Rishabh Kumar Roy

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Education

- **Vellore Institute of Technology (VIT) Chennai** — *Chennai, Tamil Nadu*
  *Bachelor of Technology in Computer Science and Engineering (**GPA: 8.32**)* — *September 2021 – May 2025*

Experience

- **Google Developers (via SmartInternz)** — *August 2023 – November 2023*
  Extern – Artificial Intelligence and Machine Learning
  - Designed and implemented **The Sleep Oracle**, a machine learning-based system analyzing data from **400+ individuals**. Identified sleep apnea cases in **17% of the population** and provided personalized health recommendations.
  - Achieved a classification accuracy of **91%**, with high-risk cases detected with a precision of **93%** using logistic regression and random forest algorithms.

Projects

- **Forecasting Future Land Cover Using Google Earth Engine** — *January 2025*
  Predicted land cover changes for sustainable development.
  - Utilized Google Earth Engine and machine learning models to analyze **5 years of satellite data**, forecasting land cover changes with **85% accuracy** to support urban planning initiatives.
  - Predicted future scenarios to aid urban planning and environmental monitoring.
  - Provided data-driven insights that contributed to 30% more efficient allocation of sustainable resources across key areas.
- **Portfolio Website** — *January 2025*
  Personal portfolio showcasing skills, projects, and achievements.
  - Built and deployed a portfolio website with interactive features using **HTML, CSS, and JavaScript.**
  - Implemented interactive elements and smooth navigation to increase user retention by 50%.
  - Increased User Engagement by 40%.
- **ANPR (Automatic Number Plate Recognition)** — *March 2024*
  Machine learning-based system for vehicle number plate recognition and toll collection.
  - Spearheaded the development of an **ANPR**-based toll collection system, utilizing infrared sensors and high-definition cameras for vehicle identification of up to 5 vehicles in a single time.
  - Achieved **95% accuracy** in number plate detection using **YOLOv8** with a processing time of **0.98 seconds**.
  - Integrated **Python**, **OpenCV**, and **Tesseract OCR** on **Google Colab** to enable real-time license plate recognition with 3ms latency and efficient toll processing.

Technical Skills

- **Programming/Development Languages:** Java, C++, Python, JavaScript
- **Tools:** Google Colab, Scikit-Learn, OpenCV, TensorFlow, MATLAB, Keras, Docker, Kubernetes, Git/GitHub
- **Core Courses:**Algorithms and Data Structures, Discrete Mathematics, Database Management Systems, Computer Architecture, Operating Systems, Computer Networks, Machine Learning, Artificial Intelligence,Gen AI

Certifications

- Artificial Intelligence and Machine Learning Powered by Google Developers
- Cybersecurity Fundamentals by IBM SkillsBuild
- Google Cloud Certified Cloud Digital Leader
- Cyber Security | Mood Indigo by IIT Bombay

Extra-Curricular Activities

- **Community Engagement and Content Creation:** Gained over 1 million views across social channels by creating content on college-related topics. Developed video editing, scripting, and audience engagement skills, while promoting environmental sustainability and community health.
- **Youth Red Cross Management Lead:** Led the management team in organizing and executing club initiatives. Organized and managed a beach clean-up event with 150+ participants, ensuring smooth operations and high engagement.