Rudriya Bansal

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in Rudriya Bansal

SUMMARY

Computer Science professional with expertise in AI/ML and full-stack development. Proven ability to build innovative solutions through hands-on coding and system design. Skilled in Python, data structures, and cloud technologies, with a focus on delivering scalable systems. Seeking opportunities to solve complex problems while advancing expertise in emerging technologies.

EDUCATION

Vellore Institute of Technology, Bhopal   B.Tech in Computer Science and Engineering
September 2022 - May 2026   *CGPA: 8.63/10*

TECHNICAL SKILLS

- **Programming**: Python, C++/C, Java, JavaScript
- **Web Development**: Node.js, HTML, CSS
- **Data Science**: Machine Learning, OpenCV, scikit-learn
- **Databases**: MongoDB, MySQL
- **Concepts**: Data Structures & Algorithms, OOPs

WORK EXPERIENCE

Defense Laboratory Jodhpur (DLJ) DRDO   Dec 2024 - Jan 2025
DRDO

- Implemented a Python-based automated report generation system that reduced manual processing time by 70% , integrating data visualization (Matplotlib) and PDF creation (PyPDF2).
- Built a web-based simulation data management platform with a scalable SQL database, handling 10,000+ records with 99.9% uptime.
- Constructed an image analysis pipeline using OpenCV and Python; extracted infrared data to identify temperature anomalies, improving defect detection rates by 15% in thermal imaging tests.

EU Project in Collaboration with ESA   October 2024 – November 2024
TU Delft (Virtual)   *Netherlands*

- Developed an analytical framework in Python to assess loads on upper-stage thrusters for ESA, improving simulation accuracy by 25%.
- Applied Python to solve aerospace engineering challenges, reducing computation time for trajectory analysis by 40%.

Machine Learning Intern   August 2024
TU Delft (Virtual)   *Netherlands*

- Created ML algorithms to forecast GPS positions, reducing signal errors by 30% in satellite navigation systems.
- Generated trajectory prediction models using K-Nearest Neighbors, achieving 92% accuracy in test scenarios.
- Integrated error correction methods for atmospheric interference, improving signal reliability by 20%.

PROJECTS

Drowsiness Detection *Accuracy: 98%*

- Trained a YOLOv5 model on a custom dataset of 5,000+ images, achieving 98% accuracy in real-time drowsiness detection.
- Implemented an alert system for vehicle safety, reducing false positives by 15% compared to baseline models.

Auto-Gen Report: Intelligent Document Automation

Automated report generation using Python, saving 10+ hours/week for researchers by eliminating manual PDF formatting.Integrated C++ modules for cross-platform compatibility, reducing runtime by 35% on Windows/Linux systems.

Smart Route Optimization Using Satellite Data

- Built a FastAPI backend with NetworkX OSMnx, reducing route calculation time by 50%.
- Integrated Google Elevation and Open-Meteo APIs, improving weather-aware navigation accuracy by 40%.

CERTIFICATIONS

- Industrial IoT Markets and Security (Coursera, 2024)
- Career Essentials in Data Analysis (Microsoft + LinkedIn Learning, 2024)
- NPTEL Cloud Computing (NPTEL, 2024)
- DSA + Java (Apna College, 2024)

INVOLVEMENT

Panel Member May 2024 – Present

VIT Bhopal, IOS Club

- Monitored financial records including budgets, investments, and expenditures

Event Management Co-Lead February 2024 – Present

VIT Bhopal, IOS Club

- Planned 5+ events with 100+ attendees, streamlining logistics to cut setup time by 25%.