Kushagra Agrawal
Data Scientist

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🪪 PROFILE

I am a budding Data Scientist with hands-on experience in Artificial Intelligence, Deep Learning, Computer Vision, and Generative models. Actively building applications of AI Agents with proven ability to prototype end-to-end solutions, from automating complex data workflows to creating sophisticated, interactive AI applications.

🧠 SKILLS

Languages & Tools: Python, MySQL, LangChain, LangGraph, TensorFlow, PyTorch, OpenCV Core

Skills: Machine Learning, Deep Learning, Agentic AI, Computer Vision, Data Pipelines, YOLO

Dev Tools: Git & GitHub, Docker, MLflow, Postman, Firebase, n8n

Soft Skills: Problem Solving, Communication, Documentation, Team Collaboration

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💼 PROFESSIONAL EXPERIENCE

AI & Data Science Intern | @Unihox   **July 2025 – Nov 2025**

- **Architected and deployed a production-grade multi-agent AI system featuring specialized autonomous agents** (like Research, Multimodal Fusion etc.) with **advanced orchestration strategies** including **neural ensemble coordination**, and **consensus-based decision making**.

- **Engineered end-to-end backend infrastructure for AI-driven platform (Aiyuh)**, integrating PostgreSQL & MongoDB databases **(processing 1K+ patient records)**, Redis caching layer, **Pinecone vector database** for semantic search, and **real-time WebSocket communication**— **managing full ML lifecycle** from data ingestion to **containerized deployment via Docker & DigitalOcean**.

- **Developed NLP-powered doctor matching engine** utilizing sentence transformers, **multi-criteria scoring algorithms (35% specialization, 20% availability, 15% experience...)**, and dynamic doctor-patient matching—**eliminating hardcoded mappings** through ML-based semantic search **achieving 95%+ match accuracy** for personalized healthcare recommendations.

- **Implemented scalable data processing pipelines** featuring centralized embedding service, **Pinecone vector indexing for 3+ specialized knowledge bases**, unified database management with **connection pooling optimization**, and Redis-backed caching strategies—**achieving <100ms query latency** for **semantic search across 5K+** health-related documents.

💼 PROJECTS

NexusAgent.ai [Platform Link](#)

- **Engineered an end-to-end AI interview Agent platform leveraging Google AI SDK and Vapi AI** to deliver real-time, voice-interactive mock interviews instant performance analysis.

- **Implemented Vapi Web SDK for seamless voice interactions,** that simulate realistic interview scenarios **with live speech recognition, natural language processing and dynamic response generation.**

- **Designed secure backend infrastructure using Firebase Firestore for data management, Firebase Auth for user authentication, and Firebase Admin for server-side operations.**

- **Architected a comprehensive automation system using GitHub Actions for scheduled cron jobs, delivering automated email reminders (24h before interviews), weekly performance reports with PDF attachments, AI-powered** interview suggestions**, and gamified streak tracking** to drive user engagement.

Vision Play [GitHub Link](#)

- **Developed a computer vision-based system** using **YOLO-based object detection** architecture to perform real-time tracking and trajectory analysis of moving objects in video streams, processing 30+ FPS with 90%+ detection accuracy across sports analytics and surveillance applications.

- **Implemented camera movement estimation and perspective transformation** to accurately measure object positions in real-world coordinates enabling precise spatial measurements with sub-meter accuracy and movement analysis.

- **Designed an advanced tracking system** to compute the **speed and distance** of moving objects using frame-by-frame analysis, maintaining consistent object identity across occlusions and rapid movements in dynamic scenes.

- **Optimized computer vision pipeline** through vectorized NumPy operations, **OpenCV GPU acceleration, and YOLOv8 model quantization, achieving 3x performance** improvement for real-time processing of **HD video streams (1080p @ 30 FPS) with <50ms latency** per frame on standard hardware.

🎓 EDUCATION

Bachelor of Computer Applications (BCA)

Amity University, Noida — CGPA: 9.08

2024 – 2027

Noida, Uttar Pradesh

- Relevant Coursework: Data Structures & Algorithms, Data Science, Fuzzy Logic, Big Data

📑 CERTIFICATIONS

- **Deep Learning Specialization – DeepLearning.AI**
- **Generative AI for Everyone – DeepLearning.AI**
- **Python for Data Science, AI & Development – IBM**

📑 Publications

- **My Data Science Lessons So Far** (11/2024) Link
- **Struggles in My Data Science Journey** (08/2024) Link
- **My Journey into the World of Data** (08/2024) Link