

Akshit Srivastava

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Research Interests

Natural language pragmatics and language driven control in robotics
Computational models and architecture for language understanding in LLMs.
Embodied Human-AI Interaction.
Deep learning architecture design.
Applied ML for real world problems.
Mechanistic Interpretability.

Education

B.Tech. Computer Science Engineering (AI & ML), CGPA: 8.38/10, VIT Bhopal University, 2026.

Professional Positions

Software Engineer Trainee, W4S Lab, Indian Institute of Technology, Delhi, March 2026–

- Developed deep learning algorithms for a real-time monitoring and fault analysis system for 5G wireless networks in an R&D environment.
- Deployed the algorithms and Machine Learning (ML) pipelines on NVIDIA Jetson AGX-class edge computing modules to target low-latency telecom applications.
- Implemented critical components of the algorithm using custom CUDA kernels to accelerate complex computations and ML workloads.

Research Intern, RRSC North, NRSC, Indian Space Research Organization, Oct 2024-Dec 2024

- Designed and integrated an ML/DL based pipeline for early warning systems over meteorological data to monitor vector-borne disease outbreaks, to reduce manual analysis time by automating feature extraction techniques across various geospatial datasets.
- Performed multivariate time-series analysis to quantify seasonal and environmental correlation for disease incidence
- Tech Stack: Python, Scikit-learn, TensorFlow, QGIS, ArcGIS, Pandas, NumPy

Publications

A. Srivastava, K. Mirza, S. Saran. Effect of Meteorological Factors and Seasonal Dynamics on Dengue Incidence in Haryana Region. Abstract submitted, *47th Asian Conference on Remote Sensing (ACRS)*, 2026.

A. Srivastava. AIYA: Automatic Inferential Yielding Agent. *Research Square*, preprint, 2026. <https://doi.org/10.21203/rs.3.rs-7668128/v1>

Technical Writings

Gradient Descent: An Intuitive Approach. *Medium*, Feb 2026. <https://medium.com/@akshit0405/gradient-descent-an-intuitive-approach-d515d4c631b4>

Linear Regression: Understanding the Intuition from First Principles. *Medium*, Jan 2026. <https://medium.com/@akshit0405/linear-regression-understanding-the-intuition-from-the-first-principles-96669fc92d0e>

GPT-SoVITS: A Practical Guide to Voice Synthesis using Python. *Medium*, Sep 2025. <https://medium.com/@akshit0405/gpt-sovits-a-practical-guide-to-voice-synthesis-using-python-cce78818c933>

Projects

Q.U.O.R — Quorum for Unified Opinion and Resolution

Architected a multi-agent LLM council where three language models collaboratively reason and challenge each other's outputs and converge via a majority-voting consensus mechanism.

Implemented RAG-based document retrieval by integrating Sentence Transformers and FAISS to enable efficient semantic search and context-aware research generation

Tech Stack: Python, PyTorch, Langchain, Sentence Transformers, GroqAPI, Hugging-face Transformers

A.I.Y.A : Automatic Inferential Yielding Agent

Built an end-to-end multimodal conversational AI agent through Python ASR/LLM/TTS voice pipeline with a WebGL (Three.js) rendering engine; Achieved 144 FPS and <400ms via streaming audio chunking and real-time blend shape inference.

Published corresponding methodology as a preprint on ResearchSquare; the system handles dynamic VRM model loading and live lip-sync with mel-spectrogram features.

Tech Stack: Python, FastAPI, WebSockets, JavaScript, Three.js, VROID Studio, Web Audio API, Langchain, ChromaDB, GPT-SoVITS, Parakeet, WhisperX

Volunteering Projects

AI Based Road Inspection System, Omdena VIT Bhopal X Omdena Mexico Chapter

Fine-tuned YOLOv8 on a custom annotated dataset of road anomalies (Potholes, cracks and alligator-cracks), achieving 32.6% mAP@0.5 and deployed to an interactive streamlit dashboard for real-time multi-class detection.

Collaborated cross-contentitally (India-Mexico) in an open source setting; Led a team in the research and implementation of a road-based anomaly detection dashboard, and presented a technical seminar on Object detection with YOLO and similar architectures.

Tech Stack: Python, YOLOv8, Streamlit, Roboflow, OpenCV

AI Based Monitoring Water Quality in Bhopal Region, Omdena VIT Bhopal Chapter

Developed and deployed a data visualization and analysis dashboard for effective monitoring of water-quality using satellite based images that were collected using Google Earth Engine API and further integrated Tableau-based analytics with a streamlit web application for real-time, interactive water quality monitoring.

Tech Stack: Google Earth Engine, Data Analysis, Data Management, Tableau, Streamlit

Leadership & Service

Student Coordinator, Project Exhibition, Industrial Conclave VITB, Jul 31 – Aug 03, 2024.

General Secretary, Data Science Club, VIT Bhopal, 2025–2026.

Technical Team Member, Data Science Club, VIT Bhopal, 2024–2025.

Honours and Awards

Runner-up, Space India Hackathon, IISF'23 – Department of Science & Technology (DST), Government of India, and Vijnana Bharati (VIBHA), Jan 2024.

Skills

Languages: Python, C++, C, SQL, JavaScript, CUDA (Beginner).

ML/DL Frameworks: JAX, PyTorch, TensorFlow, Keras, Hugging Face Transformers, scikit-learn, LangChain.

Tools & Infrastructure: Git, Docker, FastAPI, Streamlit, Plotly.

Data & Visualization: Tableau, Power BI, MongoDB, GIS Software (ArcGIS, QGIS).

Last updated: June 30, 2026