Anurag Lnu

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EDUCATION

- **Rochester Institute of Technology (RIT)**, Rochester, NY — **Aug 2024 – Present**
  Master of Science in Computer Science
- **Sikkim Manipal Institute of Technology**, India — **Jun 2015 – Jul 2019**
  B.Tech in Computer Science & Engineering

EXPERIENCE

Ernst & Young (EY) — **Bengaluru, India**
Senior Technology Consultant — **Apr 2022 – Jul 2024**

Portfolio Management

- Developed a back-end analytics platform using **Java**, **Scala**, and **Spring Boot** microservices to deliver critical portfolio insights for wealth management clients.
- Collaborated cross-functionally to design high-throughput modular microservices, generating over **100,000+ monthly client reports** and improving data accuracy by **15%**.
- Designed innovative data validation pipelines leveraging **Kafka** and custom quality checks to ensure end-to-end data integrity, reducing reconciliation efforts by **30%**.

Performance Insights Dashboard

- Created an automated internal tool to experiment with performance optimization techniques and benchmark the output of legacy versus new codebases.
- Reduced pipeline latency by **25%** through **Java-based performance tuning** and targeted code optimizations in high-throughput back-end systems.

Real-Time Fraud Monitoring System (Morgan Stanley)

- Developed enterprise-scale **Spring Boot** transaction workflows to enhance fraud detection across distributed systems.
- Implemented algorithms that reduced fraud review time by **75%** through **real-time automated decision-making** rule sets.

Service Up-time Assurance System

- Implemented a **Redis-based distributed queuing** and caching architecture on an enterprise scale for financial transactions.
- Reduced average response times by **70%** in production back-end systems, ensuring reliability during peak loads serving **millions of users**.

Tata Consultancy Services (TCS) — **Hyderabad, India**
Software Engineer — **Jul 2019 – Apr 2022**

USAA Account Microservices

- Engineered resilient core banking APIs using **Spring Boot**, processing over **1M+ daily transactions** while maintaining **99.9% system availability**.
- Integrated **Kafka** for asynchronous event-driven processing and managed **Cassandra** clusters for persistent state, reducing data retrieval latency by **20%**.
- Established real-time monitoring ecosystems using **Prometheus** and **Grafana**, cutting Mean Time to Resolution (MTTR) by **35%** through automated alerting.

Deployment Automation & DevOps

- Architected end-to-end CI/CD pipelines via **Jenkins**, **UCD**, and **GitHub Actions**, slashing deployment lead times by **40%**.
- Containerized legacy workloads using **Docker** for orchestration on **OpenShift**, improving compute resource efficiency by **25%**.
- Enforced strict quality gates using **SonarQube**, reducing critical vulnerabilities in production builds by **15%** and ensuring code compliance.

Database Performance & Requirements Analysis

- Optimized **MySQL**, **MongoDB**, and **Cassandra** schemas for high-concurrency workloads, achieving a **50% reduction** in query execution time.
- Migrated legacy data pipelines to cloud-native architectures, ensuring data integrity and scalability for future growth.
- Translated complex functional requirements into technical specifications on **Confluence** and **JIRA**, facilitating seamless knowledge transfer for distributed teams.

SKILLS

Languages:	Java, Python, Scala, JavaScript, TypeScript, C
Frameworks:	Spring Boot, Microservices, RESTful APIs, PyTorch, TensorFlow
Databases:	MySQL, MongoDB, Cassandra, Redis, JDBC, Hibernate
Cloud/Tools:	Kafka, IBM MQ, Gradle, Maven, Azure, GitHub, Bitbucket, Jenkins, OpenShift, SonarQube
Testing:	JUnit, Mockito, Postman

CERTIFICATIONS

- Oracle Certified Associate, Java SE 8 Programmer
- AWS Cloud Practitioner

RELEVANT COURSEWORK

- Artificial Intelligence
- Machine Learning
- Biologically Inspired Intelligent Systems
- Advanced Computer Vision
- Big Data Analytics
- Foundation of Parallel Computing

PROJECTS

Image Similarity Engine

- Engineered a lightweight image retrieval system using **PyTorch** and **SqueezeNet**, achieving a compacted model size of **<5MB** suitable for edge deployment.
- Optimized inference pipelines to achieve **sub-50ms latency** on standard CPUs by implementing efficient state-dict loading and automated checkpoint retrieval.
- Designed a robust versioning algorithm that automatically parses and loads the optimal model from **100+ training epochs**, reducing deployment rollback time by **40%**.
- Outperformed base **DINOv2** and **CLIP** models (**45% accuracy**) by achieving **92% top-5 accuracy** through iterative fine-tuning of CNN layers on custom datasets.

Smart Bets - Automated Virtual Betting System

- Engineered an automated sports trading bot using **XGBoost**, processing **36 distinct match features** to identify +EV opportunities with **>60% confidence**.
- Achieved **sub-200ms inference latency** per match by optimizing the highly-concurrent feature extraction pipeline with vectorized **NumPy** operations.
- Built a scalable **FastAPI/AsyncIO** backend handling **100% of the daily betting lifecycle** (Fetch →Predict →Trade→ Settle).
- Implemented **Fractional Kelly Criterion (25%)** for dynamic risk management and developed a real-time analytics dashboard using **React**.

Attendance Management using Facial Recognition

- Developed a contactless biometric system using **OpenCV** and **FaceNet**, achieving **99.2% recognition accuracy** across varied lighting conditions.
- Engineered a **multi-threaded detection pipeline** capable of processing live video feeds at **30 FPS** with **sub-100ms latency** per frame.
- Integrated a **MySQL** database with automated email reporting, reducing manual tracking administrative overhead by **90%** for large cohorts.

Hybrid ML Scheduler

- Designed a **self-optimizing scheduler** to solve the "Heterogeneous Scheduling Bottleneck" in **HPC clusters** (CPU, GPU, TPU, FPGA).
- Implemented **AI-driven real-time decision-making** based on task physics and cluster state to overcome traditional static heuristic limitations.
- Achieved an **18% increase in efficiency** compared to traditional counterparts by optimizing for data transfer costs and resource scarcity.

Distributed Adaptive Resonance Theory

- Explored **asynchronous message-passing actors** to simulate biological neural dynamics compared to synchronized tensor frameworks.
- Implemented **Adaptive Resonance Theory (ART-1)** architecture to address the **stability-plasticity dilemma** in neural networks.