RISHABH AGRAWAL

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Education

K.J. Somaiya School of Engineering — Vidyavihar, Mumbai
Bachelor of Technology in Computer Engineering; CGPA: 8.76 — *Oct. 2022 – May 2026*

Kishinchand Chellaram (KC) College — Churchgate, Mumbai
Pre-University Education; HSC Percentage: 77.67% — *2020 – 2022*

GreenLawns High School — Breach Candy, Mumbai
High School Education; ICSE Percentage: 97% — *Till 2020*

Experience

Machine Learning Intern
ONGC — *2025*

- Designed and implemented a **Retrieval-Augmented Generation (RAG)** model for contextual document-based question answering using **LangChain**, **Ollama**, and **HuggingFace**.
- Implemented **vector indexing** and enhanced knowledge retrieval by integrating an LLM.
- Improved pipeline speed and responsiveness, **optimizing AI workflow** for better operational efficiency.

Internship with Software Development Cell | Demo | GitHub
KJSSE — *2024*

- Developed a web-app using **Flask** to automate generation of **seating plans** for university examinations.
- Utilized **Python**, **Pandas**, and **Openpyxl** for data manipulation and dynamic Excel report generation.
- Created a streamlined and efficient tool that saved **significant time** during University exam schedule preparations.

Projects

Algorithmic Trading Engine | *Flask, LightGBM, Docker, Chart.js, pandas, scikit-learn* — Github

- Engineered a full-stack, end-to-end quantitative trading pipeline, featuring a modular, **object-oriented architecture** and a multi-asset **backtesting engine** to evaluate strategy performance.
- Developed a factor-based ML strategy using LightGBM on normalized panel data and deployed the system as a containerized Flask application with an interactive Chart.js dashboard to the cloud.

KhetGuru | *MERN Stack, KNN, CNN, TensorFlow, Google Generative AI* — Github

- Developed a solution to empower farmers with **data-driven tools** to improve productivity and reduce costs.
- Implemented **crop recommendation system** based on extracted parameters using K-Nearest Neighbors (KNN).
- Developed **crop disease detection** system using Convolutional Neural Networks (CNN) to analyze crop images.
- Integrated **Google Generative AI** to power a conversational chatbot.

Smart Surveillance System | *YOLOv8, OpenCV, CNN, PyTorch, facerecognition* — Github

- Developed a real-time AI surveillance solution in Flask to automatically detect and respond to suspicious activities, including **weapons, fire,** and **recognized criminal faces** from live video streams.
- Fine-tuned a **YOLOv8 model** for object detection and a custom **CNN** for facial recognition, engineering a system of automated alerts to enhance public safety.

Achievements

– **Top 10 Finalist** in the prestigious Pan-IIT PIWOT Hackathon 2025.
– **Treasurer of the Interact Club of Greenlawns High School -** Successfully organized multiple events.
– **First place** in the Flutter Workshop conducted by GDG.
– Won **40+** elocution, dramatics, aptitude and art competitions.

Technical Skills

Languages: C/C++, Python, Java, SQL, HTML/CSS, JavaScript
Technologies: Machine Learning, Scikit-learn, Flask, React.Js, Gemini API, LangChain, GenAI, PostgreSQL
Developer Tools: Git, AWS, Docker
Soft Skills: Problem solving, Public Speaking, Leadership, Logical Reasoning, Team Collaboration