

Manuel Gerstner

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PROFILE

Software Engineer and Cloud Architect specializing in **data-intensive web systems, geospatial data processing, and AI-enabled platforms**. Proven experience designing scalable backend architectures, including geospatial data pipelines and standards-aligned APIs, across international development projects (GIZ, EU, CRS). Strong background in **Linux-based deployments, DevOps, and AI integration**, with a focus on interoperability, modular systems, and data-driven decision-making.

CORE COMPETENCIES

- Web Development: Spring Boot, Django, Ruby on Rails, REST APIs, modular backend architectures
- Geospatial Systems: Spatial data processing (e.g. shapefiles), PostGIS (applied/conceptual), geospatial data modeling
- Data & APIs: Interoperable API design, structured data systems, JSON/XML
- AI Integration: LLM APIs (Azure OpenAI), automated text generation, intelligent assistants
- Web GIS: Leaflet, map-based visualization concepts
- Standards: OGC (WMS, WFS, WMTS), interoperable service design
- Infrastructure: Linux, Docker, AWS, Terraform, CI/CD
- Version Control: Git (collaborative workflows, branching strategies)

PROFESSIONAL EXPERIENCE

Software Developer / Cloud Architect, FAKT GmbH / GOPA / GIZ / Bread for the World, (Project / Contract) - Germany **May '20 – present**

- Designed and implemented **data-driven web platforms and monitoring systems** (PostgreSQL) across multiple international development projects (Africa, Eastern Europe, ASEAN)
- Developed **geospatial data processing capabilities**, including ingestion and processing of spatial datasets (e.g. shapefiles)
- Built **data collection pipelines and mobile applications** enabling field data acquisition and synchronization
- Designed **interactive dashboards and analytics tools** supporting program monitoring and decision-making
- Implemented **modular backend architectures and APIs** for extensibility and interoperability
- Led **requirements engineering and product ownership**, coordinating distributed development teams
- Deployed and maintained applications in **Linux-based cloud environments**
- Developed and integrated an **AI-powered platform (OpenWebUI + Azure OpenAI)** for compliance workflows, enabling automated text generation and intelligent assistance

Software Developer / Cloud Architect, eeMobility GmbH, Munich, Germany

July '18 – May '20

- Designed and implemented a scalable microservices architecture with multiple PostgreSQL databases
- Developed API-driven backend systems emphasizing modularity and interoperability
- Migrated infrastructure to AWS (CloudFormation, ECS), improving scalability and reliability
- Contributed to building a high-performance platform in the electric mobility sector

IT-Consultant / Software Developer, Netlight Consulting, Munich, Germany

Feb '15 – May '18

- Developed backend systems and platforms for enterprise clients in distributed architectures
- Built and maintained microservices-based systems for mobility and digital platforms
- Led technical design and product ownership activities in agile teams
- Integrated external systems and services into high-volume production environments

Earlier Experience

- Software Developer, Payback GmbH (Working Student)
- Software Developer Intern, IBM (USA)

EDUCATION

Technical University of Munich

2012 - 2014

Master of Science, Information Systems

Technical University of Munich

2008 - 2012

Bachelor of Science, Information Systems

SELECTED TECHNICAL CONTRIBUTIONS

- **Geospatial Data Processing:** Backend workflows for ingestion and analysis of spatial datasets (e.g. shapefiles)
- **AI Integration:** Deployment of LLM-based systems (Azure OpenAI) for automated workflows and decision support
- **API Design:** Development of interoperable APIs aligned with structured data exchange principles (transferable to OGC services)
- **Modular Systems:** Design of extensible architectures supporting evolving requirements and plugin-like extensions

DOMAIN RELEVANCE

Experience working with **complex, domain-specific data systems** in international development contexts, including structured and geospatial datasets. Strong ability to adapt to **climate, environmental, and meteorological data systems**, with emphasis on interoperability and data-driven decision-making.

TECHNICAL STACK (SELECTED)

Java, Spring Boot, Python, Django, Ruby on Rails, PostgreSQL, SQL, AWS, Terraform, Docker, REST, Git, Linux, Elasticsearch, Node.js, React, Android (Kotlin)

CERTIFICATIONS

- IBM Certified Database Administrator
- IBM Certified Database Associate

LANGUAGES

- German, fluent, mother-tongue (C2)
- English, fluent (C1)
- French, advanced (B1)
- Portuguese, intermediate (A2)