Amin Skenderi

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Education

Technical University Berlin Expected Graduation: 2027
- B.Sc. Computer Engineering, 4th semester (on track to complete in 5 semesters)
- Relevant Coursework: Data Structures & Algorithms (Top 5%), Theoretical Computer Science (top score in class), Semiconductor Physics for Electrical Engineers (Top 10%), Signals and Systems (Top 5%)

Hannah-Arendt-Gymnasium Graduation Year: 2024
- Computer Science Award ("200€ for excellent performance")
- Final grade: 1.2 (German system); focus on Computer Science, Physics and Math

Experience

AI Engineer (Working Student) | Mercedes-Benz Tech Innovation GmbH 07.2026 – Present
- Developing an AI service that validates vehicle sales documents (e.g. purchase contracts) for back-office clerks, combining **Vision-LLM** OCR, LLM-based field extraction and system-data comparison to flag discrepancies
- Built a **DSPy** prompt optimization platform that compares production prompts to a baseline, optimizes them (e.g. BootstrapFewShot) and evaluates candidates on held-out data with production-identical parsing
- Ensured trustworthy results via per-document train/test splits, verified-only ground-truth labels and **MLflow** tracking of parameters, metrics and token/dollar costs; added a **Textual** TUI to launch and analyze runs
- Migrated a deprecated LLM, by benchmarking successor models on quality, latency and cost with an LLM regression test suite incl. **LLM-as-a-Judge**, switching the configuration and adding token/cost logging

Software Engineering Intern (C++) | Cybus GmbH 01.2026 – 06.2026
- Developed **C++** components for the Connectware IIoT platform, linking shop-floor machines to the cloud
- Implemented **OPC UA**, **MQTT** and **Modbus/TCP** connectors, normalizing heterogeneous device data into a unified data model
- Optimized multi-threaded message processing, reducing end-to-end latency for high-frequency sensor streams

Coding Trainer | CodingGiants GmbH 08.2023 – 01.2026
- Taught **Python** (algorithms, structured programming) to teenagers and **Scratch** fundamentals to children

Projects

LLM Document Analysis Pipeline | github.com/AmkoAmin/llm-doc-pipeline 2026
- Built a **Python FastAPI** backend answering natural-language questions over uploaded PDFs via a **RAG** pipeline (**LangChain**, **Claude**, **Voyage** embeddings, **FAISS**), containerized with **Docker**
- Hardened for public deployment: domain-scoped CORS, per-IP rate limiting, upload-size limits and auth fixes
- Validated correctness and reliability with an automated unit and integration test suite using **pytest**
- Designed a self-hosted setup: **GitHub Pages** frontend reaching the Dockerized API via **Cloudflare Tunnel**

Autonomous Robot with ROS 2 | github.com/AmkoAmin/ros2-autonomous-robot 2026
- Led a 3-person team building an autonomous robot with **C++** using **ROS 2** on a **Raspberry Pi** that localizes itself in a maze and navigates to arbitrary target cells
- Implemented grid-based localization, by detecting maze walls from **Lidar** data via Hough transform and matching observations against a known map, validated with a custom test harness
- Developed **Dijkstra** path planning and precise closed-loop motion control, by combining wheel-encoder odometry with P-controllers, within a modular **ROS 2** node architecture

Distributed HTTP Server & Chord DHT | github.com/AmkoAmin/chord-dht-server 2025
- Served thousands of concurrent connections on a single node, by building a custom HTTP server in **C** with low-level socket programming, manual request parsing, and memory safety verification using **Valgrind**
- Built a **Chord DHT** (consistent hashing, finger-table routing) for scalable resource discovery across nodes
- Delivered fault-tolerant task distribution via a **ZeroMQ**-based MapReduce-style system with retry logic

Skills

Programming/Scripting Languages: C, C++, Python, Java, MATLAB, MIPS-Assembler, SQL, Bash
Tools: Linux, Git, GitHub (CI/CD), Docker (Compose), Kubernetes (Helm), Datadog, uv, CMake, colcon, Azure, MySQL, Jira
Frameworks & Technologies: FastAPI, Flask, pytest, Textual, Kafka, ROS 2, MQTT, Valgrind, ZeroMQ, REST
AI & LLM: DSPy, MLflow, LLM Evaluation (LLM-as-a-Judge), OpenAI API, Anthropic API, LangChain/LangGraph, RAG pipelines, Agentic Workflows
Languages: German (Native/C2), English (Fluent/C1)