

Ahmed Mamdouh

SOFTWARE ENGINEER | BACKEND, FULL-STACK, APPLIED AI AND PERFORMANCE

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PROFESSIONAL PROFILE

Software engineer with experience across enterprise financial systems, industrial computer vision and machine learning, and customer-facing web and mobile products. Builds scalable, data-intensive software; improves latency and loading performance; modernizes legacy code and developer tooling; and works effectively from architecture discussion through implementation, testing, and delivery. M.Sc. in Artificial Intelligence with broad programming, cloud, and systems expertise.

CORE FOCUS: BACKEND AND ENTERPRISE SYSTEMS | FULL-STACK APPLICATIONS | AI / ML | PERFORMANCE OPTIMIZATION | CI/CD AND CLOUD

PROFESSIONAL EXPERIENCE

Software Developer (ABAP) | SAP Pioneer

Walldorf, Germany | 2024 - Present

- Develop parallel, scalable solutions for S/4HANA and Financial Products Subledger customers in complex enterprise environments.
- Use ABAP SQL and data-oriented design to implement high-performance queries and processing for financial applications.
- Contribute through design discussions, pair programming, reviews, presentations, and modernization of internal developer and quality tooling.

Working Student Developer - Computer Vision / Machine Learning | Primetals Technologies

Erlangen, Germany | 2023 - 2024

- Built and fine-tuned computer-vision models and robust pipelines for AI-assisted steel-mill applications.
- Reduced an existing solution's latency from about 1,000 ms to 2 ms - a 500x speedup - enabling real-time use.
- Extended reusable internal tooling and engineered efficient components for future industrial AI projects.

Junior Software Developer | Sequel Solutions

Cairo, Egypt | 2020 - 2021

- Delivered web and mobile features for a vacation-booking platform using JavaScript, React Native, Firebase, Docker, and AWS.
- Modernized legacy code for 30% faster loading, added backend promotion caching, and achieved a perfect Lighthouse score on a frontend application.

EDUCATION

M.Sc. Artificial Intelligence | FAU Erlangen-Nuremberg | Grade: 1.9 | 2022 - 2025

Deep learning, computer vision, NLP, generative AI, information visualization, and high-performance computing. Teaching Assistant for Artificial Intelligence II.

B.Sc. Computer Science and Engineering | German University in Cairo | Grade: 1.9 | 2016 - 2021

Software engineering, algorithms and data structures, DevOps, embedded systems, data engineering, cyber-physical systems, and AI. Student researcher and autonomous smart-lab team lead.

SELECTED ENGINEERING PROJECTS

Askier - Cross-platform real-time ASCII rendering application using C++, Qt 6, OpenCV, OpenCL, and TBB, with modular image-processing and parallel-compute components.

Investors Portal - Implemented policy-driven fee calculations and PDF contract generation, reducing manual work for investors and operations teams.

Eden / NoClip - C++ graphics-engine project focused on software architecture, performance, and developer-friendly interfaces.

MIPS Processor - Python implementation with an assembly-to-machine-code parser and simulations of registers, control logic, ALU, and memory.

TECHNICAL SKILLS

Programming: ABAP, Python, C++, Java, TypeScript / JavaScript, SQL, Kotlin, C, Rust, Go

Web and backend: React, React Native, Next.js, Django, Flask, REST APIs, Redis, Firebase, AWS

Engineering and platforms: scalable and parallel systems, performance profiling, automated testing, CI/CD, Docker, Linux, Git, Jenkins, Kubernetes, CMake

AI and data: PyTorch, TensorFlow, Keras, OpenCV, CUDA, NumPy, MLflow, computer vision, deep learning, NLP, generative AI, RAG, LangChain, LangGraph

Languages: Arabic (native), English (fluent), German (beginner)

SELECTED ACHIEVEMENTS

ACM-ICPC regional competition (2016 - 2018) | Catalyst Coding Competition (2019) | Google Code Jam (2020) | Google Foobar (2023)