Neha R

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Professional Summary

Integrated M.Tech student in AI/ML (8.51 CGPA) with proven experience in Python, PyTorch, and TensorFlow. Developed end-to-end solutions, including a generative AI for architecture (82.56 BLEU) and a real-time sign language detector. Seeking to apply computer vision, NLP, and generative model skills to innovative AI projects.

Education

Vellore Institute of Technology (VIT), Bhopal Aug 2022 – Present

- Integrated M.Tech in Artificial Intelligence & Machine Learning
- CGPA: 8.51

Bhavan's Vidya Mandir, Eroor June 2019 – March 2022

- Higher Secondary (STD 12): 93.2
- Secondary (STD 10) : 92.4

Technical Skills

- **Languages:** Python, Java, SQL
- **Libraries & Frameworks:** TensorFlow, PyTorch, Scikit-learn, Pandas, NumPy, MediaPipe, OpenCV, Matplotlib
- **Developer Tools:** Git, GitHub, VS Code, Linux/Unix
- **Core Concepts:** Deep Learning, Computer Vision, Natural Language Processing (NLP), Generative AI, Data Structures Algorithms, System Design

Projects

Generative AI for Automated Floor Plan Generation Ongoing

- **Engineered** a novel generative AI system to automate architectural design, **achieving** a BLEU score of 82.56 and 91.2% dimensional accuracy, **by** fine-tuning a T5 Transformer model to translate natural language descriptions into structured JSON floor plans.
- **Enhanced** model performance and robustness **by developing** a data augmentation pipeline for the ProcThor 10k dataset, generating over 34,000 unique text-to-JSON training examples and implementing a rule-based validation system for architectural integrity.
- **Delivered** a practical AI design tool **that reduced** layout generation time to an average of 3.2 seconds **by utilizing** PyTorch, the Hugging Face ecosystem, and Matplotlib for backend processing and visualization.

Real-Time Sign Language Detection' March 2024 – May 2024

- Developed a real-time demonstration module that integrates the trained model to process live camera feeds and display translated text, providing instant feedback
- Evaluated model performance using Tensor-board and achieved over 90
- Analyzed and documented model overfitting issues stemming from a limited custom dataset and proposed future enhancements, including data augmentation and exploring hybrid model architectures to improve generalization .

Certificates

Cloud Computing – NPTEL March 2024 – May 2024

- Gained expertise in Cloud Computing architecture, virtualization, and cloud service models (IaaS, PaaS, SaaS).

Applied Machine Learning in Python Nov 2023 – Dec 2023

- Developed proficiency in data preprocessing, model selection, and deployment of machine learning algorithms using Python and Scikit-learn.