

EDUCATION

M.Sc. in Computer Science
University of Copenhagen
1990-1994

B.Sc. in Mathematics
University of Aarhus
1984-1988

SKILL HIGHLIGHTS

- Systems development
- Application development
- High-performance software
- Computer graphics
- Domain analysis
- Software design
- Front-end development
- Digital signal processing

LANGUAGES

- C++
- DirectX 12
- C#/.NET
- JavaScript
- HTML/CSS
- Python
- Haxe
- PHP
- Unity
- Rust
- HLSL / GLSL

LANGUAGES

English	Fluent
Danish	Fluent

CONTACT

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Morten Hanehøj

Freelance Software Engineer



ABOUT ME

I am a very experienced software engineer with a broad track-record ranging from robotics and industrial software tools, over front-end platforms, to game engines and computer graphics.

I love computer programs; not just to create new ones, but also to take a deep dive into existing codebases with a long history. I have an excellent ability to apprehend large existing systems and understand where to add value.

I have a solid mathematical background and am skilled at working with complex applications, for instance with complex data processing or a high level of abstraction.

One of my strongest skills is optimization. I have had many projects with a focus on performance from speeding a signal processing algorithm up with a factor four to moving an entire PC-based computer game into a web browser.

I have had many roles as software architect and software designer and fully appreciate the balance between solid software practices and the time and price constraints imposed on any software project.

I see myself as a very kind person and a good listener, and although I have my own opinion on most topics related to software development, I enjoy embracing a different point of view and create solutions that are true to the strategy and style of an existing system.

Alongside my work as an independent software contractor, I am a co-founder of a computer games studio, Componium, where I have been a main contributor to the design of our in-house programming language and to the development of a new type of game-engine specialized in real-time content generation.

EXPERIENCE

Hanehoj Consulting

Contract Software Engineer 2006 – Present

- Software Engineer
Mar 2024
Created a 3D ReactJS component to wrap a gemstone visualizer.
- Software Engineer
Nov 2024 – Dec 2024
Developed an AI-based real-time image tracking system in Python.
- Software Engineer
Sep 2023 – Nov 2023
Added a set of new features to make a 3D learning applications ready for the international market.
- Software Platform Architect
Aug 2017 – Dec 2022
Architect and lead developer on three versions of a larger software platform to create 3D learning applications.

- **Lead Application Developer**
May 2013 – June 2017
Lead developer on several learning applications released both as web and tablet applications.
- **Software Platform Engineer**
Sep 2010 – Oct 2013
Designed and developed two small platforms in Haxe, Javascript, HTML, and CSS to create 2D cognitive learning applications.
- **Software Engineer**
Jan 2010 – Aug 2010
Performed a survey on video recording technologies (software libraries) both for C++ desktop applications and for Web applications.
- **Application Developer**
Nov 2006 – Dec 2008
Developed an application in C++ to measure and report the performance while a trainee performs CPR on a manikin.
- **Test-suite Engineer**
Apr 2006 – Aug 2006
Updated a test-suite in C++ to test a set of new requirements.

Componium

CEO and Co-Founder

2017 – Present

- **Game Engine Developer**
Jan 2022 – Present
Developed core tools for run-time procedural content generation, especially the generation of 3D content.
- **Game Engine Developer**
Dec 2020 – Dec 2022 (Part-time)
Developed a core game engine specialized for run-time procedural content generation.
- **Programming Language Designer**
Feb 2017 – Aug 2020 (Part-time)
Designed a proprietary high-performance programming language (like C++) specialized for game engines and procedural content generation (cross-compiled to C++).

Earlier employments:

- **Software Engineer at Weibel Scientific, Allerød**
Jun 2005 – Dec 2005
Developed a graph tool to show large amounts of spectral data in real-time. (C#/.NET)
- **Software Architect at Foss Analytical, Hillerød**
Aug 2002 – May 2005
Designed and prototyped a new software platform to create front-ends for analytical machines (C#/.NET).
- **CEO and Founder at NovaMind ApS, Copenhagen**
Jun 1999 – Sep 2002
Designed and participated in the development of a system to create 3D models from video footage (C++).
- **Software Engineer at NCR Systems Engineering, Copenhagen**
Jun 1993 – Dec 1996
Participation in X/Open working groups to form a Unix standard.
Diagnosed non-compliances in the NCR Unix kernel and utilities (C++).

Sergeant at the Danish Armed Forces

Aug 1988 – Jan 1990

9 month education and 9 month served as sergeant.

- **Contract Software Engineer at DEMWA Instruments, Aarhus**

Jan 1988 – Jun 1988

Developed software for a power regulator for a three-phase AC motor in assembler.

Skills

	Level	Latest use	Years of experience
Role			
Software Engineer	Expert	2025	31
Software Architect	Expert	2025	19
Team lead	Proficient	2022	15
Scrum Master	Beginner	2022	3
Area			
Web-applications (front-end)	Proficient	2023	14
Web-applications (back-end)	Competent	2024	4
PC applications	Expert	2025	25
Mobile apps	Competent	2018	4
VR applications	Beginner	2020	2
Middleware (libraries/platforms)	Expert	2025	26
Programming language development	Expert	2024	12
Languages			
C++	Expert	2025	23
C	Proficient	1999	4
C#	Proficient	2022	16
Javascript	Proficient	2022	8
Typescript	Competent	2013	1
Python	Proficient	2024	4
Haxe	Expert	2022	16
Rust	Beginner	2019	1
Visual Basic	Competent	2002	4
PHP	Competent	2017	4
GLSL	Proficient	2024	6
HLSL	Expert	2025	12
Shell	Proficient	2022	17
Prolog	Beginner	1993	1
ActionScript	Beginner	2006	1
Lisp	Beginner	1992	3
Haskell	Beginner	2005	2
Assembler	Competent	2010	10
Matlab	Competent	2005	4
LabView	Competent	2018	2
OS			
Windows	Expert	2025	31
Linux	Competent	2024	5
MacOS	Beginner	2012	3
iOS	Beginner	2016	2
Android	Beginner	2016	2
Unix	Competent	1995	5
Embedded	Competent	2020	4

	Level	Latest use	Years of experience
Backend			
AWS	Beginner	2025	3
Docker	Competent	2025	1
Docker Compose	Competent	2025	1
Kubernetes	Beginner	2025	1
RabbitMQ	Beginner	2024	1
Redis	Beginner	2024	1
Valkey	Competent	2024	1
REST	Proficient	2025	3
SOAP	Competent	2008	2
Sockets	Proficient	2017	8
TCP	Proficient	2017	8
UDP	Proficient	2017	8
Frontend			
HTML5	Proficient	2025	16
CSS	Proficient	2025	16
AJAX	Proficient	2018	6
WebSockets	Proficient	2022	4
Bootstrap	Competent	2016	2
React.js	Competent	2025	3
Express	Competent	2023	3
Grafana	Beginner	2024	1
Middleware			
Programming language design	Expert	2022	12
Compiler development	Expert	2022	10
UI framework design and development	Expert	2025	18
Game engine design and development	Expert	2025	12
Procedural content generation	Expert	2025	20
Computer graphics	Expert	2025	24
Shader programming	Expert	2025	15
Signal processing	Proficient	2008	12
Data pipelines	Proficient	2024	6
Flow-oriented programming	Expert	2025	18
Image processing	Proficient	2002	6
OpenGL	Proficient	2010	4
DirectX 9-11	Proficient	2016	12
DirectX 12	Expert	2025	8
Win32	Proficient	2025	24
OpenCV	Competent	2024	3
Application Frameworks			
Unity	Competent	2021	3
OpenFL	Competent	2016	3
.Net WPF	Beginner	2016	2
Qt	Beginner	2012	2
MFC	Competent	2006	4

	Level	Latest use	Years of experience
Tools			
Visual Studio	Proficient	2025	22
VS Code	Proficient	2025	7
Git	Proficient	2025	8
Mercurial	Competent	2016	7
Subversion	Competent	2009	4
Jenkins	Competent	2023	3
Github	Proficient	2025	8
Gitlab	Competent	2024	1
PIX	Proficient	2024	4
Methods			
CI	Expert	2025	6
CD	Proficient	2024	6
TDD	Proficient	2025	8
Gitflow	Proficient	2024	4
Agile	Proficient	2024	8
Scrum	Proficient	2023	5
Kanban	Proficient	2023	5
ISO/IEC 5055	Competent	2022	1
Software patterns	Expert	2024	21
OOD	Expert	2025	28
OOP	Expert	2025	28
SOA	Proficient	2025	12
Data formats and bases			
XML	Proficient	2016	14
JSON	Proficient	2024	16
YAML	Proficient	2016	3
TOML	Competent	2024	2
SQL	Proficient	2016	6
MySQL	Competent	2016	8
SQLite	Competent	2016	6

Skill levels: Beginner, Competent, Proficient, Expert