

Walid Chtiouui

Software Engineer

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⌚ walcht
resume in German: walcht/walid_chtioui_lebenslauf.pdf

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.

- 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

repo: walcht/com.walcht.ctvisualizer

Projects

- 02/2023 – Present **NeoVim Unity IDE**, walcht/neovim-unity, 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: walcht/com.walcht.ide.neovim, walcht/LSP-TCP-socket-adapter, and walcht/unity-dap.
- 12/2024 – Present **Unity TextureSubPlugin**, walcht/TextureSubPlugin, 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)**, walcht/cvds, 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	Language Server Protocol TCP Socket Adapter , walcht/LSP-TCP-socket-adapter , TCP socket adapter for Language Servers (LS) that do not provide a TCP socket endpoint.	C# IP Sockets WSL2 Github Actions
06/2025 – Present	IP Sockets Network Programming Guide , walcht/guides/unixs-sockets.html , A brief guide into modern network programming using IP sockets on Linux.	C IP Sockets

Education

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