Tony Wasserka

Systems Programmer

(censored)
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Professional Experience

May 2018 – Now
Independent Software Engineer, Germany
Development of the third-party emulator Mikage for the *Nintendo 3DS* system.
Various conference talks on advanced C++ development in systems programming.

Sep 2018 – Dec 2018
Freelance Consultant, at **GSP Sprachtechnologie GmbH**, Berlin
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 – Apr 2018
Software Design Engineer at **Imagination Technologies**, United Kingdom
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 – 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 (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 – Sep 2014
Dolphin (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*.

Conference Talks

May 2018 – Sep 2018
C++Now, NDC Oslo, CppCon:
„Generative Programming & Declarative Interfaces: Emulating the Nintendo 3DS"

Sep 2018 – Feb 2019
CppCon, Meeting C++, C++ on Sea:
„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 – Apr 2016	Student at *Friedrich-Alexander-Universität Erlangen-Nürnberg*
	Practical teaching experience
	Master of Science with Honors in Physics