Axel Delakowski

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SKILLS

Programming: Python, C++, Java, JavaScript
Machine Learning/AI: OpenAI API, Mediapipe, Vertex AI, TensorFlow, PyTorch
Frameworks/Tools: Spring Boot, React, Docker, Google Cloud Platform, Git
Web/Databases: React TypeScript, Python FastAPI, SQL (MySQL, Azure SQL)

EXPERIENCE

Product Engineer (Software Focus)**, OrganOx**   December 2024 - Present
- Developing automated data ingestion and analysis pipelines using Python, replacing manual workflows with 10 validated command-line tools to ensure high-fidelity data processing for medical telemetry, accelerating project by 3 months
- Leading a rigorous software testing framework (Unit/Integration) to validate firmware packages, enforcing strict data integrity standards and accelerating the deployment of compliant production code.
- Optimizing liver support system control loop algorithms by refactoring legacy firmware tech debt and implementing rigorous validation protocols to ensure precise, real-time physiological response handling.

Software Engineer (Part-Time), HealthcareAIGuy, Penn Venture Labs   December 2024 - Present
- Engineered a Secure Member Directory Portal by implementing LinkedIn OAuth and Java Spring Boot middleware to proxy Airtable API interactions, shielding sensitive keys from the frontend.
- Developed a Scalable GCP Data Pipeline for an automated job board, utilizing Python and OpenAI to transform unstructured HTML into structured JSON for 15,000+ active users.
- Deployed Containerized Microservices via Docker on Google Cloud Run, utilizing environment variables for secure configuration and enabling seamless transitions between Dev and Prod.
- Optimized Costs and Revenue by building a granular testing framework to validate LLM logic without high-volume API calls, contributing to a 50% increase in MRR for healthcare tools.

Software Engineer Intern, Airalux Medical   September 2024 - December 2024
- Engineered a scalable full-stack solution (Swift/iOS, Python) for a medical device reducing post-op pneumonia risk, facilitating a 3x increase in breathing exercises and statistically significant reductions in hospital length of stay.
- Established a HIPAA-compliant data pipeline by migrating production data from Airtable to Azure SQL, securing a stable relational architecture for high-volume medical device telemetry.

EDUCATION/CERTIFICATIONS

University of Pennsylvania, Masters of Computer and Information Technology   May 2027
- Coursework: Data Structures and Algorithms, Systems Programming, Mathematical Foundations of Computer Science

The College of New Jersey, Bachelor of Science: Biomedical Engineering   May 2021
- Mayo Business Plan Competition 1st place.

PROJECTS

VisionLink | Lead Developer (MedGemma Impact Challenge)   December 2025 - Present
- Synthesized a decoupled "Relay Race" agentic pipeline using LangGraph to automate rural ophthalmic triage, leveraging PaliGemma (3B) for visual feature extraction and MedGemma (2B/4B) for clinical reasoning and patient interviewing.
- Engineered a multimodal Gradio ChatInterface that manages stateful, two-turn clinical dialogues, enabling automated detection of diabetic retinopathy and glaucoma while providing real-time triage reports and specialist referrals.
- Optimized for low-resource deployment by implementing 4-bit quantization (bitsandbytes) and float16 precision, ensuring high-accuracy clinical inference on consumer-grade hardware for remote medical environments.

Kinemax Engine | Lead Developer (Tennis Swing Analysis)   December 2025 - Present
- Architected a scalable computer vision pipeline using FastAPI and Docker to extract 33-point 3D skeletal landmarks from 2D tennis footage via MediaPipe Pose, enabling markerless motion capture for athletic analysis.
- Engineered an asynchronous cloud-native backend on Google Cloud Run, utilizing Cloud Tasks and Cloud Storage to manage the ingestion and processing of high-resolution video datasets with 99.9% reliability.
- Implemented advanced signal processing by applying Savitzky-Golay filters to coordinate data, successfully eliminating landmark jitter to establish a high-fidelity foundation for velocity and biomechanical metric calculations.

HARP: A Hybrid Auto-RNN Prediction System (SPARC Hackathon)   June 2025 - August 2025
- Applied Echo State Networks (ESNs) and RNNs to create an accessible data analysis platform, democratizing advanced neural networks for professional researchers.
- Leveraged GCP with Firebase, CloudRun, and Vertex to host webapp and train models on the cloud with minimal spend.

FUN FACTS
- Performed at Carnegie Hall three times for classical piano, also joined a jazz band for two years during college breaks
- Studied Chinese and German for 4+ years and have traveled extensively in China.