Pali Krishna Harshith

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Technical Skills

- **Languages:** *Python, Java, JavaScript, C, C++, Rust*
- **Web & Frameworks:** *React.js, Node.js, Express.js, HTML, CSS, Tailwind CSS, REST APIs*
- **Databases:** *MongoDB, SQL, Amazon DynamoDB, Firebase*
- **Cloud & Tools:** *AWS (Lambda, API Gateway, S3, Bedrock, CloudWatch, Amplify), Git, GitHub, Postman*
- **Core CS:** *Data Structures & Algorithms, Object-Oriented Design, OOP, DBMS, System Design, Complexity Analysis*
- **AI/ML:** *Scikit-learn, NumPy, Pandas, TensorFlow (in progress), ML algorithms*

Education

Mahindra University, B.Tech in Computer Science and Engineering — August 2024 – Present

- **Coursework:** Introduction to Computing, Data Structures, Digital Logic Design & Computer Architecture, DBMS, Object-Oriented Programming, Object-Oriented Design, Algorithm Design & Complexity Analysis
- Active member of technical communities; hands-on learning through workshops, clubs, and independent projects

Projects

FAULTLINE – Predictive Microservice Failure Detection System — Ongoing

Independent Research & Development | AWS Cloud-Native | React, Node.js, Amazon Bedrock

- Engineered a real-time observability system that detects cascading failures in microservice architectures before outages occur using statistical drift analysis across latency, retry rate, and error metrics.
- Built a serverless cloud-native backend on AWS Lambda + API Gateway with DynamoDB for time-series metric storage and CloudWatch for live ingestion: zero server management, auto-scaling by design.
- Integrated Amazon Bedrock (Claude 3 Haiku) to auto-generate root-cause hypotheses for detected anomalies, reducing MTTR by surfacing probable failure chains to engineers in plain language.
- Delivered an interactive React (Vite) dashboard with real-time metric visualization, alert timelines, and drill-down views, deployed via AWS Amplify; wrote automated tests to validate drift detection accuracy across simulated failure scenarios.

  Tech Stack: AWS Lambda, Amazon DynamoDB, Amazon API Gateway, Amazon Bedrock, Amazon S3, Amazon CloudWatch, AWS Amplify, React (Vite), Node.js, JavaScript

QuickDrop – WhatsApp-Based Hyperlocal Grocery Delivery Platform — 2025 – 2026

Entrepreneurial Build | FastAPI, React, Docker, WhatsApp Business API

- Designed and built a full-stack hyperlocal grocery delivery platform connecting customers to local kirana shops in Hyderabad via WhatsApp: competing directly with Blinkit and Zepto on delivery fees.
- Built a FastAPI backend with JWT auth, order management, inventory sync, and real-time delivery tracking; architected for horizontal scaling with Docker containerization.
- Developed a React admin dashboard for shop owners to manage inventory, orders, and delivery status in real time: removing the need for technical knowledge on the merchant side.
- Integrated WhatsApp Business API as the primary customer-facing interface, enabling order placement, status updates, and confirmations without a separate app install.

  Tech Stack: FastAPI, React.js, Docker, WhatsApp Business API, JWT, Python, JavaScript

AITO – AI-Powered Traffic Optimization System — Ongoing

Research & Development | Python, React.js, Scikit-learn, TensorFlow, Firebase, Leaflet

- Designing an ML-based traffic rerouting system that ingests real-time signals: congestion, weather, human activity, fixed-route constraints: to suggest optimal alternate paths in dense urban environments.

- Building a predictive modeling pipeline using Scikit-learn for pattern analysis, with a React + Leaflet frontend for live map-based visualization of traffic flow and suggested routes.
- Implementing multi-factor contextual data fusion to go beyond simple congestion metrics, addressing limitations of existing navigation tools in India's unpredictable urban traffic conditions.

  Tech Stack: Python, Pandas, NumPy, Scikit-learn, TensorFlow (planned), Firebase, JavaScript, React.js, Tailwind CSS, REST APIs, Git, Leaflet

Achievements

- **Top 300 of 10,000+ — AWS Global 10,000 AIdeas Competition** (2026) · Submitted FAULTLINE, a predictive microservice cascade-failure detection system built on AWS; ranked in the global top 3% across all submissions worldwide.

Certifications

The Complete Full-Stack Web Development Bootcamp – Angela Yu, Udemy (2023) [Certificate]

- Built and deployed full-stack web applications using HTML, CSS, JavaScript, Node.js, Express, and MongoDB
- Implemented real-world authentication flows using OAuth, Passport.js, and MongoDB Atlas across multiple production-grade projects