

Tony Wasserka

Systems Programmer

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Berlin

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📄 neobrain.github.io

Professional Experience

- May 2018 – **Independent Software Engineer**, Germany
Now Development of the third-party emulator Mikage for the *Nintendo 3DS* system.
Various conference talks on advanced C++ development in systems programming.
- Sep 2018 – **Freelance Consultant**, at **GSP Sprachtechnologie GmbH**, Berlin
Dec 2018 Supported development of the train information software *FIS* with focus on the back office communication component. Debugged software errors, implemented functionality as per specification, and integrated the component into the internal testing framework.
- Nov 2016 – **Software Design Engineer** at **Imagination Technologies**, United Kingdom
Apr 2018 Worked on the Vulkan driver for PowerVR graphics chips across 3 release cycles. Identified and fixed issues throughout various components of the driver stack including hardware design flaws. Implemented API features such as *Clip Distance* or *Indirect Draws* according to Khronos specifications. Redesigned the synchronisation subsystem. Some exposure to shader compiler, firmware, and simulator code.

Selection of Personal Projects

- May 2014 – **Citra** (Co-founder), <https://citra-emu.org>
Nov 2015 *An emulator for the Nintendo 3DS handheld game console.*
Designed and implemented the GPU emulation core from scratch, featuring a software implementation (OpenGL ES 1.1 with PICA200-unique rendering features) and a Qt-based graphical debugging interface. Selected and set up initial project infrastructure (source repository, issue tracker, developer documentation) and defined the developer workflow.
- Apr 2010 – **Dolphin** (Contributor), <https://dolphin-emu.org>
Sep 2014 *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 – **Wine** (Contributor), <https://winehq.org>
Aug 2010 *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*.

Conference Talks

- May 2018 **C++Now, NDC Oslo, CppCon:**
– Sep 2018 „Generative Programming & Declarative Interfaces: Emulating the Nintendo 3DS“
Sep 2018 **CppCon, Meeting C++, C++ on Sea:**
– Feb 2019 „Teaching Old Compilers New Tricks: Transpiling C++17 to C++11“
Sep 2019 **CppCon:**
„Reading Binary Data with Style: A Serialization Framework for C++17 “

Skills

Computer Technologies

Languages	Proficient in C, C++, Haskell, LaTeX, awk Basic knowledge of Python, Scala, Rust, Bash, Assembler
Tools	Visual Studio, GDB, Git, Subversion, Perforce, Make, CMake, Doxygen, radare2, Docker
Libraries	STL, POSIX, Qt, LLVM, OpenGL, Direct3D, Vulkan, SDL, Boost
Platforms	Linux, Android, ARM, PowerPC, ESP32, Arduino

Spoken Languages

German	Native speaker
English	Fluent

Education

Oct 2010 –	Student at <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i>
Apr 2016	Practical teaching experience Master of Science with Honors in Physics