Walid Chtioui

Software Engineer

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in *walid-chtioui*
 walcht
[*resume in German*](#)

Professional Experience

Automotive Software Engineer

04/2023 – 04/2025 | **AR-HUD Software Engineer**, *CARIAD - Volkswagen AG*,
C++ | Python | TS/JS | Lua | CMake | SomeIP | NDS | DeckGL | Protobuf | GIS
Worked with the AR-HUD team to build tools that helped in identifying and addressing AR-HUD-related issues for Audi/Porsche car models. [Audi AR-HUD showcase video.](#)

- Built a highly-portable, web-based 3D visualization tool to replay and analyze dumped car data which allowed the AR-HUD team to analyze data from a multitude of sensors (GNSS, ADAS, LD, NDS-based navigation data, etc.) against global satellite imagery.

- Used said visualization tool to write PoCs which helped in identifying edge cases and writing better requirements.

- Helped AR-HUD providers by providing documented C++ usage-examples on how to efficiently use certain services/interfaces.

- Contributed to identifying and solving issues related with certain AR-HUD functionalities. E.g., Audi's global drone positioning improvements.

- Contributed to writing requirements about navigation-related functionalities.

- Contributed in identifying issues with AR-HUD providers' C++ source code base.

- Worked within a highly interdisciplinary team involving software engineers, product managers, and test engineers.

Master Thesis

Title | *Direct Volume Rendering of Large Volumetric Datasets in Immersive Environments*
Supervisors | Prof. Dr. Christoph Heinzl, Alexander Gall
[thesis source code](#)

Projects

02/2023 – Present | **NeoVim Unity IDE**, [source code](#),
C# | Lua | Mono | IPC | IP Sockets | DAP | LSP
A set of projects to provide Visual-Studio-like experience for Unity development using NeoVim on Linux and Windows (with WSL2 support) under permissive licenses (MIT). Project includes subprojects: [com.walcht.ide.neovim](#), [lsp-tcp-socket-adapter](#), and [unity-dap](#).

12/2024 – Present | **Unity TextureSubPlugin**, [source code](#),
C++ | C# | CMake | Vulkan | Unity3D
Native plugin for using low-level Vulkan API using C++ within the Unity Game Engine. Useful for circumventing Unity's Texture2D/3D 2GBs size limitation.

04/2024 – Present | **Chunked Volumetric DataSet (CVDS)**, [source code](#),
Python | OpenCV | DICOM
Offline CT/MRI datasets converter for out-of-core visualization of very large volumetric datasets (i.e., hundreds of GBs).

10/2025 – Present	**LSP TCP Socket Adapter**, source code, `C#	IP Sockets	WSL2	Github Actions` TCP socket adapter for Language Servers (LS) that do not provide a TCP socket endpoint.
06/2025 – Present	**IP Sockets Network Programming Guide**, guide link, `C	IP Sockets` A brief guide into modern network programming using IP sockets on Linux.

Education

10/2022 – 07/2025	**M.Sc. Computer Science**, *University of Passau*, Passau Pursued a double Master's degree in Computer Science.
09/2020 – 07/2025	**Engineering Diploma**, *National School of Computer Science*, Tunis, *Top 4%* Relevant coursework: Software Development, Operating Systems, Software Design Methodology
09/2018 – 06/2020	**Preparatory Institute for Engineering Studies**, *Tunis*, *Top 7%* Relevant coursework: Analysis, Linear Algebra, Physics, Control Theory, Probability

Computer Skills

Prog. Languages	C++, Python, C#, TS/JS, C, Lua, GLSL, HLSL
Technologies	Unity3D, .NET (dotnet), Git, Protobuf, Docker, DeckGL, D3.js, Three.js
Operating Systems	Linux (Ubuntu), Android Automotive, AOSP
Standards	DICOM, AUTOSAR, NDS, C++20
APIs	Vulkan, OpenGL Core, OpenGL ES
GUIs	Qt, QML, Dear ImGui, tkinter
Management Tools	Jira, DOORS, Confluence
Miscellaneous	Blender, GIS, IP Sockets, Qemu, VirtualBox

Languages

English	Fluent, C1
French	Fluent, C1
German	Beginner-intermediate, B1
Arabic	Fluent, Native

Passau, January 10, 2026