

Aryan Bali

✉ aryanbali250@outlook.com | 🌐 github.com/Aryan12889 | 🔗 linkedin.com/aryan12889 | 🌐 aryanbali.vercel.app/
📍 Bengaluru, KA, IN | 📞 +91 91105 90876

EXPERIENCE

- **Data Engineering & Analytics Intern** | *TerraPay* Aug 2025 – May 2026
<https://www.terrapay.com/> 📍 Bengaluru, India
 - **Operational Intelligence & Reporting:** Deployed real-time **Apache Superset** dashboards to monitor **200,000 daily transactions**, designing a relational mapping schema to standardise error code categorization and accelerate the debugging.
 - **Automated Reconciliation Pipeline:** Engineered a fault-tolerant Python engine capable of **processing 20,000+ transaction records in under 20 seconds** to reconcile multi-currency ledgers.
 - **Pipeline Optimization:** Optimised PostgreSQL pipelines across EU and Asian regions, utilising advanced window functions to **reduce cross-border query execution time by 30%** and minimise server-side processing overhead.

EDUCATION

- **SRM Institute of Science and Technology, Kattankulathur** Sep 2021 – May 2025
Bachelor of Technology in Computer Science & Engineering with Artificial Intelligence & Machine Learning GPA: 3.57/4.00

SKILL STACK

- **Languages:** SQL, Python, C++, Java, C, Bash
- **Developer Tools:** Git, Docker, Linux, Postman
- **Frameworks:** Django, Flask, LlamaIndex, FastAPI
- **Libraries:** Tensorflow, PyTorch, Pandas, NumPy, YOLOv9, Ultralytics, RapidFuzz, EigenFaces
- **Databases:** PostgreSQL, MongoDB, Qdrant
- **Cloud & Infrastructure:** AWS S3, Oracle Cloud Infrastructure
- **BI Tools & Visualisation:** Apache Superset, Power BI

PROJECTS

- **ScaleRAG: Distributed AI Document Intelligence Framework** Dec 2025 – Present
Generative AI & Distributed Systems | *Redis, Celery, Qdrant, Docker, LlamaIndex* github.com/Aryan12889
 - **Asynchronous Ingestion Architecture:** Engineered a decoupled ingestion pipeline using **FastAPI** and **Celery**, utilising **Redis** as a message broker to handle task queues for non-blocking processing of heterogeneous file formats.
 - **Hybrid Retrieval System:** Architected a **Qdrant vector database** implementation combining dense embeddings with sparse keyword search and **Cross-Encoder** reranking, improving precision by reducing hallucination rates by 45%.
 - **Containerisation & Orchestration:** Deployed the full microservices suite using **Docker**, implementing **LlamaIndex** for recursive retrieval and stress-testing the pipeline to maintain consistent latency under high-concurrency ingestion loads.
- **Real-Time PPE Compliance & Safety Monitoring System** Dec 2024 – May 2025
Computer Vision & Edge AI | *YOLOv9, OpenCV, Ultralytics, React* github.com/Aryan12889
 - **Computer Vision Pipeline:** Developed a modular detection framework **integrating YOLOv9 for object detection (91.3% mAP)** and **EigenFaces** for identity verification.
 - **Edge Computing Optimisation:** Optimised inference models for deployment on resource-constrained hardware, achieving 42 FPS on NVIDIA RTX 3060, validating real-time applicability for industrial edge nodes.
 - **Full-Stack Monitoring Dashboard:** Built a responsive **React.js** interface for live alert visualisation, integrating a **Flask backend** to log safety violations and historical compliance data for audit trails.
- **Multi Metaheuristic Framework for Load Balancing in Smart Grids** Jul 2024 – Nov 2024
Metaheuristic Optimisation & Deep Learning | *Python, PyTorch, Numpy* github.com/Aryan12889
 - **Hybrid Optimisation Algorithm:** Designed a convergence-focused algorithm **fusing Ant Colony Optimisation, Simulated Annealing, and Particle Swarm Optimisation**.
 - **Reinforcement Learning Integration:** Implemented a **Deep Q-Network (DQN) agent** to enable adaptive decision-making policies, improving system resilience against fluctuating demand patterns.
 - **High-Dimensional Validation:** Validated the framework on a **dataset of 160,000 unique samples**, achieving algorithmic convergence and **stability across 12,000 unseen scenarios** to verify generalisation capabilities.

CERTIFICATES

- **Oracle Cloud Infrastructure 2024 Certified Foundations Associate** | *Oracle* Feb 2025
- **Oracle Cloud Infrastructure 2024 Data Certified Foundations Associate** | *Oracle* Feb 2025
- **Machine Learning Specialization** | *Deep Learning.AI & Stanford University* Nov 2023

ACCOMPLISHMENTS

- **TerraPay Team Award - 1st Quarter** | *TerraPay* May 2026
Awarded for conceptualising innovative solution during an in-house ideathon.
- **Autodesk Best Fabrication Award** | *Autodesk* Jul 2024
Awarded the Autodesk Best Fabrication Award along with a cash prize of **Rs. 25,000**