

# Aditya Pratap Singh

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in Aditya Pratap Singh    🌐 AdityaSinghDevs

## Summary

A dedicated second-year AI and Data Science undergraduate with a strong foundation in Python, PyTorch, and advanced ML/DL techniques, including CNNs, RNNs, Transformers, and LLM integration. Experienced in developing innovative solutions through projects in computer vision, automation, and open-source AI optimization. Recognized for leadership in technical community initiatives and national hackathons, I am eager to apply my analytical skills and collaborative mindset to deliver impactful, technology-driven outcomes across diverse industries.

## Skills

- **Languages:** Python, Java
- **Libraries and Frameworks:** Numpy, Pandas, Matplotlib, Scikit-learn, FastAPI, PyTorch
- **AI Concepts:** Linear/Logistic Regression, Decision Trees, Random Forest, CNN, RNN, NLP, Transformers, BERT, Prompt Engineering, LLM Integration, Parameter-Efficient Fine-Tuning, AI Integration.
- **Tools:** Git, GitHub, Docker, Postman, LangFlow, Jupyter, Figma, Vercel, Streamlit, Cursor, Replit.
- **Platforms and APIs:** Google Colab, Kaggle, Hugging Face, OpenAI, Groq, AWS
- **Familiar Areas and Frameworks:** Text-to-Speech (TTS) basics, RAG (Retrieval-Augmented Generation) exploration, CI/CD workflows, MERN stack

## Experience

### Advait (AI Society), VIPS-TC

*Deputy Vice President*

*Feb, 2025 - Present*

- Leading a 250+ member technical community focused on AI and emerging tech.
- Organize and host seminars, workshops, and internal hackathons on AI/ML, vision models, and automation based systems.
- Collaborate with industry experts and open-source contributors to promote peer learning and AI research culture.

### Open Source Contributions

*OpenVINO™: Intel's Computer Vision Library*

*Dec 2024 - Feb 2025*

- Contributed to Anomalib by integrating external logging platforms (WandB, Comet, TensorBoard) for model benchmarking.
- Fixed performance metric logging bugs and built a unified logger configuration pipeline.
- Developed memory-optimized video handling features for Datumaro and enhanced CLI tools for key frame extraction.

## Projects

### SkySentinel-X: Drone vs. Bird Classification System — 2024

[GitHub](#) [🔗](#)

- Developed a radar-based aerial surveillance system leveraging STFT spectrogram imagery from synthetic micro-Doppler signatures, achieving 94.71% accuracy and 0.9478 weighted F1-score across five drone and bird classes.
- Implemented using FastAI, PyTorch, and ResNet50, with stratified sampling, weighted loss for class imbalance, and advanced data augmentation to reflect real-world flight dynamics.
- Delivered end-to-end evaluation with classification reports, precision-recall metrics, and robust validation workflows, enabling reliable drone-vs-bird detection for security monitoring.

## VULKYRIE — Vulture Conservation & Diclofenac detection kit — 2025

[GitHub](#) [↗](#)

- Designed a 800Rs kit with ESP32 and TCS3200 sensor to detect Diclofenac via colorimetric reaction, costing 100Rs per test.
- Trained a quantized Random Forest model on custom RGB dataset, achieving 95% accuracy for concentration detection.

## ORCA: Real-Time Computer Vision Wearable — 2025

[GitHub](#) [↗](#)

- Developed a 800Rs wearable using ESP32-CAM for real-time face recognition and object detection, enabling smart building analytics.
- Integrated models like Sface, Yunet, YOLOv10 and MiDaS, achieving 93.9% mAP and  $\pm 10$  cm depth accuracy at 10 FPS.
- Optimized local processing for audio feedback, supporting assistive and surveillance applications.

## Reddit-Persona: LLM based User Persona Generator — 2025 —

[GitHub](#) [↗](#)

- Built a production-grade persona generation system using Groq's LLaMA 3.3 70B model to analyze Reddit user behavior and create comprehensive UX-focused user personas from public posts and comments.
- Implemented chunk-based LLM inferencing pipeline with 2000-character semantic blocks, developed dual interfaces (CLI + Streamlit UI), and integrated PRAW for robust data scraping with graceful error handling.
- Engineered modular architecture with separate configuration management, environment-based API credentials, comprehensive documentation, and downloadable formatted outputs for both technical and non-technical users.

## Education

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### Education

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#### Guru Gobind Singh Indraprastha University (GGSIPU)

2023 – 2027

Vivekananda Institute of Professional Studies – Technical Campus (VIPS-TC)

**GPA: 7.8**

- B.Tech in Artificial Intelligence and Data Science

#### Shanti Gyan Niketan Public Sr. Sec School

*Graduated: 2021*

- Higher Secondary (10+2) – PCM with Computer Science

## Achievements

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**Shortlisted, Smart India Hackathon 2024** (Top 8 college teams): Led a 6-member team to clear intra-college rounds, representing VIPS .

**Honourable Mention, Enigma'24 Hackathon, Bennett University:** Recognized for innovative real estate environmental data prediction using Random Forest, outperforming 100+ teams.