Arya Kulkarni

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SUMMARY

Graduate Computer Science student specializing in backend and applied AI systems. Experienced in building **scalable APIs, ML pipelines, and intelligent applications** using **Python, Java, and modern frameworks** like FastAPI and Spring Boot. Strong foundation in **cloud infrastructure, data-driven development, and automation**. Passionate about integrating machine learning with reliable backend systems to create impactful, production-ready solutions.

EDUCATION

San José State University — San Jose, CA
M.S. in Computer Science — Focus: AI and Systems — *Aug. 2025 – May. 2027 (expected)*

Birla Institute of Technology and Science, Pilani — Pilani, India
B.E. in Computer Science (U.S. Equivalent: B.S.) — *Nov. 2020 – May. 2024*

EXPERIENCE

Software Engineering Intern — Jul. 2023 – Dec. 2023
BlueJeans by Verizon — *Bangalore, India*
- Developed and optimized distributed backend microservices (**Java, Spring Boot, Python**) processing over **1M+ daily events**.
- Implemented asynchronous APIs and caching strategies to improve data throughput and reduce latency by **30%**.
- Integrated monitoring and logging in **AWS + Jenkins CI/CD pipelines** to improve reliability and simplify performance audits.

Research Assistant — Robotics & AI Systems — Jan. 2024 – May. 2024
BITS Pilani Robotics Lab — *Pilani, India*
- Developed predictive ML models for distributed robot coordination, improving exploration efficiency by 15%.
- Created real-time dashboards in **React + WebSockets** for data visualization, telemetry monitoring, and model performance tracking.

Full-Stack Developer Intern — Dec. 2022 – Feb. 2023
Printerverse — *New Delhi, India*
- Implemented **fuzzy search and retrieval optimization** for catalog data using SQL and backend indexing strategies, improving precision by 35%.
- Built modular **React/Node.js** components integrated with REST APIs and caching for fast user response times.

PROJECTS

RescueLens — Real-Time AI Vision and Triage Platform | Python, FastAPI, React, Docker, PyTorch, AWS
- Built an AI-driven vision system for real-time detection and prioritization in emergency scenarios using **PyTorch** and **FastAPI**.
- Developed asynchronous inference pipelines with **WebSockets** and deployed containerized services on **AWS**, achieving sub-200ms latency.
- Integrated explainability overlays and REST APIs for live visualization through a **React dashboard**, improving interpretability.

AI-IDS — Machine Learning-Based Intrusion Detection System | Python, FastAPI, PyTorch, Scikit-learn, SQL, Docker
- Designed and deployed a supervised ML pipeline for anomaly detection using Random Forest, CNN, and ensemble models.
- Built a RESTful API backend with **FastAPI** for live inference, integrating with **Docker** containers and monitoring utilities.
- Achieved 12% improvement in detection accuracy and added real-time metrics dashboards for model evaluation and drift tracking.

TECHNICAL SKILLS

Languages: Python, Java, JavaScript/TypeScript, C++, SQL, Bash

Backend: FastAPI, Flask, Node.js, Spring Boot, REST APIs, Microservices, Caching, WebSockets

AI/ML: PyTorch, TensorFlow, Scikit-learn, LangChain, Hugging Face, OpenAI API, Data Preprocessing, Model Evaluation

Cloud/DevOps: AWS (EC2, S3, Lambda), Docker, Kubernetes, Jenkins, Terraform, GitHub Actions, CI/CD, Linux

Frontend: React, Svelte, HTML5, CSS3, Figma Collaboration, Responsive Design

Data Systems: PostgreSQL, MySQL, MongoDB, Redis, Kafka (intro), FAISS