Sebastian **Reinhard**

AI Research Engineer · SAP-Certified Consultant · PhD in Machine Learning
Bridging complex science with production-grade enterprise solutions

About Me

Driven by challenges | Collaborative by nature | Relentless self-improvement

Personal Information

Name: Sebastian Reinhard
Nationality: German
Date of Birth: 11 May 1994

Specialisation

Machine Learning • Generative AI • LLMs • Python • SAP Data Integration • MLOps

Hobbies

Triathlon: Ironman World Championship 2024 / 1st Bundesliga

Interests

`LeetCode / Kaggle / Django / Open-source contributions`

Curriculum

2024–2025

IT Consultant
AI & Data Analytics · Remote

- Developed **SAP-data-powered RAG solutions**, connecting BW/4HANA views to LLM pipelines for natural-language querying of enterprise data.
- Built **production-ready ML systems**, including custom **SAC** JavaScript widgets for advanced analytics dashboards.
- Created an internal **SAPUI5/Fiori** learning app focused on **SAP certification** prep (question bank, spaced repetition, progress tracking), backed by ABAP OData.
- Implemented workstreams in **BW/4HANA conversion projects** for DAX clients, ensuring on-time, zero-downtime migrations; refactored customer **ABAP** and implemented migration-relevant ABAP (CRUD interfaces, mapping utilities).

2022–2025

Lead ML Engineer
AI Sports Analytics Platform · Remote

- Built a full-stack endurance-sports training platform with smart scheduling, AI-driven coaching, and Strava-synchronised performance dashboards.
- Implemented a **custom LangGraph agent** with Retrieval-Augmented Generation (OpenAI) that delivers personalised workout plans.
- Added support for **MCP**, shifting inference to the client and achieving a zero server-side compute-cost model.
- Developed modular micro-services (Python, FastAPI, **Django REST Framework**, PostgreSQL) and CI/CD pipelines, enabling rapid feature delivery and seamless integrations.

2023–2024

Postdoctoral Research Fellow
Generative AI for Scientific Imaging · Würzburg

Sauer Lab

- Lead author of the **AttentionAI** paper, introducing Transformer-based models that enhance spatial–temporal resolution in single-molecule localization microscopy.
- Designed end-to-end training pipeline (PyTorch + CUDA) enabling ~2× faster convergence on multi-GPU clusters.
- Coordinated cross-lab collaborations and mentored two MSc students on deep-learning techniques for scientific imaging.

2019-2023

PhD student
Data science · Würzburg

Sauer Lab

- Invented **ReCSAI**, combining compressed sensing with deep neural networks for super-resolution microscopy.
- Authored **16 peer-reviewed publications** with 372+ citations, including papers in *Nature Communications*.
- Developed GPU-accelerated image-processing pipelines that enabled real-time visualization of 3-D point clouds (>10 M points/s).

2016–2019

MSc
Nanostructure Engineering · Würzburg

- Master thesis: GPU-accelerated image-processing for nanoscale optical characterization.
- Specialized in image processing and optics.
- Coursework in operating systems, C++, CUDA, and OpenGL.

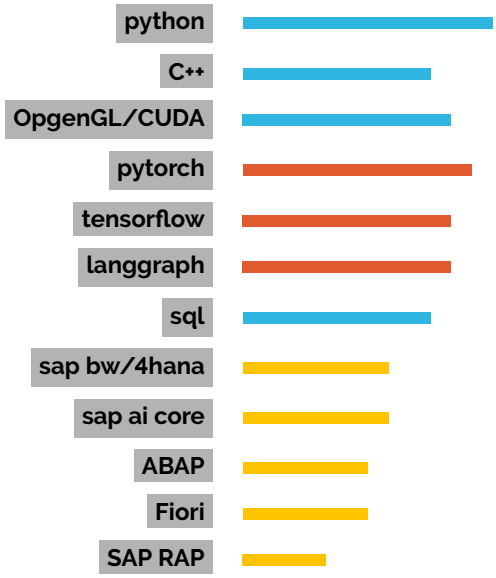
Degrees

2023 **Biophysics**
PhD (1.0) · Würzburg
Thesis: "Improving Super-Resolution Microscopy Data Reconstruction with Deep Learning"

2019 **Nanostructure Technology**
MSc (1.6) · Würzburg
Focus: Image Processing & Optics

2016 **Nanostructure Technology**
BSc (2.5) · Würzburg
Thesis: GPU-Accelerated Point-Cloud Rendering

Core Tech Stack



Certificates

2025 SAP Certified Associate – SAP Generative AI Developer (SAP)
2025 MCP Fundamentals (Hugging Face)
2025 Retrieval-Augmented Generation (RAG) and AI (Hugging Face)
2024 Pandas & Intermediate Machine Learning
2020 Computer Vision (1.0)

Community Involvement

Swimming Club Volunteer web developer
Triathlon coach

Languages

German	C2	Native
English	C1	● ● ● ○
French	A1	● ○ ○ ○

Publications (Subset)

2023 Reinhard et al. "ReCSAI: recursive compressed sensing artificial intelligence for confocal lifetime localization microscopy", in: *BMC Bioinformatics* (23/1)

2021 Trinks et al. "Subdiffraction-Resolution Fluorescence Imaging of Immunological Synapse Formation between NK Cells and A. Fumigatus by Expansion Microscopy", in: *Communications Biology* (4/1)

2020 Zwettler et al. "Tracking down the Molecular Architecture of the Synaptonemal Complex by Expansion Microscopy". in: *Nature Communications* (11/1).

2020 Zwettler et al. "Molecular Resolution Imaging by Post-Labeling Expansion Single-Molecule Localization Microscopy (Ex-SMLM)". in: *Nature Communications* (11/1).

2019 Reinhard et al. "Registration and Visualization of Correlative Super-Resolution Microscopy Data". in: *Biophysical Journal* (116/11).

Sebastian Reinhard Johann-Herrmann Str. 17 97078 Würzburg +49 177 4304830
sebastian.uj.reinhard@gmail.com