

Abhishek Rana

+91-6200002104 | ranaabhi3010@gmail.com | github.com/Abhishekrana30
Bengaluru, Karnataka

Professional Summary

Motivated Computer Science and Engineering undergraduate with a strong interest in Artificial Intelligence, Machine Learning, Computer Vision, and Software Development. Skilled in Python, Java, JavaScript, SQL, and web technologies, with hands-on experience developing machine learning and computer vision projects. Familiar with image processing, human pose estimation, facial emotion recognition, CNN-based classification, and real-time computer vision applications. Passionate about problem solving, learning new technologies, and building practical software solutions while continuously improving technical and analytical skills.

Education

RV Institute of Technology and Management, Bengaluru
Bachelor of Technology (B.Tech) – Computer Science and Engineering

2023 – 2027
CGPA: 7.81/10

Technical Skills

- **Programming Languages:** Python, Java, JavaScript, SQL
- **Web Technologies:** HTML, CSS, JavaScript, Node.js
- **Machine Learning and Computer Vision:** OpenCV, NumPy, TensorFlow, PyTorch (Basics)
- **Core Subjects:** Computer Networks, Operating Systems, DBMS, Data Structures, Object-Oriented Programming (OOP)
- **Tools and Platforms:** Git, GitHub, VS Code, Figma, Cisco Packet Tracer

Projects

Gym Posture Correction using Computer Vision

Python, OpenCV, Machine Learning

- Developed a real-time posture correction system using computer vision techniques to analyze exercise movements and identify incorrect body posture.
- Utilized pose estimation concepts to detect and analyze body positioning during exercises, with the objective of identifying posture-related issues.
- Applied image processing and computer vision techniques to process visual input and support real-time analysis of exercise form.
- Generated real-time feedback to help users improve exercise form and maintain more appropriate posture during physical activities.
- Explored practical applications of human pose estimation and computer vision for fitness-related assistance and posture monitoring.
- Strengthened understanding of image processing, pose estimation, real-time computer vision workflows, and machine learning concepts through project development.

Real-Time Gamer Frustration Detection using Facial Machine Learning

Python, OpenCV,

TensorFlow/PyTorch, NumPy

- Built a real-time facial emotion recognition system designed to identify signs of gamer frustration from facial expressions.
- Implemented a computer vision pipeline involving face detection, image preprocessing, and facial expression analysis for emotion recognition.
- Explored CNN-based emotion classification using TensorFlow/PyTorch concepts to analyze facial expressions and identify emotional states.
- Designed a frustration scoring mechanism using temporal emotional patterns to consider changes in facial expressions over time.
- Used OpenCV and NumPy for image processing and manipulation as part of the real-time facial analysis workflow.
- Explored practical challenges associated with real-world facial recognition systems, including lighting variations, facial occlusion, and diversity in facial expressions.
- Developed practical understanding of computer vision, facial emotion recognition, image preprocessing, deep learning concepts, and real-time machine learning applications.

Additional Information

- **Research Paper:** Prepared a review paper on automated portfolio creation using HTML, CSS, and JavaScript, covering portfolio platforms, usability, and responsive web design.
- **Certifications:** Infosys Springboard – Data Structures; Cisco Networking Academy – Networking Basics.
- **Sports Club Member:** Actively participated in college sports activities and team events, developing teamwork, collaboration, and communication skills.
- **Strengths:** Quick learner with strong analytical and problem-solving skills, effective communication abilities, and a passion for continuous learning and professional growth.