Resume

Stefan Buschmann
Dr. rer. nat.
Diplom Informatik (Computer Science)

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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), Python, JavaScript/TypeScript, node.js, Rust

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

Cross-Plattform 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

2020 – present	Software Engineer / Build System Engineer (C/C++, Python, CMake, Conan) at Robert Bosch GmbH, Autonomous Driving Group.
2019 – 2020	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 - 2020	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“)