Bhushan Kumar

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EDUCATION

VIT Bhopal University
B. Tech in Computer Science • Specialization Artificial Intelligence & Machine Learning • Bhopal, Madhya Pradesh • May 2026 • **CGPA:** 8.4/10

Kendriya Vidyalaya No 2 Kochi
12th • Kochi, Kerela • Jul 2021 • **Percentage:** 94%

Kendriya Vidyalaya No 2 Kochi
10th • Kochi, Kerela • May 2019 • **Percentage:** 93.5%

PROJECTS

Bhopal Water Quality Monitoring (February 2023 – April 2023) Omdena VIT BHOPAL local chapter

- Developed satellite-based water quality monitoring system using GIS, eliminating IoT sensor costs while maintaining accuracy.
- Analyzed water quality across 14 lakes using satellite imagery to extract pH, turbidity, chlorophyll, and oxygen metrics.
- Built real-time dashboard for water quality monitoring, enabling rapid detection of quality deterioration.

Heart Disease Prediction using Boruta Feature Selection Algorithm (December 2023 — February 2024)

- Engineered a machine learning model utilizing the Random Forest Classifier in Python, achieving an accuracy of 98.6%.
- Prepared a comparative analysis of various classifiers, identifying the Random Forest Classifier as the most optimal.
- Applied Boruta Algorithm to extract 118 significant features from the dataset enhancing the model's accuracy and performance.

Facial Recognition Attendance System (July 2023 — August 2023)

- Spearheaded a state-of-the-art Facial Recognition system using Python, OpenCV, NumPy, csv, and os modules, achieving 95% accuracy in identifying faces and reducing authentication time by 50%.
- Implemented Excel-based attendance tracking for over 140 students.

Artificial Intelligence Road Detection System (April 2023 — June 2023) Omdena VIT BHOPAL local chapter & Mexico chapter

- Contributed to the project by collecting 1,200 raw images and accurately annotating over 600+ images for training.
- Developed a ML pipeline utilizing transfer learning and pre-trained CNN architectures to classify multiple categories of road defects from pictures.
- Implemented transfer learning techniques to overcome data scarcity challenges & optimizing model performance.

EEG-Based Brain Computer Interface for Automotive Control (November 2024 — April 2025)

- Implemented an EEG-based automotive system using brainwave signals to control vehicle functions such as acceleration, braking, and steering.
- Utilized non-invasive EEG sensors and machine learning algorithms for real-time signal processing and classification.
- Developed a working prototype and demonstrated its accuracy, responsiveness, and potential for enhancing accessibility in vehicle operation.

ACADEMIC ACHEIVEMENTS

Member: SEDS Nebula • October 2023 – September 2024

- Promote space exploration and development through educational and engineering projects.

Student Coordinator: RTASCE 2023 • July 2023

- Coordinated and led an International Conference on Recent Trends in Applied Sciences and Computer Engineering with prominent national and international experts.

CERTIFICATIONS

- Applied Machine Learning Using Python Michigan University – Coursera (Nov 2023 – Dec 2023)
- Privacy and Security in Online Social Media – NPTEL (Jan 2024 – April 2024)
- DevOps – IBM (Feb 2025 - May 2025)
- Cyber Security – IBM (Feb 2025 - May 2025)

SKILLS

Programming: Python, HTML/CSS, SQL, C++
Tools: VS Code, Blender, Unreal