

ARYAN ISHAN RAVESHIA

Phone: +1 (857) 351-1142 | Email: aryan.raveshia12@gmail.com | [Website](#) | [LinkedIn](#) | Boston, MA

Education

Northeastern University <i>Master of Science in Computer Science</i>	Sep. 2025 – May 2027 <i>Boston, MA</i>
Manipal Institute of Technology <i>Bachelor of Technology in Computer and Communication Engineering</i>	Oct. 2020 – Jul. 2024 <i>Manipal, India</i>

• **Relevant Coursework:** Programming Design Paradigms, Web Development, Algorithms, Foundations of AI

• **Relevant Coursework:** Data Structures and Algorithms, Database Systems, Operating Systems, Machine Learning, Data Mining, Cloud Computing, Neural Networks, Computer Networks, Software Engineering, Big Data Analytics.

Work Experience

The Boeing Company <i>Entry Level Software Engineer</i>	Aug. 2024 – Aug. 2025 <i>Bangalore, India</i>
<ul style="list-style-type: none">Architected a Python and Neo4j Data-Fetch service (Cypher) to pull airline and airport data, conditionally fall back to OAG, and convert outputs into .ACF schedules for the Simulation Management Service; produced schedules of up to approx 1,000 flights in under 2 minutes for downstream ingestion.Engineered a high-performance aircraft-state streaming using ZeroMQ by developing Python publisher/receiver, Cythonized and compiled to .pyd modules to reduce overhead; achieved approx under 20ms end-to-end latency and sustained over 5,000 messages/sec in test harnesses to support real-time conflict detection.Developed a reusable Python flight-path module that decodes aggregated route datasets (routes.rts, routes.json, waypoints.wpt, airport.apt), supports city–city and waypoint–airport queries, and returns route strings plus structured waypoint files — handled a dataset of approx 200k routes and returned queries in under 500ms on average.Implemented waypoint ETL via Python module to fetch and normalize approx 50k waypoints from Neo4j, convert decimal co-ordinates to cardinal format, and publish standardized waypoint datasets for modular simulation components.Designed serialization and inter-service contracts for microservice migration: prototyped Protocol Buffers (Protobuf) for TAAM aircraft payloads to support FMI 3.0 migration and defined ZeroMQ streaming message schemas; reduced serialized payload size by 40% vs. JSON and standardized interfaces for microservice decomposition.Automated packaging of Windows runtime dependencies in Linux containers using CrossOver: created a bottle-install/archive/deploy workflow for VC++ redistributables and other runtimes, enabling headless container deployment and cutting manual VM-based packaging effort by approx 90%.	

Manipal Institute of Technology <i>Undergraduate Artificial Intelligence Research Assistant</i>	Jan. 2024 – Jul. 2024 <i>Manipal, India</i>
<ul style="list-style-type: none">Authored thesis titled “Evaluating Explainable Artificial Intelligence in Regression Models”: Designed and constructed interpretable machine learning models, improving explanation fidelity by approx 15% on benchmark datasets.Engineered Explainable AI visualization pipelines using Python, SHAP, and LIME to extract and display model decision factors.Evaluated model transparency through quantitative metrics (e.g., stability, feature attribution consistency) to ensure reliable interpretability.	

Projects

Calendar Management System (Java, Swing)	
<ul style="list-style-type: none">Architected, designed and built a robust calendar system using Java and Swing, strictly adhering to the Model-View-Controller (MVC) architecture to ensure modularity, scalability, type-safety and separation of concerns.Applied advanced design patterns and engineered a flexible controller using the Command Pattern to decouple user actions from business logic and integrated the Builder Pattern to streamline the creation of complex event objects.Implemented a custom AnalyticsHub for Calendar Analytics and utilized Immutable Data Transfer Objects (DTOs) with defensive deep-copying to ensure MVC and SOLID principles-safe data transport and strict encapsulation between layers.Developed complex algorithms for recurring event scheduling and conflict detection, optimizing for performance to handle dense calendar data efficiently.	

Learning Management System (TypeScript, React, Node.js, MongoDB, Express) - Link	
<ul style="list-style-type: none">Developed and deployed a scalable learning management system with role-based access control (RBAC) supporting students, faculty, and administrators, implementing RESTful APIs with Express.js and MongoDB for persistent data storage with optimized queries using Mongoose ODMBuilt responsive React frontend with Next.js and TypeScript featuring real-time course enrollment, dynamic user management with CRUD operations, modular assignment tracking, and session-based authentication with secure cookie handling, deployed on Vercel and hosted on Render.	

Technical Skills

Languages: Java, Python, C++, TypeScript, JavaScript, SQL, C#

Frameworks and Libraries: ZeroMQ, REST APIs, gRPC, Protobuf, CMake, React, Angular, Swing, ExpressJS, NodeJS

Machine Learning: SHAP, LIME, Scikit-learn, NumPy, Pandas, TensorFlow, XGBoost, Random Forests, Decision Trees, Regression Models, Feature Engineering, Model Evaluation and Explainability

Databases: MySQL, MongoDB, SQLite

Tools & Cloud: Git, Docker, GitLab CI/CD, Jira, Postman, Vercel, Render, VS Code, IntelliJ, Eclipse