



Philipp Riederer

Bare-Metal Cloud Architect

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Languages

German

English

Skills

Designing and implementing systems

Bridging the Gap between Managers and Developers

Motivating Teams

About Me

I design and build infrastructure that other people depend on — most recently a bare-metal GPU cloud, from the empty rack to the customer API. I like hard problems, pick up new paradigms quickly, and I am at my best when I turn an architecture into something a team can actually run.

I am a strong believer in "infrastructure as code" and I always drive in the direction of accountable and knowable infrastructure.

Links

GitHub.com/toelke

LinkedIn

Tech Blog

Experience

November 2025 – today

Senior System Architect @ Epilayer

Sovereign Cloud — Carve-Out

I set the technical direction of the platform after the Norwegian business was carved out: I write the architecture plans the team builds from (hybrid cloud and digital sovereignty, managed data services, IoT platform, carbon reporting) and steer the implementation across roughly 70 repositories. Hands-on, I extended the IaaS platform (managed Kubernetes, HPC clusters, load balancers, NFS filesystems), migrated all cluster ingress to Traefik without downtime, and built the new customer-facing stack: REST API (FastAPI), SPA (Vue 3/Quasar), Terraform provider, CSI driver and cloud-controller-manager in Go, and usage-based billing.

November 2021 – October 2025

Senior System Architect @ genesis cloud

GPU Cloud Provider — Backend

With a team of five I replaced the aging and inefficient OpenStack backend of a fleet of 500 nodes and 4000 GPUs serving hundreds of customers. We settled on KubeVirt for VM hosting with bespoke operators and controllers for networking and storage. We used completely ephemeral hosts based on Flatcar Linux, booted from network in a full GitOps setup — from the empty rack to a running customer VM with GPUs and Infiniband. Among others, we used these technologies: SPDK, Kopf, Flux, KubeVirt, Prometheus, Jaeger, VPP, Ceph, Infiniband, GitHub Actions, BDD

November 2020 – October 2021

Cloud Consultant @ tecRacer

Consultant Business — AWS

I helped enable customers to create or migrate their applications to AWS; although tecRacer has no explicit titles to convey seniority, I took a leadership role in all projects I was involved with. My focus was on migrations and data projects. Technologies: AWS Amplify, AWS Managed Airflow, dbt, Terraform, CloudFormation, Snowflake, Oracle SQL, NetApp Storage

2011 – 2020

Multiple Roles @ fos4X

Start Up — Founding until Exit

I grew with the company through the roles below.

November 2019 – October 2020

Lead Big Data Infrastructure Engineer @ fos4X

Start Up — Pivoting Business Line

I was leading the four-person team that supported the digital products of fos4X: terabytes of measurement data from real wind turbines, made accessible to our colleagues and customers, and the dashboards our customers used to gain insight into their assets. In this team I implemented a scrum-like workflow with great success.

May 2018 – November 2019

Head of Unified Software and Infrastructure @ fos4X

Start Up — Pivoting Business Line

I was leading the six-person team that enabled the data flow from the wind turbine to data analysts and customers: the complete edge-to-cloud infrastructure, from operating systems and processing frameworks on the edge to the frameworks and storage in the cloud.

December 2017 – May 2018

Head of Data Processing and Analytics @ fos4X

Start Up

I took over the data processing team of eight — my first experience in "real" leadership. During this time we decided to pivot a business line for digital products out of fos4X.

January 2016 – December 2017

Head of Series Integration Projects @ fos4X

Start Up

I was responsible for the OEM integration projects that brought our hardware into wind turbines, interfacing with sales and our developers on one side and the purchasers and developers of our customers on the other. The project management frameworks I designed were still in use at fos4X in 2020.

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Technical Skills

 Cluster Architecture ● ● ● ● ●

 Kubernetes since 2017

 500 nodes, 4000 GPUs

 Ceph, SPDK, KubeVirt, GitOps

 Infiniband + Ethernet

 Data Center Design ● ● ● ● ●

 Since 2021

 Non-Blocking Networks

 Cloud-native bare-metal

 Linux Administration ● ● ● ● ●

 Since 2005

 Python ● ● ● ● ●

 Since 2004

 Terraform ● ● ● ● ●

 Since 2018

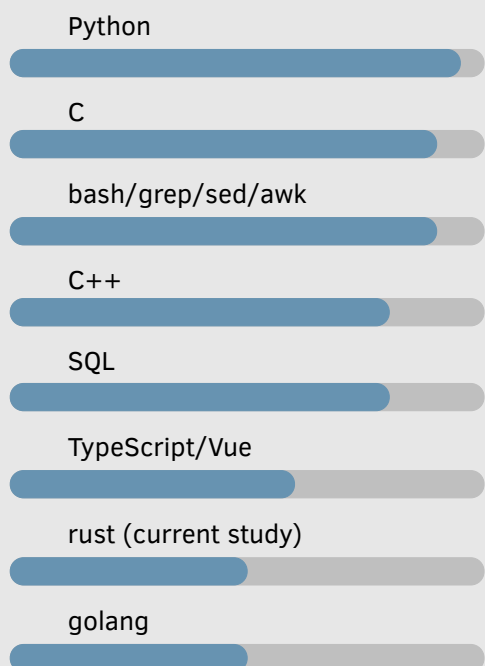
 Docker & Ansible ● ● ● ● ●

 Since 2016

Certifications

✓ Certified Kubernetes Administrator (2022, expired)

Programming



December 2011 – December 2015

Software Developer @ fos4X

Start Up

After finishing my thesis I kept working at fos4X, responsible for the firmware of our measurement devices: new measurement methods, two field busses (CAN and PROFINET), a webserver and IPv6 communication via the lwIP stack. I worked mostly in C, wrote development and debugging tools in Python and ran our Jenkins CI.

October 2009 – April 2012

Working Student System Administrator @ Multinet

Monitoring Solutions

I administered the small company network and supported the development of their monitoring solution with my Linux expertise.

January 2008 – June 2011

Working Student System Administrator @ TUM

I managed the chair network: Linux workstations, file-storage servers and the supervision of lab-courses. We controlled the configuration of servers and workstations with `fai` — this is where I discovered my passion for X-as-code.

August 2005 – December 2007

Civil Service and working student @ Deutsches Herzzentrum München

Hospital IT

My civil service (German: Zivildienst) in hospital IT reached from exchanging defective monitors and supporting doctors to re-configuring the firewall. As a working student afterwards I mostly did system administration "in the background", such as monitoring for workstations and printers.

Education

2009 – 2012

Master Computer Science Ø 1,3

TUM

Focus: Networking and low-level programming

Interdisciplinary Project

TUM / fos4X

Development of the firmware for a fiber optical measurement device

Master Thesis (Ø 1,0)

TUM / fos4X

Bootloader and hardware abstraction for the firmware of a fiber optical measurement device

2006 – 2009

Bachelor Computer Science

TUM

Bachelor Thesis (Ø 1,7)

TUM

Applicability of hardware transactional memory for high performance computing

2005

Abitur

Private Projects

since 2021

Setting up a multi-home Kubernetes cluster

Cluster consists of a Raspberry Pi, a (KVM)-slice of a dedicated Server and an VPS. Routing is done using BGP. The sites connect to each other using IPsec. Hosts a number of private websites and services like Nextcloud.

2019

Playing with BGP in Docker

<https://github.com/toelke/routing-experiments>

since 2006

Own Mail infrastructure

I host my own mail-servers without significant outage