Kasper Renhorn Berg

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EDUCATION

Bachelor of Science in Computer Science   Sep. 2022 – Jun. 2025
Malmö University   Malmö, Sweden
- Focus: Backend Software Development, Database Technology, Concurrent Programming, REST API Design.
- Specialization: AI & Machine Learning.

Studies in AI & Machine Learning (Civilingenjör)   Sep. 2020 – Jun. 2022
Blekinge Institute of Technology   Karlskrona, Sweden
- Completed coursework in Python Programming, Cloud Computing (Azure), Artificial Intelligence, Mathematical Statistics, and Calculus.

TECHNICAL SKILLS

Languages: Python, Go, Java, SQL, C#, TypeScript, JavaScript, Bash
Cloud & DevOps: Docker, GCP, Azure, GitHub Actions, Linux, CI/CD Pipelines, TCP/IP, Protobuf, OAuth
Data & AI: LangChain, RAG Systems, Vector Embeddings, ETL Pipelines, PostgreSQL, MySQL, MSSQL, Firestore
Frameworks: FastAPI, Spring Boot, Node.js, Next.js, React Native, Jest/Pytest/JUnit

WORK EXPERIENCE

Data & ML Engineer (Thesis Collaboration)   Jan. 2025 – Jun. 2025
SARSYS ASFT   Malmö, Sweden (Remote)
- Built a Python ETL pipeline to ingest and unify heterogeneous data from MSSQL & MySQL, processing 500k+ sensor logs.
- Condensed the dataset size by 90% by architecting cleaning scripts to purge duplicate and null rows.
- Engineered a time-series alignment algorithm to merge asynchronous weather data with irregular friction events.
- Developed a Hybrid LSTM-XGBoost architecture (Ensemble Learning), benchmarking performance to reveal critical target sparsity and identifying prerequisites for future ML initiatives.

Full Stack Developer (Internship)   Sep. 2024 – Jan. 2025
RENTALBUDDY   Malmö, Sweden (Remote)
- Took ownership of technical delivery for a 5-person intern team, organizing sprint workflows and guiding architectural decisions to deliver key milestones 2 months ahead of schedule.
- Built the core Node.js/TypeScript API using TDD, implementing custom aggregation logic for high-volume booking history.
- Unblocked the deployment pipeline by diagnosing data inconsistencies in the cloud mock database that bypassed TDD.

PROJECTS

AI-Enhanced Language Platform | Live Demo
- Engineered a JWT session manager with Refresh Token Rotation and HttpOnly cookies to prevent XSS and token leakage.
- Developed a Python orchestration script to drive LLM-driven content generation (Gemini) with strict JSON schemas.
- Architected a Serverless deployment on Google Cloud Run with automated CI/CD pipelines via GitHub Actions.
- Implemented a GraphQL API (FastAPI + SQLAlchemy) to decouple requirements and eliminate payload over-fetching.

Go Relay Server
- Engineered a stateless TCP relay server in Go, using Goroutines to asynchronously bridge traffic between Hosts and Clients.
- Integrated Protobuf for binary serialization, reducing payload overhead compared to JSON to optimize real-time performance.
- Validated stability by simulating 2,000+ concurrent clients via a Python script, verifying accurate delivery across 200 lobbies.

AI Portfolio Assistant | Live Demo
- Engineered an automated RAG data ingestion pipeline using GitHub Actions to sync a production pgvector database.
- Developed a Retrieval-Augmented Generation system using LangChain/Groq for context-aware search over portfolio data.
- Designed a robust system prompt architecture with anti-hallucination guardrails and a specific conversational persona.

Nutrition Price Calculator
- Reverse-engineered a major retailer's private API to automate extraction of 10,000+ product datasets with ethical rate-limiting.
- Architected a normalized SQLite database to warehouse inventory data for rapid product retrieval.
- Developed a nutritional analytics engine to calculate real-time cost ratios (e.g., highest protein-per-currency), and generated sorted datasets.

LANGUAGES

Swedish (Native), English (Fluent)