

Daniel Matthias Roten

Curriculum Vitae



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Nationality: Swiss / US

Date of birth: 23.05.2003

Marital status: Married

Education

- **09/2023 – present:**
Bachelor of Science in Computer Science, Bern University of Applied Sciences (BFH), Biel, Switzerland. Specialization: Computer Perception & Virtual Reality.
- **08/2022 – 06/2023:**
Technical Vocational Baccalaureate (Berufsmatura), Berufsfachschule Oberwallis, Visp, Switzerland.
- **08/2018 – 07/2022:**
Polymechnik (Federal VET Diploma, EFZ), Lonza AG, Visp, Switzerland.

Work Experience

- **08/2018 – 07/2022:**
Polymechnik Apprentice (EFZ), Lonza AG, Visp, Switzerland. Mechanical manufacturing, CNC machining (Alphacam, Fanuc / Heidenhain controllers), maintenance and assembly in an industrial pharmaceutical environment.

Projects

- **Bachelor Thesis Saf3D:** Digital-twin pipeline for 3D reconstruction of a robot's environment on the AutoMate platform. Combines Gaussian Splatting (Brush) with COLMAP-based Structure-from-Motion. The resulting .ply splats are transferred via gRPC to the VRobot.
- **SintelVR:** First-person Unity game, developed during the Advanced 3D Applications module at BFH. The goal was a realistic animation of a 3D model following the player's movements.
- **BuggyVR:** First-person Unity game, developed during the Game Development module at BFH. Extension of an existing buggy game with VR functionality (OpenXR, Valve Index).
- **Personal Homelab:** Setup and operation of a self-hosted infrastructure on TrueNAS SCALE with Docker-based services (Nextcloud, Plex, game servers), exposed externally via Cloudflare Tunnel and Nginx Proxy Manager.

Technical Skills

- **Programming languages:** Python, Java, C#, C++, C, JavaScript
- **Computer Vision & 3D:** OpenCV, COLMAP, Gaussian Splatting
- **DevOps:** Git, GitLab CI/CD, Docker
- **Frameworks & Tools:** Android SDK, Unity, OpenGL, OpenXR, gRPC, REST
- **Databases:** SQLite
- **Other:** Linux, SCRUM, L^AT_EX, Office 365

Hobbies

- Drumming in the Musikgesellschaft Saffisch (Termen, since 2010)
- E-Sports (competitive team play / tournaments)

Languages

- German (native)
- English (fluent, B2 07/2020)