Vidushee Vats

+(91) 97182-22909 | vatsvidushee@gmail.com

Education

Bennett University, GPA: 9.60 — Greater Noida, UP

Bachelor of Technology in Computer Science, Artificial Intelligence — *Expected May 2025*

Experience

Research Affiliate — Aug 2024 – Present

Georgia Institute of Technology, Atlanta

- **Currently Working**: Currently improving vision-language models (VLMs) for visual grounding and developing a multi-agent framework to transcribe live sports, emulating the style of human commentators.

Computer Vision Intern — May 2024 – Aug 2024

Zocket

- Implemented Zero-Shot Product Classification model with optimized space and GPU inference time
- Fine-tuned Inpainting Model on a custom dataset for text-based background generation.
- Built a pipeline to fetch visually semantic videos based on query out of **100K+ videos within 0.5 seconds.**

Artifical Intelligence Research Assistant — Dec 2023 – March 2023

IIT-I Drishti

- Retrieved semantic similarity of **100K+** parsed-legal documents using **Mistral-7B Instruct**
- Structured the json files into different formatted sections asynchronously using OpenAI API
- Executed a comprehensive analysis of SpaCy's capabilities for text-preprocessing, leading to successful implementation and a **25%** increase in data processing efficiency

Projects

LLaVA-PlantDiag - IJCNN 2024 | *PyTorch, Transformers, ZeRO, CUDA, RAPIDS*

- Built a novel multi-turn conversation dataset on plant phytopathology with **6000+** unique responses
- Trained large scale multimodals on **distributed systems** using PyTorch and **DeepSpeed**.
- Maintained and evaluated several models for benchmarking on custom data.

Strategic AI Powered Cosmic Exploration (SPACE) | *Machine Learning, Python, Scikit-Learn, Matplotlib*

- Analysed the radius and area of impact of Near Earth Asteroids on **real-time data** from NASA JPL
- Teamed with 3 data-enthusiasts. Forecasted potential future NEAs and NEOs over **778,000+** data points
- Leveraged data visualization to show the geographical impact and extent of devastation, aiding in possible resource allocation and **reducing response time by 10%**

Technical Skills

Tools: Python, PyTorch, Tensorflow, cuDF, cuML, CUDA Programming, JAX, RAPIDS, TF-Serving, DeepSpeed, Distributed Computing using Dask, AWS

Theory: Machine Learning, Deep Learning(Transformers, Stable Diffusion), Vision-Language Multimodals(ImageBind, NeXT-GPT, LLaVA), 3D(NeRF, 3D-LLM), Descriptive and Inferential Statistics,

Publications

- K. Sharma, **V. Vats**, A. Singh .. "LLaVA-PlantDiag: Integrating Large-scale Vision-Language Abilities for Conversational Plant Pathology Diagnosis," 2024 International Joint Conference on Neural Networks (IJCNN), Yokohama, Japan, 2024, pp. 1-7, doi: 10.1109/IJCNN60899.2024.10651096.
- U. Gupta, R. Golash, **V. Vats** and K. Sharma, 'An Improved Hybrid Model for Target Detection' 2023 ICETCI, Hyderabad, India, 2023, pp. 265-270, doi: 10.1109/ICETCI58599.2023.10330945.

Honours and Achievements

- 1st Place Winner of Project Showcase - 2023,Project: SpectrumSync - Multimodal Fusion for Next-Gen Plant Health
- 1st Place Winner of Project Showcase - 2023,Project: From Textual Prompts to Multimodal Story Continuations
- Appreciation Letter From Dean of School of Computer Science and Technology : Top "3%" of Class of 2021- 2025
- Led a team of 5 as the Head Technical Writer at ACM BU