Christian Ofenberg — Résumé

Contact Information

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Personal Information

Born February 27th, 1982
German citizen

Research Interests

Realtime computer graphics, parallel computing, cross-platform development, build systems, flexible and extensible software architecture

Professional Experience

Software developer at weltenbauer. Software Entwicklung GmbH **July 2024 – Now**

- Concrete projects: Firefighting Simulator: Ignite (`https://weltenbauer-se.com/en/referenzen/firefighting-simulator-ignite-2/`, `https://www.firefighting-simulator.com/`), Virtual Factory (`https://weltenbauer-se.com/en/referenzen/virtual-factory-2/`), Project MATHILDA (`https://weltenbauer-se.com/en/referenzen/project-mathilda/`)

Senior software developer at Promotion Software GmbH **September 2012 – June 2024**

- Lead in-house technology developer of the Quadriga Simulation Framework (QSF): Engine, graphics, tools and support for gameplay programing, artists and quality assurance
- Part of QSF was the conception and realization of a Qt based cooperative online editor which enabled the level designers to work together on EMERGENCY 5 maps at one and the same time, shipped as part of the EMERGENCY 5 modding SDK (`https://github.com/16tons/emergency5_sdk`)
- Technical coordination (conception, reviews, acceptance) during the EMERGENCY 5 development phase of up to 14 internal and external software developers
- Concrete projects: EMERGENCY 5, EMERGENCY 2016, EMERGENCY 2017, EMERGENCY 20 (`https://store.steampowered.com/app/735280/EMERGENCY_20/`), TEAMWORK research project (`https://www.teamworkprojekt.de/`), non-public research and client projects using AR (HoloLens) and VR (Oculus Rift and HTC Vive), free-to-play EMERGENCY (`https://store.steampowered.com/app/850170/EMERGENCY/`) using Unreal Engine 5 and custom C++ game servers

benntec Systemtechnik GmbH **August 2008 – August 2009**

- Six months internship semester, continued afterwards as a working student
- Attended meetings at Rheinmetall Defence Electronics (RDE) regarding 3D technologies
- Collaborated with the team and clients, identified requirements and presented realistic solutions
- Worked on the PixelLight based Compudent 3D dental patient advisory software
- Created a Java 3D port of PixelLight and provided technical assistance. The developed system was used in a simulator for fire fighting on board ships.
- Participated in the development of a PixelLight based tram-simulator prototype
- Supported the PixelLight based interactive Oerlikon product presentation with configuration and real-time 3D scenarios

Happy-Grafix Gbr **March 2002 – August 2003**

- Worked as a programmer on the commercial game project *The Second Evolution* (cancelled)
- The *Vulpine Vision* engine was used

Private Projects

Unrimp - Free open-source 3D rendering project **June 2012 – January 2022**

- Project for personal fun and to be able to keep my graphics programming skills up-to-date
- Used to prototype a material and shader blueprint system as well as other technologies which enabled me to bring EMERGENCY 5 in the EMERGENCY 2016 edition from Direct3D 9 to Direct3D 11 while having limited development resources available to get the migration done in time

PixelLight - Free open-source 3D application framework **September 2002 – August 2012**

- One of the two lead developers
- Worked on basic data structures up to the C++ based Autodesk 3ds Max exporter
- Wrote documentation and supported the users of the technology

`http://www.ablazespace.de` **1995 – 2002**

- Created open-source freeware games as a hobby

Software Development

Primarily:

- C++, Unreal Engine 4 & 5, OpenGL, Direct3D 9-11, GLSL, HLSL, Windows, Qt, Visual Studio, Subversion, Git, OOP and design patterns, Sentry for crash management, Steamworks

Further worked with:

- C, Java, C#, Pascal, Amiga Basic, Assembler, CMake, Linux, macOS, Android (C API), C++ plugin development for Autodesk 3ds Max, Direct3D 12, Vulkan, OpenGL ES 3.0, OpenCL, Boost, Doxygen, Nintendo Switch (UE5), Sony PlayStation 5 (UE5), PlayFab, Microsoft Azure, Jenkins together with Windows batch script and PowerShell script for e.g. automatic continuous delivery and the project management tool Hansoft to create tasks etc.

During my work on the PixelLight project, I wrote plugins for:

- FMOD, FMODEx, OpenAL, OpenGL and OpenGL ES 2.0, DirectX, Qt, Lua, Python, V8 JavaScript, AngelScript, MySQL, PostgreSQL, SQLite, Newton Game Dynamics, ODE, PhysX, Assimp, libRocket and SPARK

Some of them as proof of concept. During my master thesis, I added volume rendering as a plugin.

Education

University of Applied Sciences, Würzburg, Germany

- Master of Science (MSc) in information systems **October 2010 –June 2012**
- Bachelor of Engineering (B. Eng.) in computer science **October 2006 – September 2010**

Languages

- German: Native
- English: Fluent

Personal Interests

- Software development related research in general and graphics in particular
- Sci-Fi/fantasy literature and video-games
- Hiking and jogging as well as other sport to relax