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Siemens Energy

Mülheim an der Ruhr, North Rhine-Westphalia, Germany

Application: Generative AI Specialist

My background as an AI and backend engineer aligns directly with the technical demands of the Generative AI Specialist role at Siemens Energy. My work philosophy centers on system ownership, automation, and scalable execution, treating inefficiency as a structural failure. I am optimized for throughput, consistently building robust, production-ready systems that deliver measurable output.

- Agentic System Design and Orchestration: I specialize in building self-replacing agentic systems using LangGraph, LangChain, and LangSmith. My approach favors deterministic multi-agent workflows with explicit state control and memory orchestration, as demonstrated in my Research Assistant role at TU Braunschweig, where I built a supervisor agent coordinating five hierarchical teams for biomedical literature analysis. I have also applied this in a fully automated Reels generation system, reducing production time by 20x. I am aware of and have utilized the Model Context Protocol (MCP) in both my TU research assistant project and personal animated asset creation projects, ensuring standardized multi-agent context handling.
- RAG Pipelines and Data Management: I design and maintain RAG-based architectures, utilizing vector stores like Qdrant and FAISS, ensuring tight control over memory and pipeline flow. My work involves seamless integration with structured and unstructured data, focusing on modularity, testability, and production readiness. This includes developing full-stack agentic systems to reduce manual research load, implementing hybrid RRF-RAG, dynamic code execution, and memory checkpoints.
- Model Adaptation and Evaluation: I develop models using TensorFlow, PyTorch, and scikit-learn, integrating them into end-to-end pipelines without black-box reliance. My experience extends to evaluation and validation, utilizing tools like LangSmith and custom QA pipelines to ensure system performance and reliability. I am proficient in integrating and designing solutions compatible with advanced model techniques.
- Scalable Backend and DevOps: My backend engineering stack is centered on Python and FastAPI, with Postgres, Redis, and MongoDB for data storage. I implement Docker for containerization, Git for version control, and CI/CD pipelines for deployment. Systems are scaled via GCP with enforced uptime guarantees and reproducible environments, reflecting a commitment to long-term leverage and absolute control over execution environments.

My approach is binary: if a system does not scale, it is re-architected; if it does not generate recurring value without oversight, it is refined. This aligns with Siemens Energy's mission to develop future energy systems and drive the energy transition. I am confident my capabilities will contribute significantly to your team's objectives. Thank you for your time and consideration.

Warm regards,

Aditya Ghanashyam Ladawa