

# Neha R

Ernakulam, India | nehar.xiaeroor@gmail.com | 9020193920 | LinkedIn | GitHub

## Education

### Vellore Institute of Technology (VIT), Bhopal

Aug 2022 – May 2027

- 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

Jan 2025-Apr 2025

- **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

- Engineered an end-to-end system to interpret and translate sign language gestures into text in real-time using computer vision and sequential deep learning models.
- Evaluated model performance and visualized training metrics using TensorBoard, achieving over 90% categorical accuracy.
- 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

- Mastered core concepts of cloud architecture, including virtualization and service models (IaaS, PaaS, SaaS), to understand scalable system deployment.

### 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.