



# Alen Rody (Mujkanović)

✉ [alenrody@gmail.com](mailto:alenrody@gmail.com)

☎ +41 78 730 75 32

🇨🇭 Swiss/Bosnian dual-national

📍 Zurich area (willing to relocate)

🌐 [qosmo.me](https://qosmo.me)

🔗 [github.com/qosmonaut](https://github.com/qosmonaut)

🌐 [linkedin.com/in/alenrody](https://linkedin.com/in/alenrody)

Engineer with 7+ years of experience in regulated medtech environments, from start-ups to multinationals. I design, build and maintain robust, full-stack software and data platforms aligned with business needs. My goal is to apply my systems engineering skills to create data-driven solutions that work for the benefit of patients and healthcare providers.

## Experience

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### Principal SW Engineer – Skaaltec/ETH RELab, Zürich

06.2024 – present

*SW architecture, fullstack development, IoT & cloud platforms, data strategy, regulatory compliance, branding*

Founding engineer in an early-stage ETH spin-off developing a neurorehabilitation system for stroke patients. Built and deployed IoT edge devices to partner clinics with Balena Cloud fleet management. Designed and built a proof-of-concept user platform and data pipeline. Created data strategy and ensured regulatory compliance of software products and patient data security. Set up development server, internal tooling, domains and web hosting with continuous deployment using Cloudflare Workers. Supervision of student projects and interns.

### Co-Founder – LoveLabs, Zürich

12.2022 – 09.2023

*Medical device regulations, operations management, business development, fundraising, web development*

Co-founded an association to promote expanded access to self-administered rapid diagnostic tests for STIs. Collected market data and performed comparative analysis of commercially available lateral flow devices. Developed go-to-market strategy analyzed product-market fit. Supported fundraising, branding and operations.

### Freelancer – Independent consulting, Zürich

09.2021 – 03.2022

*Tech consulting, embedded ML, physiological signal analysis, technical training*

Provided technical consulting for the design and development of a medical wearable. Set up an ML training pipeline and provided training to staff SW engineers. Created initial prototype implementation of an embedded ML algorithm for real-time analysis of cardiovascular and kinematic features.

### Software Engineer – Roche Diagnostics, Rotkreuz

06.2019 – 06.2021

*Google Cloud, GitLab CI/CD, Tensorflow, predictive analytics, IoT fleet management, requirements engineering*

Designed a digital twin solution and signal processing pipeline for predictive maintenance for the Cobas 5800/8800 PCR system. Developed and compared performance of multiple end-to-end prototypes, including development of IoT edge devices and cloud-based analysis and monitoring applications. Engaged stakeholders and mediated client, business and engineering requirements for product development.

### Software Developer – Skope Magnetic Resonance Technologies, Zürich

07.2015 – 05.2019

*Real-time signal processing, data visualization, user application development, DevOps, user support*

Supported initial development of novel magnetic field monitoring technology for MRI applications in an ETH spin-off. Expanded RT signal processing pipeline and visualization of field sensor data. Implemented control API and accompanying SDK for user application development. Set up DevOps process for acquisition application.

### Graduate Student Researcher – Harvard Medical School, Boston

04.2018 – 10.2018

*Mathematical modeling, convex optimization, MR pulse sequence design, cardiovascular DTI, in-vivo imaging*

Developed an optimization framework to generate asymmetric diffusion encoding gradient waveforms for high-resolution cardiovascular DTI. Implemented a proof-of-concept on a Siemens Connectome scanner.

## Education

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Studies with part-time employment (15h/week) in technical and teaching roles 2012 – 2018

### MSc Electrical Engineering & Information Technology – ETH Zürich

09.2015 – 11.2018

Biomedical engineering track

#### Research projects:

- Asymmetric Diffusion Encoding for High-Resolution MR-DTI
- Reconstruction Techniques for Free-breathing MR Elastography
- Real-time Gradient Impulse Response Function Harvesting [1]
- EXCITE Zurich – biomedical imaging summer school 2017

### BSc Electrical Engineering & Information Technology – ETH Zürich

09.2011 – 12.2016

Signal processing track

#### International experience:

- Chinese University of Hong Kong – exchange semester 2015/16
- Infineon Technologies – IAESTE internship 2015
- Beijing University – IARU summer school 2014
- EPF Lausanne – exchange semester 2013/14

## Skills

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### Tech Stack

*Expert:* Bash, Python (NumPy, SciPy), Docker, Balena Cloud

*Proficient:* C++, JavaScript, React, Django, GitHub Actions, GitLab CI/CD, Electron, PyQt

*Intermediate:* Google Cloud Platform, Kubernetes, PostgreSQL, Apache Kafka, AI integrations

*Novice:* Rust, TensorFlow, PyTorch, Scikit, CPLEX

### Engineering skills

*Expert:* IoT integration, scientific computing, real-time signal processing, scripting

*Proficient:* SW architecture, fullstack development, data processing, application development

*Intermediate:* cloud computing, DevOps, machine learning, database design, UI/UX design

*Novice:* mathematical optimization, AIOps, additive manufacturing

### Business skills

*Expert:* stakeholder management and engagement

*Proficient:* data governance, product owner, technical leadership, graphic design & branding

*Intermediate:* regulatory compliance, go-to-market strategies, solution scaling

*Novice:* fundraising, market analysis, business growth, manufacturing

### Language skills

German **C2**

English **C2**

Bosnian **C2**

French **C1**

Spanish **B2**

Portuguese **A2**

## Personal projects and passions

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- AI-assisted coding on mobile devices: building, testing and deploying on-the-go
- Facilitate the adoption of stray cats and dogs from Bosnia to families in Switzerland
- Built a trailer sauna from scratch during the COVID-19 lockdowns
- Experienced 9 months fulltime van life in Europe and Canada
- Initiated and co-created a camp at Nowhere, the largest regional Burning Man event in Europe
- Enjoy organizing events and cooking for large groups of people
- Immersive language learning through music, literature and travelling
- Rock climbing (multi-pitch, sports climbing) and bouldering
- Endurance sports: swimming, cycling, running, hiking, trail running
- Math/physics tutoring for Gymnasium and ETH entrance exams
- Circular economy initiatives and fighting food waste