

RISHI MULE

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Education

Northeastern University, Boston, MA **December 2025**
Master of Science in Computer Science **GPA: 3.96/4.0**

Core Coursework: Algorithms, Database Systems, Cloud Computing, Machine Learning, MLOps, Deep Learning

University of Mumbai, Mumbai, India **May 2023**
Bachelor of Engineering in Computer Engineering **GPA: 9.7/10**

Core Coursework: Data Structures, OOD, Analysis of Algorithms, Operating Systems, Cryptography, Big Data, NLP

Experience

Thermobionics **Sept 2024 – Dec 2024**
Software Developer Intern *Boston, MA*

- Designed an app for wireless communication with PIC microcontroller, improving data transmission efficiency by 30%.
- Analyzed high-volume sensor data to optimize system performance, aligning with modern data engineering practices.
- Developed a program for serial communication, streamlining the user interface and reducing overall setup time by 40%.

InfoInnotronics Eng. & Tech Pvt. Ltd **June 2022 – Sept 2022**
Software Engineer Intern *Pune, India*

- Developed a real-time energy monitoring system for ICs using Python's serial library, achieving 99% data accuracy.
- Streamlined hardware-software integration by collaborating across teams, boosting energy system efficiency by 20%.
- Collaborated with team members using version control systems such as Git to organize modifications and assign tasks.

TCR Innovations **Jan 2022 – Apr 2022**
Data Science Intern *Mumbai, India*

- Developed predictive models using machine learning algorithms to uncover insights from large datasets, and conducted exploratory data analysis to identify retention and attrition factors, directly informing strategic HR initiatives.
- Optimized prediction accuracy to 94% by evaluating statistical metrics and fine-tuning Random Forest classifiers.

Projects

AI-GovBot (H.A.R.V.E.Y) | *Python, LangChain, Airflow, GCP, GKE, MLflow, DVC* **April 2025**

- Architected RAG-based legal assistant using LangChain & FAISS to provide context-aware responses of AI regulations.
- Automated data pipelines with Airflow/TFDV on GCP, leveraging DVC for versioning and reproducible ML workflows.
- Deployed a containerized application to GKE with MLflow and Langfuse for performance monitoring.

OpenFold Protein Structure Prediction Mini-Implementation | *C++, CUDA, Python, PyTorch* **March 2025**

- Developed a streamlined version of OpenFold on consumer grade hardware with < 100 GB storage footprint.
- Applied NVIDIA specific optimizations including tensor cores & clock management for sustained 80% GPU utilization.
- Utilized SoloSeq weights and compressed MSA databases to enable structure prediction for sequences up to 1K residues.

Java Image Processing Application | *Java, Swing, OOD, JUnit* **May 2024**

- Developed a desktop application using MVC architecture to ensure modularity and scalability across core feature set.
- Integrated a Swing-based GUI supporting real-time manipulation including cropping, resizing and contrast adjustments.
- Applied Command & Strategy design patterns to decouple logic from the UI, facilitating collaborative team expansion.

Personalized Tourism Recommender using Chatbot | *Python, Django, Dialogflow, API calls* **February 2022**

- Built a personalized tourism recommendation system incorporating rule-based prediction model in Python.
- Used weighted score technique aligned with user preferences, and integrated with Google Dialogflow chatbot .
- Engineered a responsive web application utilizing cloud computing, featuring user authentication (login/sign-up), SHA-256 security hashing, search history tracking, and a dynamic, component-based UI.

Technical Skills

Languages: Python, Java, C/C++, SQL (PostgreSQL, MySQL), JavaScript, HTML/CSS, LaTeX, Bash, R

Frameworks: Flask, React, Django, Node.js, Spring Boot, TensorFlow, PyTorch, Keras, Scikit-Learn

Cloud & Databases: AWS (S3, EC2), GCP (BigQuery, Dataflow), Microsoft Azure, MongoDB

Developer Tools: Git, Docker, Jenkins, Apache Spark, Kafka, Airflow, Linux, Hadoop, Weka, Power BI, IntelliJ