Max Blum

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Professional Experience

AHEAD AUTOMOTIVE GMBH | Hamburg, Germany | July 2023 – Present
Data Engineer - GenAI Systems & LLM Workflows

- Architected data collection pipeline curating 3M+ documents from automotive manufacturers for production RAG chatbot
- Migrated production system from Weaviate to serverless Elasticsearch deployment, reducing chatbot query latency by 3x and eliminating server capacity constraints for production scalability
- Built automated data processing system: web crawler (15,000+ sites) to data extraction to schema transformation to Weaviate vector database upload using Python
- Co-designed RAG system architecture transformation from agent-based to LLM tool calling, reducing latency by 67% (30s to 10s) and enabling controlled multi-tool execution across 5+ specialized tools
- Engineered comprehensive observability and logs analysis system using Arize Phoenix and OpenTelemetry in TypeScript/NestJS, tracking input/output, latency, tokens, sources, and tool calls across production workflows
- Developed evaluation framework measuring Macro Precision, Recall, F1, and Hitrate with automated metrics collection pipeline
- Deployed Apache Airflow infrastructure across dev/staging/production environments using Docker, maintaining data pipeline orchestration and ensuring data integrity across workflows

FREELANCER | Hamburg, Germany | June 2024 – Present
Prompt Engineering Coach

- Designed and delivered Prompt Engineering workshops on LLM optimization techniques for IT consultants

BEIERSDORF SHARED SERVICES GMBH | Hamburg, Germany | April 2021 – March 2023
Data Engineer - Working Student

- Built data annotation workflow for labeling training data to develop OCR model for automated PDF processing
- Automated AI-powered document processing pipeline achieving €1.5M annual cost savings
- Engineered Azure Data Factory pipelines transporting 4GB+ daily data across distributed systems for real-time business analytics at scale
- Engineered data models for real-time supply chain tracking and sustainability metrics optimization
- Developed data visualization dashboards tracking resource usage in production processes: consumption patterns and charge tracking

MERCEDES-BENZ GROUP | Stuttgart, Germany | December 2019 – June 2020
IT Project Management Intern

- Tracked 10+ KPIs across IT projects using HP ALM, improving progress visibility for management
- Developed training materials for 100+ team members on updated project management systems
- Consolidated tracking processes across 4 project managers, strengthening project structure and knowledge transfer

Education

Master of Science, Information Systems | University of Hamburg, Hamburg, Germany | November 2020 - June 2023
Focus: Databases, Data Mining, Distributed Systems, IT Security.

- **Thesis:** "Sustainability in the end-to-end supply chain: Providing new insights to reducing palm oil consumption in the personal care industry through data engineering"

Bachelor of Science, Business Administration | University of Bayreuth, Bayreuth, Germany | October 2015 - March 2020
Focus: Information Systems & Technology Management.

- **Thesis:** "How close to Failure? – Mapping the Effective Distance from Epidemiology on IT Portfolio Management"

Projects & Extracurricular Activities

Personio Raycast Extension | Open Source | 2024
Developed web-based TypeScript application for time tracking with Personio API integration. Built user interface for employee search, attendance data visualization, and automated workflows. 98+ Downloads.

TechLabs Hamburg - Board Member | Hamburg, Germany | October 2021 – Present
• Manage operations and organize technical education programs for 150+ participants annually
• Lead teams of 8+ people in coordinating semester-long data science, AI, and web development tracks
• Mentored Data Science group through machine learning project lifecycle

Microsoft Student Beta Ambassador | Hamburg, Germany | July 2021 – July 2023
• Collaborated with global tech community, hosting events and knowledge-sharing sessions

Skills

Languages: German (native), English (fluent)
Technologies: Python, SQL, TypeScript,PySpark, NestJS, RESTful APIs, GraphQL, Azure, AWS, Docker, ollama, LlamaIndex, Apache Airflow, Databricks, Apache Spark, PostgreSQL, MongoDB, Neo4j, Weaviate, Azure OpenAI API, Arize Phoenix, OpenTelemetry, Elasticsearch