

# PARAS PARANI

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## EDUCATION

### Masters Of Science - Computer Science

May 2025

Florida International University; Miami, FL, USA

GPA: 3.83/4.0

### Bachelor of Technology - Mechatronics

July 2022

Symbiosis University of Applied Sciences; Indore, India

GPA: 3.71/4.0

## SKILLS

**Machine Learning & Deep Learning:** Vision Transformers, Reinforcement Learning, LLMs, Neural Networks, NLP, PyTorch, TensorFlow, Explainable AI (XAI), Weights and Biases, PEFT, Accelerate

**Programming:** Python, Bash, CUDA, C++

**Software Engineering:** Django, REST APIs

**Advanced Courses:** Advanced Topics in Machine Learning, Operating Systems, Mobile and Wireless Networks

**High-Performance Computing:** SLURM (Simple Linux Utility for Resource Management), Kubernetes

**Cloud & Infrastructure:** AWS, Azure

## PUBLICATIONS

**P. Parani, U. Mohammad and F. Saeed** "Lightweight Transformer exhibits comparable performance to LLMs for Seizure Prediction: A case for light-weight models for EEG data" accepted to the **2024 IEEE International Conference on Big Data** workshop HPC-BOD

**P. Parani, U. Mohammad and F. Saeed** "Utilizing Pretrained Vision Transformers and Large Language Models for Epileptic Seizure Prediction" accepted to the 8th International Conference on Data Science and Machine Learning Applications (CDMA 2024) ([Link](#))

## EXPERIENCES

### Florida International University | Miami, FL, USA

May 2024 - Present

*Graduate Research Assistant*

- Designing a multi-modal deep learning model to integrate images and multivariate time-series data for Alzheimer's detection, focusing on enhancing predictive accuracy and scalability
- Fine-tuned transformer models and LLMs on EEG data, achieving a 15% accuracy improvement in seizure prediction.
- Developed a custom, lightweight transformer-based architecture in PyTorch, outperforming fine-tuned LLMs by 5% in seizure prediction accuracy.
- Leveraged Weights and Biases for experiment tracking and hyperparameter optimization to enhance model performance.
- Managed large-scale job distribution with SLURM for efficient LLM fine-tuning, reducing training time by 20%.
- Improved model generalization through domain shift analysis and adversarial training

### Ignatiuz Software Pvt Ltd | Indore, India

September 2021 - July 2023

*Senior Associate*

- Led a team of 2 to successfully revamp the Scoutfoto project, delivering a more efficient and scalable platform
- Developed the backend architecture and designed the database structure, optimizing data storage and retrieval
- Designed and implemented scalable Django-based APIs, ensuring seamless integration and enhanced functionality
- Deployed the platform on Azure, achieving an 80% improvement in operational efficiency and system reliability

## PROJECTS

### UtilLLM\_EPS | [GitHub Link](#)

August 2024

- Preprocessed EEG data for compatibility with ViTs and LLMs, enhancing seizure prediction accuracy by 15%
- Adapted and fine-tuned ViT and LLM architectures, focusing on key features in EEG time-series data
- Optimized model performance through hyperparameter tuning and tracked experiments with Weights and Biases
- Documented and prepared the model for deployment, making it accessible for further research via GitHub