Rajeev Ranjan Pratap Singh

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Education

VIT Bhopal University, Bachelor of Technology in Computer Science and Engineering (AI&ML) — 2022 – Ongoing

- CGPA: 8.43/10
- **Relevant Coursework:** Machine Learning,Data Science, Applied Linear Algebra, Probability & Statistics.

Projects

Emotion Detection System — *2023* — github.com

- Developed a real-time emotion recognition system using Convolutional Neural Networks (CNNs), achieving 80% accuracy across 7 emotion classes.
- Processed over 10,000 facial images and integrated real-time video streaming to reduce latency by 25%.
- Implemented TensorFlow-Keras stack to deploy the model efficiently, enhancing user interaction and system responsiveness.

Brain Tumor Detection Using AI — *2024* — github.com

- Built a deep learning classification pipeline using ResNet50 and DenseNet121, achieving 99.69% accuracy in identifying brain tumors across multiple MRI scan types.
- Applied data augmentation, preprocessing (OpenCV, NumPy), and hyperparameter tuning to enhance precision and reduce model overfitting by 18%.
- Validated results on a dataset of 3,264 annotated MRI images, improving diagnostic speed and accuracy for clinical workflows.

Diabetic Retinopathy Detection — *2025* — github.com

- Designed a CNN-based diagnostic pipeline using DenseNet-121 with CBAM attention mechanism to detect 5 DR stages, achieving 80% test accuracy on APTOS 2019 dataset.
- Preprocessed 3,662 retinal fundus images with contrast normalization and augmentation to balance class distribution and improve Cohen's Kappa Score to 0.76.

Achievements

- Secured 2nd place in Robotics and Coding Workshop, VIT Bhopal.
- **Tata Group ESG (Forage):** Completed sustainability simulation. Skills: Sustainability, Business Analysis, Fitment Matrix, Client Communication.
- **KPMG AU Data Analytics (Forage):** Worked on customer segmentation and dashboard design. Skills: Data Analytics, Dashboards, Customer Segmentation.
- **Accenture Nordics SE(Forage):** Applied Agile and SSDLC methodologies. Skills: Agile, Debugging, Code Reading.
- **Walmart USA SE (Forage):** Applied software engineering concepts. Skills: Python, Java, SQL, UML.

Technical Skills

- **Programming Languages:** Python, Java, JavaScript(beginner), SQL, HTML, CSS.
- **Machine Learning Libraries:** TensorFlow, Keras, Scikit-learn, NumPy, Pandas.
- **Computer Vision Deep Learning:** OpenCV, DenseNet, ResNet, CNNs, CBAM.
- **Version Control Tools:** Git, GitHub, Jupyter Notebook, VS Code, PyCharm.
- **Cloud Platforms:** Google Cloud Platform (GCP), AWS (basic knowledge).
- **Databases:** MongoDB, MySQL.
- **Core CS Concepts:** Data Structures Algorithms (DSA), Object-Oriented Programming (OOP), Operating Systems, Database Management Systems (DBMS), API Automation.
- **Soft Skills:** Team Collaboration, Technical Communication, Technical Issue Resolution, Presentation, Self-Learning.

Certifications

- Applied Machine Learning in Python – Coursera (2023).
- Google Analytics Certification – Valid till 2026 (Scored 86%).
- Google Ads AI-Powered Performance – Valid till 2026 (Scored 91.3%).
- Blockchain Developer – IBM Cognitive Class (2025).
- Generative AI using IBM Watsonx – IBM Cognitive Class (2025).