

Resume

Stefan Buschmann

Dr. rer. nat.

Diplom Informatik (Computer Science)

Tel.: +49 30 69203884

Homepage

www.stefan-buschmann.de

E-Mail

stefan@stefan-buschmann.de



Personal Information

Academic Degree

Dr. rer. nat. (IT Systems Engineering)
Diplom Informatik (Computer Science)

Birthday

22.05.1979

Residence

Berlin

Languages

German (native)

English (fluent)

Japanese (beginner)

Resume

Professional Interests

Software engineering, programming languages, compilers, scripting

Computer graphics, visualization, and interaction

Development Skills

Languages C++(11/14/17), JavaScript/TypeScript, node.js, Rust

3D development using OpenGL 3/4, WebGL, GLSL, Open-Source 3D engines

Cross-Platform development for Linux, Windows, and macOS (Qt5, QML, Win32, X11)

Embedded-Linux development (Sailfish OS, Raspberry Pi, Maemo5/N900)

Project management using CMake, Git, and Subversion

Web development using node.js/express, Rust/Rocket, HTML/JavaScript/CSS

Other Skills

Software engineering with UML, design patterns

LaTeX, LaTeX Beamer, linux server administration

References

- 2019 – present Senior Software Engineer for CG Internals GmbH. Projects include C++, OpenGL/WebGL, computer graphics middleware systems, as well as web-backend systems based on nodejs/express framework.
- 2015 - present Co-Founder of the CG Internals GmbH. Software Development and Consulting: Cross-platform software development, 3D Computer Graphics, and Visualization.
- 2019 Research assistant at Universität Rostock, department for ship design. Design and implementation of a software architecture for an interactive 3D ship design software.
- 2018 - 2019 Contract work and senior software engineer for Seerene GmbH, Potsdam. Development of a tool based on LLVM/Clang for the automatic processing and analysis of C++ code bases.
- 2011 - 2018 Research and teaching assistant at the Hasso Plattner Institute, University of Potsdam, Computer Graphics Systems department. Main research topics: Visualization of spatio-temporal data, 3D geo-visualization, and real-time rendering techniques.
- 2008 - 2010 Development of an interactive 3D product presentation tool (computer aided product presentation) based on the PixelLight 3D engine for benntec Systemtechnik GmbH.
- 2008 - 2009 Consulting and support for several projects based on the PixelLight 3D engine for benntec Systemtechnik GmbH: dental visualization software, interactive 3D tram simulation.
- 2008 - 2009 Development of an interactive 3D e-learning tool („fire fighting“) for benntec Systemtechnik GmbH. Implementation based on Java3D, the PixelLight 3ds Max exporter and a basic Java3D-port of the PixelLight engine.
- 2004 - 2008 Contract work based on the PixelLight 3D engine:
- „Interactive bridge“ for Sadler Imageworks.
- „Submarine bridge“ for benntec Systemtechnik GmbH.
- „HDRI-Viewer“ for Sachform Technology
- 2000 - 2002 Lead-Programmer for the pre-production prototype of „The Second Evolution“, a 3D action adventure by Happy-Grafix GbR, based on the "Vulpine Vision Engine" (later: Trinigy Vision Engine).

References (Open-Source)

- 2015 - present Design and development of an open-source computer graphics middleware based on OpenGL, containing several independent libraries for different levels of abstraction.
(<https://github.com/cginternals/glbinding>)
(<https://github.com/cginternals/globjects>)
(<https://github.com/cginternals/gloperate>)
(<https://github.com/cginternals/qmltoolbox>)
- 2015 - present Design and development of a set of cross-platform C++(11) libraries, which contains reusable components for reflection, properties, property UIs (based on Qt5/Qml), signal/slot, and scripting language integrations.
(<https://github.com/cginternals/cppexpose>)
(<https://github.com/cginternals/cppassist>)
(<https://github.com/cginternals/cpplocate>)
(<https://github.com/cginternals/cppfs>)
- 2013 - present Design and development of the cross-platform build-system and project template „cmake-init“, based on CMake.
(<https://github.com/cginternals/cmake-init>)
- 2013 3D model viewer „cgsee“, developed mainly in the context of seminars and lectures for the computer science bachelor program - project initiation and mentor for students.
(<https://github.com/hpicgs/cgsee>)
- 2002 - 2010 Design and development of the cross-platform 3D engine and application framework „PixelLight“, based on C++ and OpenGL - project lead and development.
(<https://www.pixellight.org>)

Education

- December 2019 Received doctorate degree (Dr. rer. nat.) in „IT systems engineering“. Thesis title: „A Software Framework for GPU-based Geo-Temporal Visualization Techniques“.
- November 2007 Diploma in Computer Science („Informatik“) Technische Universität Braunschweig
- 2007 Diploma thesis "Concept and implementation of a software architecture for the development of systems for interactive spatial exploration of medical image data based on modern input devices" at the "Institute for Medical Informatics" at TU-Braunschweig
- 2004 – 2005 Student assistant at the „Institute for Computer Graphics“ at TU Braunschweig. Topics: interactive rendering, mobile devices, and generative modelling.
- 2003 Student research project: „Interactive simulation of shift register state machines“.
- 2000 Enrollment at TU Braunschweig in the computer science diploma program (Diplomstudiengang „Informatik“)