Kedarnath Mohan

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EDUCATION

University of Georgia GPA: 3.95 | Expected May 2027
Bachelor of Science in Computer Engineering *Athens, GA*
Relevant Coursework: Systems Programming, Deep Learning, Computer Vision, Algorithms, Linear Algebra, Differential Equations

EXPERIENCE

Incoming Software Engineering Intern May 2026 – Aug. 2026
Amazon | Devices *Seattle, WA*

Signal Processing Intern | *Python, NumPy, SciPy, Pandas* Jan. 2026 – Present
Zhao Nano Lab | University of Georgia *Athens, GA*
- Supported 1,500+ global users by helping maintain open-source spectra analysis software for Raman spectroscopy.
- Maximized signal-to-noise ratios by smoothing spectral data through robust wavelet denoising techniques.
- Eliminated manual intervention by engineering an automated data normalization pipeline for heterogeneous datasets.
- Improved out-of-the-box accuracy for edge cases by codifying optimal default parameters from systematic benchmarking.

Software Engineering Intern | *Python, React, TypeScript, YOLOv9* Mar. 2025 – Jan. 2026
HammerHead Construction | University of Georgia *Athens, GA*
- Converted 2D architectural blueprints into accurate 3D models by engineering a geometry synthesis engine in Python.
- Reduced annotation time by 83% and enabled sub-pixel CAD exports by fine-tuning the YOLOv9 computer vision pipeline.
- Streamlined handoff to downstream CAD tools by building a modular export layer supporting multiple industry file formats.

Undergraduate Research Lead | *Python, R, TensorFlow Lite, XGBoost* Mar. 2025 – Dec. 2025
AI @ UGA Research Group | University of Georgia *Athens, GA*
- Enabled real-time environmental analysis with 15-minute refreshes by building an IoT system on RPi4 and Supabase.
- Achieved 87% R-squared for field-reliable sensor data by developing an XGBoost regression model with 5-fold cross-validation.
- Reduced inference latency to 50ms on edge hardware by deploying quantized TensorFlow Lite models via automated scripts.

PROJECTS

Real-Time Arbitrage Engine | *C++, Erlang/OTP, FastAPI, Redis, PostgreSQL, React*
- Achieved sub-20ms ingestion latency for live market feeds by building a concurrent stream processor in Erlang/OTP.
- Maintained strict price-time priority with $O(\log N)$ complexity by implementing a Redis Sorted Set order book.
- Identified risk-free arbitrage opportunities by standardizing heterogeneous market schemas into a unified pricing structure.
- Ensured zero data loss during restarts by externalizing volatile state into Redis and surfacing signals via a React dashboard.

LumenRoute - AI Traffic Safety Platform | *Python, TypeScript, React, Gemini API, Docker*
- Detected and scored hazards across 3,000+ live traffic feeds by building a tiered YOLO-to-Gemini computer vision pipeline.
- Reduced transit risk by 45% by engineering a real-time routing algorithm based on hazard exposure scores.
- Filtered spam and broadcasted verified hazards in real-time using Firestore listeners and AI-powered reporting.

Embedded Health Monitor | *C, JavaScript, TensorFlow Lite*
- Enabled real-time health analysis on a BangleJS2 smartwatch by developing optimized firmware in C.
- Reduced model size by 92% for edge device deployment by quantizing models to 8-bit precision via LiteRT.
- Achieved 95% classification accuracy with 150ms inference by designing BLE GATT protocols and filters.

LEADERSHIP & INVOLVEMENT

Executive Board Member | *AI @ UGA (Student Organization)* Aug. 2025 – Present
- Secure industry-sponsored AI projects with firms and faculty to provide technical experience for 100+ members.
- Direct project managers to streamline agile delivery and milestone tracking for 10+ concurrent AI initiatives.
- Orchestrate technical recruitment and interview cycles for 50+ candidates to evaluate proficiency and team caliber.

TECHNICAL SKILLS

Languages: Python, TypeScript, Java, SQL, C++, C, Erlang/OTP, HTML/CSS
Frameworks & Libraries: React, Next.js, Node.js, FastAPI, Flask, TensorFlow Lite, OpenCV, NumPy, SciPy
Infrastructure & Tools: AWS (S3, EC2, ECS, Lambda), GCP (Pub/Sub, Vertex, GKE), Docker, Kubernetes, Git, Redis, PostgreSQL, Supabase, WebSockets