

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 **Dev Tools:**

Git & GitHub, Docker, MLflow, Postman, Firebase, n8n

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

📁 PROFESSIONAL EXPERIENCE

AI & Data Science Intern | @Unihox

July 2025 – Present

- 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](#)