ASHAR MAHMOOD

Full Stack Developer & LLM Engineer
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PROFESSIONAL SUMMARY

Full Stack Developer and LLM Engineer with freelance experience building SaaS applications, REST APIs and database integrations with React.js, Next.js, TypeScript, Node.js, MongoDB and PostgreSQL. Builds Generative AI applications in Python using RAG, QLoRA fine-tuning, function calling and AI agents. M.Sc. student in Computer & Systems Engineering at TU Ilmenau, seeking a Werkstudent position in software development and AI (up to 20 hours/week).

TECHNICAL SKILLS

AI & LLM: Python, OpenAI API, Hugging Face Transformers, LangChain, Gradio, RAG, embeddings, QLoRA fine-tuning, function calling, AI agents, prompt engineering
Frontend: React.js, Next.js, TypeScript, JavaScript (ES6+), Redux, HTML5, CSS3, SASS/SCSS, Tailwind CSS, Material UI
Backend: Node.js, Express.js, REST APIs, Socket.IO, WebSockets, WebRTC, Auth.js
Databases: PostgreSQL, MongoDB, Prisma, Mongoose, Database Design
DevOps & Tools: Docker, GitHub Actions, CI/CD, Git, GitHub, Vitest, npm, Vercel, Render

PROJECTS

LLM Engineering Portfolio: 8 Generative AI Applications | *Python*, *OpenAI API*, *Hugging Face*, *LangChain*, *Gradio* 2026

- Built a RAG knowledge assistant answering company questions from internal documents, and a multi-modal airline support agent with Gradio UI, function calling, text, audio and image.
- Fine-tuned an open-source LLM with QLoRA for product price prediction, benchmarked it against frontier models, and extended it into an autonomous multi-agent deal-finding system with notifications.
- Also built a web-scraping brochure generator, an audio-to-meeting-minutes tool and a Python-to-C++ code optimizer (up to 60,000x faster on benchmark code).

RechnungsPilot: SaaS Invoice Management Application | *Next.js*, *TypeScript*, *PostgreSQL*, *Prisma* 2026

- Built a SaaS invoicing workspace for German freelancers with authentication, customer and invoice workflows, VAT logic, PDF export and configurable numbering.
- Added XRechnung XML draft export, audit history, archive/restore, Vitest coverage, Docker setup and GitHub Actions CI/CD with cloud deployment.

SigmaGPT: AI-Powered Conversational Application | *React*, *Express.js*, *MongoDB*, *OpenAI API*

- Developed a full-stack chat app with authenticated and guest users, persistent threads with full conversation context and Markdown/code rendering.
- Integrated OpenAI function calling with structured JSON output; implemented AI-generated titles, rename/delete flows and responsive dark/light themes.

PROFESSIONAL EXPERIENCE

Full Stack Web Developer (Freelance) | Upwork May 2024 – Present

- Build SaaS web applications for clients with React.js, Next.js, TypeScript and Node.js, from frontend to backend.
- Develop REST APIs, integrate MongoDB and PostgreSQL databases with frontends, and handle debugging and deployment.

Digital Marketing Specialist (Freelance) | Fiverr May 2019 – Nov 2024

- Used web development skills to add Meta Pixel and Google tracking code to client websites.
- Managed Meta Ads for eCommerce clients: 19.31x ROAS and 17,470 leads at £1.17 CPL across 50+ orders.

Data Analyst Intern | Q-Lead Global Consultant, Islamabad Feb 2018 – May 2018

EDUCATION

M.Sc. Computer & Systems Engineering | Technische Universität Ilmenau, Germany Oct 2024 – Present

B.Sc. Software Engineering | COMSATS University Islamabad, Pakistan Sep 2015 – Mar 2019

CERTIFICATIONS & ACHIEVEMENTS

- Become an LLM Engineer in 8 Weeks: Generative AI, RAG, LoRA and AI Agents (Ed Donner), completed
- 3rd Position, COMSATS Projects & Career Expo 2018; recognized by IBM for innovation in Android development

CURRENT LEARNING

In progress: LLM Evals (Ragas, DeepEval) · AI Agents & MCP (LangGraph) · LLMOps (Langfuse) · AWS Bedrock & Docker

LANGUAGES

English: C1 (IELTS 7.0) | **German:** A2 (conversational)