

Max Schurig

Software engineer and entrepreneur building scalable, user-focused web applications and business tools. Experienced in cloud-native architectures, real-time collaboration, and complex planning systems.

Currently leading quebi GmbH, developing modern B2B software with React Router, PostgreSQL, Cloudflare Workers, and collaborative frameworks. Combines hands-on full-stack development, product ownership, and scalable system design to deliver reliable solutions.

For a richer experience, visit my profile at <https://quebi.de/members/max-schurig>

EXPERIENCE

Founder & Managing Director

quebi GmbH

Oct 2025 – Present in Bayrischzell

Founder and hands-on software developer building innovative business tools and web applications, with a focus on B2B software products and scalable web services.

Key contributions / focus:

- Leading the development of web-based software tools, ERPs, and contract development projects, handling both strategic and technical responsibilities
- Built a scalable, cloud-based WYSIWYG editor for scientific writing (marktex.app) with live collaboration using Lexical, Yjs, WebSockets, and Durable Objects, including cloud-based LaTeX compilation
- Implemented a modern, fully cloud-native architecture using React Router, PostgreSQL/Drizzle, Auth0, and Cloudflare (Workers/D1/R2/Containers/Queues) with CI/CD pipelines
- Managing a small founding team, sharing responsibilities across development, client interactions, and business strategy
- Developing a smart POS software for cellphone stores that recommends plans and hardware based on customer needs while optimizing for shop goals
- Focused on building user-centric, highly reliable software with scalability on cloud PaaS

React Router

PostgreSQL/Drizzle

Auth0

Cloudflare Workers/D1/R2/Queues/Containers

Yjs

WebSockets

CI/CD (GitHub Actions)

Software Engineer

Sunny Systems GmbH

Feb 2024 – Present in Munich

Full-stack engineer responsible for the development, maintenance, and evolution of multiple mission-critical internal and client-facing applications in a small agile team.

Key contributions:

- Took full ownership of the rail planning tool (formerly a freelance project), maintaining and extending its complex real-time scheduling system for multi-user operational use
- Developed and maintained a client/project/order management tool using React, Laravel, and MySQL, transitioning it from legacy PHP to a modern full-stack architecture and improving operational reliability
- Contributed to the design and ongoing development of a cloud-hosted ERP platform for real estate agencies, including React frontend, Go backend, CI/CD pipelines, and collaboration features for hundreds of expected users
- Participated actively in architectural and design decisions across all projects, including performance optimization, real-time updates, and automated notifications
- Coordinated closely with team members in a flat agile setup, ensuring smooth delivery of new features and rapid response to issues
- Directly liaised with clients and management, presenting features, gathering requirements, and providing accurate development time estimates
- Maintained long-term business relationships through consistent, reliable delivery and proactive communication

React

TypeScript

Go

PostgreSQL/MySQL

WebSockets

Docker

CI/CD (GitHub Actions)

Cloud & On-Premise Deployment

Software Engineer (Freelancer)

RailAdventure GmbH

Jun 2021 – Jan 2024 in Munich

Freelance software engineer responsible for initiating, specifying, and delivering a custom, mission-critical planning system for rail operations.

Key contributions:

- Initiated and pitched the replacement of a business-critical Excel-based disposition workflow with a custom software solution
- Led requirements discovery with disposition, maintenance, and sales teams to design a domain-specific planning and resource management system
- Designed and implemented a complex real-time web application for rail scheduling, resource allocation, and maintenance planning
- Built a graphical planning interface with advanced drag-and-drop interactions, conflict detection, and constraint enforcement
- Implemented live multi-user updates via WebSockets, ensuring a single source of truth for 24/7 operational use
- Introduced role-based access control, SSO, audit logging, and export functionality to meet operational and compliance needs
- Scaled development by coordinating a small team of developers while retaining architectural and product ownership
- Deployed and operated the system on-premise
- Rolled out the application through user training and onboarding, enabling a smooth transition for a critical operational change

React

TypeScript

PostgreSQL

WebSockets

Konva.js

GitHub Actions

On-Premise Deployment

Project Manager & Digital Transformation Officer

Nelhiebel Elektrotechnik GmbH

Aug 2019 – Aug 2023 in Munich

Started as a Working Student and progressed to Project Manager and Digital Transformation Officer, leading client projects and company-wide process digitization in an electrical engineering firm focused on e-mobility infrastructure.

Key contributions:

- Led end-to-end execution of e-mobility infrastructure projects, coordinating internal teams, contractors, and external stakeholders
- Managed parallel short-cycle projects, ensuring on-time delivery under tight execution windows
- Designed and implemented digital project management workflows, improving transparency, coordination, and execution speed
- Built a digital product catalog with automated quotation and project cost calculation, reducing manual effort and error rates
- Developed internal helper tools for standards-compliant electrical design, improving planning quality and consistency
- Introduced company-wide digital infrastructure (wiki, cloud storage, digital forms, data transfer interfaces) to replace fragmented manual processes
- Supported management in client acquisition, proposal preparation, and strategic repositioning toward larger-scale B2B projects

PDS (ERP)

Caneco (CAD)

JavaScript (Google Apps Script)

Google Cloud

EDUCATION

Promotion (Dr. rer. nat.)

Technische Universität München

Oct 2023 – Present in Munich

Thesis: High gradient problems in additive manufacturing (ongoing)

Key contributions / focus:

- Developing novel nonlinear finite element solvers and adaptive time integrators to improve performance, accuracy, and robustness for transient solutions of nonlinear PDEs
- Implemented custom solver frameworks in MATLAB, Python (NumPy, SciPy), and C++/CUDA, including GPU and multi-threaded optimizations
- Benchmarked and validated new approaches against established tools (FEniCSx, FreeFEM++, MFEM, MATLAB PDE Toolbox), achieving performance gains of several orders of magnitude on regular grids
- Created visualization pipelines for volumetric 3D data using MATLAB, Matplotlib, and ParaView
- Combining rigorous numerical methods with real-world application, bridging method development and additive manufacturing problem-solving
- Publications in preparation, including “Overcoming the artifact problem of high gradient cooling in additive manufacturing”

M.Sc. Mathematics in Science and Engineering

Technische Universität München

Oct 2018 – Oct 2020 in Munich

Thesis: Time simulation of High Thermal Gradient Problems in Additive Manufacturing (1.0)

B.Sc. Mathematik, NF: Experimentalphysik

Ludwig-Maximilians-Universität

Oct 2014 – Jul 2018 in Munich

Thesis: Maße auf topologischen Räumen (2.0)

PROJECTS

KlarTeX

Cloud-based WYSIWYG editor for scientific writing with live collaboration and LaTeX compilation.

Key features:

- Real-time collaborative editing using Yjs and WebSockets
- Cloud-based LaTeX compilation for scientific documents
- Scalable architecture on Cloudflare Workers and Durable Objects
- Modern, user-centric interface for academic writing

React Router

TypeScript

Lexical

Yjs

WebSockets

Cloudflare Workers

Durable Objects

Cellestial

Smart POS Software for cellphone stores, recommending plans/hardware to customers based on their needs while watching out for making deals and reaching goals of the shop owner.

Key features:

- Global scale using cloudflare workers/DO
- Highly cost efficient by almost scaling to zero cost during the night / on days off

TypeScript

Hono

Cloudflare Workers

React

Vite

FEM Solvers for Additive Manufacturing

Novel nonlinear finite element solvers and adaptive time integrators for transient nonlinear PDEs in additive manufacturing simulation.

Key features:

- Custom solver frameworks with GPU and multi-threaded optimizations
- Performance gains of several orders of magnitude compared to established tools (FenicsX, FreeFEM, MATLAB PDE Toolbox)
- Visualization for volumetric 3D data
- Bridging numerical method development with real-world additive manufacturing applications

MATLAB

Python

NumPy

SciPy

C++

CUDA

ParaView

Real Estate ERP

Cloud-hosted ERP platform for real estate agencies, designed for hundreds of users.

Key features:

- React frontend with Go backend
- CI/CD pipelines and automated deployments
- Collaboration features for agency teams
- Performance-optimized with real-time updates and automated notifications

React

Go

PostgreSQL

Docker

GitHub Actions

Rail Planning Tool

Mission-critical planning system for rail operations, replacing a business-critical Excel-based disposition workflow.

Key features:

- Real-time web application for rail scheduling, resource allocation, and maintenance planning
- Graphical planning interface with drag-and-drop interactions, conflict detection, and constraint enforcement
- Live multi-user updates via WebSockets
- Role-based access control, SSO, audit logging, and export functionality
- On-premise deployment with CI/CD pipelines

React

TypeScript

PostgreSQL

WebSockets

Konva.js

GitHub Actions

SKILLS

Languages

TypeScript Go Python C# C++ SQL

Frontend

React React Router Konva.js Three.js WebSockets Yjs Lexical

Backend & Infra

PostgreSQL Drizzle ORM MySQL Cloudflare Workers/Containers/Queues Cloudflare D1/R2 Auth0

DevOps & Tools

Git GitHub Actions Docker CI/CD On-Premise Deployment

Scientific Computing

MATLAB NumPy/SciPy CUDA Finite Element Methods Linear Algebra Integrators