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Fraunhofer IPA

Application: Masterand AI-based data analysis to secure infotainment

My MSc in Data Science at TU Braunschweig and my focus on building scalable, autonomous AI and backend systems align directly with the Masterand position in AI-based data analysis at Fraunhofer IPA. My work philosophy centers on system ownership, automation, and scalable execution, treating inefficiency as a structural failure. I am driven to contribute to projects that demand deep technical fluency and a robust approach to problem-solving.

- My expertise in time series data analysis and machine learning, particularly with TensorFlow and PyTorch, directly addresses the analysis of torque-rotation angle curves. I have applied these frameworks to complex data challenges, such as harmonizing MRI scan sequences using CycleGAN and developing super-resolution pipelines with Real-ESRGAN, demonstrating proficiency in extracting insights from diverse data streams.
- My experience extends to signal processing and the creation of synthetic data. I developed advanced computer vision pipelines using OpenCV and FFmpeg for real-time video processing and autonomous feedback systems. Furthermore, my AI-Powered Reels Pipeline autonomously generates character-based content, involving the orchestration of tools like Selenium and Playwright to create synthetic media, directly applicable to generating and analyzing synthetic data sources.
- The objective of embedding solutions into a production environment resonates with my backend engineering philosophy. My stack, centered on Python, FastAPI, Docker, and CI/CD pipelines on GCP, ensures modularity, testability, and production readiness. I prioritize robust deployments over conceptual demonstrations, building systems designed for scalable, persistent execution with enforced uptime guarantees.
- My role as a Research Assistant at TU Braunschweig involved building a standalone agent-based AI assistant for biomedical literature, which required independent conception, planning, and implementation of complex multi-agent architectures. This experience, combined with my drive to build monetizable, passive-return systems, reflects a structured, independent work ethic essential for applied research.

My cognition is optimized for throughput, and I am committed to building durable systems that generate recurring value without oversight. I am confident my technical depth, execution-oriented mindset, and proactive approach to problem-solving will contribute significantly to your research in AI-based data analysis for infotainment security. I look forward to discussing how my capabilities can benefit Fraunhofer IPA.

Warm regards,

Aditya Ghanashyam Ladawa