Tony Wasserka

Low-level Software Engineer

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☎ *(censored)*
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🏠 *neobrain.github.io*

Professional Experience

Nov 2016 – Apr 2018
Software Design Engineer at **Imagination Technologies**, United Kingdom
Worked on the Vulkan driver for PowerVR graphics chips, turning the prototype into a production-ready driver. Identified and fixed issues throughout various components of the driver stack including hardware design flaws. Redesigned the synchronisation subsystem. Some of exposure to shader compiler, firmware, and simulator code.

Selection of Personal Projects

May 2014 – Nov 2015
Citra (Co-founder), `https://citra-emu.org`
An emulator for the Nintendo 3DS handheld game console.
Designed and implemented the GPU emulation core from scratch, featuring a software implementation of OpenGL ES 1.1 and many PICA200-unique rendering features. Set up initial project infrastructure (source repository, issue tracker, developer documentation) and defined the developer workflow.

Apr 2010 – Sep 2014
Dolphin (Core contributor), `https://dolphin-emu.org`
An emulator for the Nintendo GameCube/Wii game consoles.
Maintained the GPU emulation subsystem. Implemented a Direct3D 11 rendering engine. Fixed emulation issues across the entire game library. Improved overall software quality by establishing code reviews and introducing a unit test framework.
Managed two major version releases.

Nov 2007 – Aug 2010
Wine (Contributor), `https://winehq.org`
A compatibility layer to run Windows applications on Linux and other OSs.
Initiated support for the Direct3D9 extension library (D3DX9) and implemented image loading, text drawing, and 3D mesh rendering features as part of *Google Summer of Code 2009*.

Skills

Computer Technologies

Languages	Proficient in C, C++, Haskell, ARM assembly, LaTeX, awk Basic knowledge of Python, Rust, Bash
Tools	Visual Studio, GDB, Git, Subversion, Perforce, Make, CMake, Doxygen, radare2
Libraries	STL, POSIX, Qt, OpenGL, Direct3D, Vulkan, SDL, Boost (e.g. Spirit, MPL, Hana, Range)
Knowledge	C++ metaprogramming, mathematics, 3D graphics, reverse-engineering, Linux

Spoken Languages

German	Native speaker
English	Fluent

Conference Talks

May 2018 **C++Now:** Generative Programming & Declarative Interfaces: Emulating the 3DS

Jun 2018 **NDC Oslo:** Type-safety in Low-level Programming: Modern C++ in Emulators

Education

Oct 2010 - Apr 2016
Student at *Friedrich-Alexander-Universität Erlangen-Nürnberg*
Practical teaching experience
Master of Science with Honors in Physics