Can Karka

CV

Education

2019–Present	**Computer Science**, *Heinrich-Heine-University*, Düsseldorf.
2015–Present	**Programming in a team**, *GHSi*, Gelsenkirchen.
	Computer course, where we learn to work with large teams and how to design large architectures.
2011–2019	**A-Levels**, *Carl-Humann Gymnasium*, Essen.

Experience

2021–Present **Lead developer of the HighLo-Engine**.
The HighLo-Engine is a cross-platform 3D Game engine.

Detailed achievements:
- Own shading language based on SPIR-V shading language format (which is based on GLSL)
- Own entity component system implementation with C++ templates
- SIMD and SSE math operations
- quaternion rotations
- Vulkan and OpenGL support (DX11, DX12 and Metal are planned features)
- Windows support (Linux, MacOS, iOS and Android are planned platforms)
- Fast-String optimization, implemented like in the C++ standard library
- PBR implementation, based on a publication from Epic Games about PBR in Unreal Engine 4.
- Forward+ Scene Renderer (we planned to write a deferred renderer and a combination of both renderers, to keep the feature of transparent surfaces)
- Own implementation of a shared pointer, which introduces reference counting, as well as own implementations of Weak and Unique references
- Own implementation of a linear memory allocator, which is used as a frame allocator, as well as a dynamic allocator.
- Own implementation of a platform dependent file system
- Own implementation of a FileSystemPath, like std::filesystem::path

2023–Present	**C++ graphics developer**, Elgato, Mönchengladbach. C++ graphics development with HLSL and C++.
2022–2023	**Python backend developer**, CGI, Düsseldorf. Python backend development with Django.
2021–2022	**PHP backend developer & Dev-Ops Engineer**, Duplexmedia GmbH, Düsseldorf. PHP backend development with Laravel and wrote deployment and automation scripts in bash and for Jenkins.
2020–2020	**Project lead**, Rewaco Spezialfahrzeuge GmbH, Lindlar. C++ prototype development of a digital speedometer for trikes.
2019–2021	**Web developer**, 31M Design- and Web agency, Essen. Web development and frontend design with WordPress.

Awards

2023	Won the Hack4Pott hackathon - In the yearly hackathon initiated by ThyssenKrupp I won the first price, by writing an image analysis prototype to detect whether a camera lens is dirty or clean.
2022	Gold medal in iGEM competition - participated with the team of university Düsseldorf, with the project CosMIC

Internships

2016	Mauve in Essen - Tower-power coding course in PHP
2016	Punch power train in belgium - Electrical racing car development (wiring and development of a component in C)

Computer skills

Programming languages	Assembly (C64, 32-Bit Assembly), C, C++, C#, java, PHP, Python, Bash, javascript, Lua, Julia, Typescript
3D Software	Cinema 4D, Maya, Blender (basic knowledge), PTGui, Boujou, Unity, Unreal Engine, FlaxEngine, Substance Painter and Designer,
Other software	LaTeX, Photoshop, Illustrator, After Effects, Premiere Pro, Word, Excel, Powerpoint, Linux, Microsoft Windows
Other skills	html, CSS, SCSS, MySQL, MariaDB, Docker, Windows AD
Frameworks and libraries	Laravel, Symfony, Angular, React, OpenCV, OpenSSL, RapidJSON, RapidXML, YamlCpp, gtest, stb_image, stb_truetype, Mono, glm, SPIR–V, GLFW
rendering apis	Vulkan, OpenGL

Languages

German	**Mothertongue**	
English	**Intermediate**	*Conversationally fluent*
Turkish	**Basic**	

Interests

- Programming
- Keyboard
- driving with the longboard

References

- My Github profile
- My Website
- LinkedIn

Projects

- HighLo-Engine
- CamVision
- CosMIC
- Monochrome
- TabPorter
- ThePapageiBot