

# Justin Lanfermann

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## Education

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**Bachelor of Science in Informatics** Expected Aug 2026  
*Technical University of Munich (TUM)* — GPA: 1.6 (German Scale, Top 8% of 625)  
**Relevant Coursework:** Algorithms & Data Structures, Software Engineering, Databases, Operating Systems & Distributed Systems, IT Security, Networking, Parallel Processing.

## Experience

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**Software Developer & System Administrator** (Working Student) Mar 2024 – Present  
*Westend61 GmbH*, Munich, Germany

- Designed and deployed containerized services and internal tools (Python/FastAPI, Groovy, Docker) to automate workflows and improve operational efficiency.
- Integrated multimodal AI for content/metadata enrichment within the ingestion workflow, substantially reducing manual processing effort while maintaining quality.
- Administered and secured office IT infrastructure (e.g., pfSense networking, access management, monitoring) and supported incident response to ensure stable operations.

**Academic Tutor, Fundamentals of Programming** Oct 2024 – Mar 2025  
*Technical University of Munich*, Munich, Germany

- Led weekly, hands-on tutorials for 30+ students in core Java, covering object-oriented programming, data structures, and algorithm design through practical coding exercises.
- Assisted in grading final exams and managed post-exam reviews, providing technical clarifications and direct feedback on student code to reinforce learning objectives and correctness.

**Academic Tutor, Operating Systems & System Software** (Incoming) Oct 2025 – Mar 2026  
*Technical University of Munich*, Munich, Germany

- Selected to lead weekly exercise sessions for systems programming in C on Linux, emphasizing clean code, testing, and safe concurrency.
- Will cover core topics: processes & threads, synchronization (mutexes, semaphores), scheduling, memory management, filesystems, and sockets.
- Will grade assignments, write sample solutions/tests, and coach debugging with GDB, delivering clear feedback and runbook-style guidance.

## Projects

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**BetterSurf – Resilient Real-Time Comparison Engine** [Project Blog](#)

*A highly available, distributed system to aggregate data from multiple unreliable, heterogeneous APIs.*

- Architected a fault-tolerant Python backend (FastAPI) to integrate 5 disparate APIs (SOAP, REST/CSV, HMAC-signed), using Pydantic for strict data validation and normalization against malformed inputs.
- Implemented Site Reliability Engineering (SRE) principles by engineering a self-healing system with Circuit Breaker and exponential backoff patterns to maintain availability during external service degradation.
- Deployed the containerized application stack (Docker, Nginx, Redis) on AWS EC2, streaming aggregated results in real-time to a Next.js/React frontend via WebSockets and achieving 93% test coverage.
- *Tech: Python, FastAPI, TypeScript, React, Next.js, AWS (EC2, CloudFront), Docker, Nginx, Redis, SRE.*

**PartyMap – Large-Scale Event Discovery Platform** [Project Blog](#)

*A serverless web application that processes and maps high-volume social media data into structured events.*

- Developed a scalable, real-time data pipeline on AWS (Lambda, S3, DynamoDB) to ingest and process over 100,000 social media posts, served globally via CloudFront CDN for low-latency user access.
- Engineered a multi-stage AI pipeline using OpenAI LLMs for NLP-based classification and AWS Rekognition for image analysis, transforming vast unstructured data into structured, queryable information.
- *Tech: Python, FastAPI, TypeScript, React, Next.js, AWS (Serverless, Lambda, DynamoDB, S3), NLP.*

**CVolve – AI-Powered Résumé Builder** [Project Blog](#)

*AI-native platform automating the generation and tailoring of résumés against job descriptions.*

- Designed a multi-agent AI system (Python/FastAPI) to automate résumé analysis, content generation, and critique, leveraging LLMs to strategically align user data with specific job requirements.
- *Tech: Python, FastAPI, TypeScript, React, Next.js, AWS (Serverless), Supabase, PostgreSQL, Azure OpenAI.*

**EuroMesh – Decentralized Crisis Communication App** [Project Blog](#)

*2nd place winner at the TUM.ai x Public Makers Hackathon for innovative GovTech solutions.*

- Led the architecture of a mobile-first, mesh-networked application for off-grid communication, enabling decentralized information sharing and coordination in environments without internet connectivity.
- *Tech: TypeScript, React, Gemini API, Vercel, Distributed Systems, Software Architecture, Rapid Prototyping.*

## Skills

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<b>Languages</b>	Python, Java, TypeScript, JavaScript, C, SQL, Groovy
<b>Frameworks &amp; Libs</b>	FastAPI, Next.js, React, Pandas, Pytest, Spring Boot, Django
<b>Cloud &amp; DevOps</b>	AWS (EC2, Lambda, S3, DynamoDB, CloudFront), Docker, Nginx, Redis, CI/CD, Serverless, Linux
<b>Systems &amp; Arch.</b>	Distributed Systems, Site Reliability Engineering (SRE), Networking, API Design, Software Architecture
<b>AI &amp; Machine Learning</b>	LLMs (OpenAI, Gemini), Natural Language Processing (NLP), RAG, Prompt Engineering, Computer Vision

## Awards & Activities

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- **Recipient, CHECK24 Generation Developer Stipend** (2025): Awarded for excellence in a competitive software engineering and system design challenge.
- **2nd Place Winner, TUM.ai x Public Makers Hackathon** (2025): Recognized for innovative GovTech solution.
- **Founder & Mentor, CS Study Community** (2023 – Present): Established and lead a peer-to-peer study community of 100+ students, organizing tutoring and exam preparation sessions for core computer science topics.
- **Languages:** German (Native), English (Fluent, C1), Spanish (Conversational, B1).