

Joel Schumacher

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Short Profile

My portfolio documents 50+ personal projects I have built over the last 15 years, including many game jam games, a few larger games, small game/graphics engines, editors, and numerous other tools and libraries:

<https://joelschumacher.de/projects>

It shows that I have been highly motivated to build a diverse range of things for a long period of time. I do not back away from problems that seem too large or too difficult, but I am intrigued by them and I take them on with persistence and curiosity. I have always carried this attitude into my professional work as well.

Work Experience

CM4all GmbH / IONOS SE

Germany

Staff Software Engineer

11/2024–Present

- Work on internal backend services for a large shared web hosting platform (authentication, internal APIs, account/resource lifecycle) in C++20
- Implement prototypes and internal tooling/services in C++20 and Python for service integration and operational workflows
- Contribute features and changes to open-source and in-house components of the hosting stack (including SSH and reverse-proxy services)
- Support production web hosting operations, troubleshooting, and service reliability

DATATRONiQ GmbH

Germany

Senior Developer

03/2024–10/2024

- Developed Linux daemons in C++20 to collect signal data from industrial PLCs
- Integrated proprietary vendor APIs and open-source libraries, including open62541 (OPC UA) and libplctag (Omron and Rockwell PLCs)

Ericsson GmbH

Germany

Developer

02/2019–12/2023

- Developed and maintained a Diameter Signaling Controller (a router for signaling in mobile networks) using C++ on Linux
- Developed customer and developer tooling using Python
- Maintained a large legacy code base and fixed numerous bugs in a distributed, highly multi-threaded application while regularly using tools like gdb, strace, tcpdump, etc.
- Added support for Diameter over TLS using OpenSSL
- Initiated and led migration to C++11: Evaluated feasibility of adopting C++11 features, ported source code and offered guidance on modern usage of C++
- Ported application to Kubernetes:
 - Part of the initial team that led the migration and laid the groundwork
 - Replaced proprietary components for metrics, inter-process communication, databases, configuration management, etc. with technologies like Prometheus, PostgreSQL, REST (HTTP)

Institute for Man-Machine Interaction

RWTH Aachen University

Student Assistant

04/2016–03/2018

Developed a microservice web framework based on Flask and gRPC in Python

Institute for Software & Tools for Computational Engineering

RWTH Aachen University

Teaching Assistant

10/2013–03/2014

Taught “Introduction to Programming” exercise classes for computational engineering and physics students (C++)

Education

RWTH Aachen University

Completed 39 credits towards Master of Science, Physics
Focus of Study: Condensed Matter Theory

Germany

10/2016–04/2018

RWTH Aachen University

Bachelor of Science, Physics

Bachelor's thesis: *Symmetry Breaking and Transition to Chaos in Binary and Rate Networks* at the Institute for Computational and Systems Neuroscience & Theoretical Neuroscience at the Forschungszentrum Jülich

Germany

10/2011–09/2016

Technical Focus

Domains: Linux systems programming, game engine & tools development

Programming Languages: C++, Python, Lua

APIs: Linux/POSIX, OpenGL/GLSL

Languages

German: native

English: fluent