

EDUCATION

Master of Computer
Science and Mathematics
Oxford University
2013-2014

B.Sc. in Computer Science
and Mathematics
Oxford University
2010-2013

SKILL HIGHLIGHTS

- Computer Graphics
- Application development
- Engine development
- UI development
- Software design
- Computational geometry
- Front-end development

CODING

- C++
- C# / .NET
- Haxe
- TypeScript
- JavaScript
- HTML5/CSS
- DirectX
- WebGL

LANGUAGES

English	Fluent
Danish	Fluent
German	C1

CONTACT

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Pernille Hanehøj

Freelance Software Engineer



ABOUT ME

I am a senior software developer with a master’s degree in Computer Science from Oxford University and 11 years of work-experience.

I combine a mathematical and logical mindset with an innate creative and visual aptitude. My skillset ranges from designing healthy and robust systems architecture in the core of engines and platforms, to Computer Graphics and 3D rendering. I have thorough experience with performance improvement and memory management in high-requirement environments, and with setting up responsive and accessible user interfaces.

I am passionate about writing software that delivers high value by being robust and easy to maintain, and that allows for simple handovers, with easy-to-read code and clear documentation. I always bring an enthusiastic, openminded and sincere attitude to any project.

Alongside my work as a software contractor, I have been managing the business side of a company for 7 years, which has given me a broader appreciation for the skills that interface with software development, and a clearer view of how to deliver in a way that supports business needs.

EXPERIENCE

Hanehoj Consulting

Contract Software Engineer

2018 – present

NOTABLE PROJECTS:

- Designed a web-plugin to generate and render an interactive 3D model of gemstones for a retailer’s website
Jan 2025 – Mar 2025
- Helped prepare an application product line for worldwide scaling. We designed and developed a templating system to make it quick and easy to configure a whole suite of individual versions of the application in question.
Sep 2023 – Nov 2023
- Designed and developed a UI semantics engine which made it possible to add accessibility support (ARIA) to browser applications in an easy way for screen reader support and WCAG compliance.
Dec 2021 – Mar 2023
- Helped implement the user interface for an e-learning application of a medical patient simulation
Nov 2019 – Jun 2020
- Helped develop the 2D layout system of a platform to set up the UI of browser applications
May 2019 – Jun 2019
- Improved business logic performance and robustness of a medical patient simulation
Nov 2018 – Dec 2018
- Core development of a microservice-based platform designed to create 3D cognitive learning applications.
May 2018 – Sep 2018

Componium

Co-Founder, Senior Software Engineer

2017 – present

- 3D Game Engine Developer
Mar 2023 – Present
Designed and developed a system for procedural level-design and mesh-generation of complex 3D worlds.
- Core Game Engine Developer
Jul 2020 – Feb 2022
Implemented core parts of a game engine in C++, including 3D geometry and triangulation support, memory management, camera movements, audio, rendering pipeline and integration with DirectX
- Programming language designer and developer
Feb 2017 – Oct 2019
Co-designed and implemented two programming languages that work together: one high-performance imperative language, and another functional language for code generation of the first language.

Mekadeon

Software Engineer

2016 – 2017

- Developed back-end in PHP and front-end in Javascript and HTML for a web application to register members of several choirs.

WheelRight

Software Engineer

2014 – 2016

- Worked on Machine Learning algorithms in C# and Matlab to predict tyre pressures of vehicles based on sensory input.
 - Helped integrate and expand on a Computer Vision system to recognise and read number plates of vehicles in motion.
 - Designed and implemented a tool to monitor the output log of a complex multithreaded application and determine faulty events and states
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Skills

(Skill levels: Beginner, Competent, Proficient, Expert)

	Level	Latest use	Years of experience
Role			
Software Engineer	Expert	2025	11
Software Architect	Proficient	2025	6
Area			
Web-applications (front-end)	Proficient	2023	5
Web-applications (back-end)	Competent	2024	3
PC applications	Proficient	2025	8
Mobile apps	Beginner	2016	2
Middleware (libraries/platform)	Expert	2025	10
Programming language development	Expert	2024	7
Multithreading / Scalability	Proficient	2024	9
Performance optimisation	Proficient	2025	8
Machine Learning	Competent	2016	3
Neural Networks	Competent	2016	3
Languages			
C++	Expert	2025	9
C# / .NET	Proficient	2023	4
Haxe	Expert	2023	8
TypeScript	Proficient	2025	3
JavaScript	Proficient	2023	6
Python	Competent	2025	2
Matlab	Competent	2016	3
Java	Competent	2014	3
Swift	Competent	2016	2
HLSL	Competent	2024	2
GLSL	Competent	2025	1
Haskell	Beginner	2013	2
SQL	Competent	2024	3
XML	Proficient	2022	4
JSON	Proficient	2025	5
Frontend			
HTML5	Proficient	2024	7
CSS	Proficient	2024	5
ARIA / WCAG	Proficient	2024	4
WebSockets	Competent	2023	2
React.js	Beginner	2025	1
AngularJS	Beginner	2025	1
Bootstrap	Beginner	2017	1
Backend			
Databases	Competent	2020	3
Docker	Beginner	2025	1
AWS	Beginner	2025	1
REST	Beginner	2025	1
TCP	Competent	2023	2
MySQL	Competent	2020	2

	Level	Latest use	Years of experience
Computer Graphics			
DirectX 12	Proficient	2024	4
DirectX 11	Beginner	2022	1
WebGL	Proficient	2025	2
OpenGL	Competent	2025	1
Shader programming (GLSL / HLSL)	Competent	2024	2
Procedural mesh generation	Expert	2025	5
Middleware			
Compiler development	Expert	2024	6
Domain specific languages	Expert	2025	8
Microservices	Proficient	2023	5
UI framework design and development	Expert	2024	7
Game engine design and development	Expert	2025	6
Procedural content generation	Expert	2025	5
Data pipelines	Competent	2024	3
Image processing	Competent	2025	4
XAudio2	Competent	2024	1
Tools			
Visual Studio	Proficient	2025	8
Visual Studio Code	Proficient	2025	9
Sublime Text	Competent	2021	3
.NET WPF	Competent	2016	2
Unity	Beginner	2023	1
Git	Proficient	2025	8
GitHub	Competent	2025	6
Bitbucket	Competent	2023	4
Mercurial	Beginner	2013	1
Subversion	Beginner	2016	2
TortoiseHg	Beginner	2013	2
Jenkins	Beginner	2021	2
PIX	Competent	2025	2
Jira/Confluence	Proficient	2023	4
Trello	Expert	2025	8
Todoist	Proficient	2025	4
Methods			
CI	Proficient	2024	5
TDD	Competent	2023	4
Agile	Proficient	2025	8
Scrum	Proficient	2025	5
Kanban	Proficient	2024	4
Software Patterns	Expert	2025	11
OOD	Expert	2025	11
OOP	Expert	2025	11

(Skill levels: Beginner, Competent, Proficient, Expert)