	5
Performance optimization	Proficient	2025	3
Languages			
C++	Proficient	2025	3
C	Proficient	2023	2
C#/F#/.NET	Competent	2020	2
Java	Competent	2025	1
JavaScript/TypeScript	Proficient	2020	3
Python	Expert	2025	7
Haxe	Expert	2023	5
Shell	Competent	2025	5
Lisp	Beginner	2021	1
Haskell	Proficient	2024	2
Erlang	Competent	2022	1
Assembler	Competent	2023	2
CUDA	Competent	2023	1
HLSL	Competent	2024	1
OS			
Windows	Proficient	2025	7
Linux	Proficient	2025	7
Frontend			
HTML5	Competent	2023	3
CSS	Competent	2023	2
WebSockets	Competent	2022	2
ARIA / WCAG	Competent	2023	3
Polymer	Beginner	2019	1
Selenium	Competent	2020	2
Backend / Cloud			
Docker	Competent	2025	1
AWS	Competent	2025	1
Kubernetes	Beginner	2025	1
REST API	Competent	2025	2
Data-formats and -bases			
XML	Competent	2023	2
JSON	Proficient	2023	4
YAML	Competent	2024	2
SQL	Competent	2020	1
PostgreSQL	Competent	2020	1

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	Level	Latest use	Years of experience
Middleware			
Programming language design	Expert	2025	6
Domain specific languages	Expert	2025	6
Compiler development	Expert	2024	5
UI framework design and development	Expert	2023	4
Game engine design and development	Proficient	2025	2
Procedural content generation	Competent	2025	2
Computer graphics	Competent	2025	2
Shader programming	Beginner	2024	1
Data pipelines	Competent	2023	2
Image processing	Competent	2021	2
Signal processing	Competent	2022	2
Flow-oriented programming	Competent	2023	2
3D Pathfinding	Expert	2024	1
Entity Component System	Proficient	2024	2
Computational Simulation	Proficient	2025	5
Sockets / TCP / UDP	Competent	2022	1
Microservices	Competent	2023	3
Machine Learning			
Deep learning	Proficient	2025	4
PyTorch	Proficient	2025	4
TensorFlow	Competent	2025	1
Reinforcement learning	Competent	2024	1
Unsupervised learning	Competent	2023	2
Tools			
Visual Studio	Beginner	2024	2
VS Code	Expert	2025	7
VS Code extension development	Proficient	2023	3
Unity	Competent	2018	2
Git	Proficient	2025	7
Github	Proficient	2025	7
Bitbucket	Proficient	2023	5
Jira/Confluence	Proficient	2023	5
Methods			
CI	Proficient	2025	7
CD	Competent	2021	2
TDD	Proficient	2021	3
Gitflow	Proficient	2023	3
Agile	Proficient	2023	5
Scrum	Proficient	2023	5
Kanban	Proficient	2023	5
ISO/IEC 5055	Competent	2025	1
Software patterns	Expert	2025	7
OOD	Expert	2025	7
OOP	Expert	2025	7

Skill levels: Beginner, Competent, Proficient, Expert