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## Profile

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AI & Machine Learning enthusiast with hands-on experience in **Statistical Models, Transformer Models, and Large Language Models (LLMs)**. Passionate about **model explainability, fine-tuning techniques**, and **AI-powered applications**. Skilled in integrating **LIME, SHAP, and LLMs (GPT-4, Gemini AI)** to enhance interpretability. Experienced in **efficient fine-tuning (LoRA, PEFT)** and optimizing large models for real-world use.

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## Technical Skills

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Programming: Python

- Explainable AI: SHAP, LIME, Grad-CAM, Integrated Gradients
- LLM : Llama 3.1
- Deep Learning: CNNs, Transformers, LLMs
- NLP Models: GPT-2, DistilBERT
- LLM Fine-Tuning: LoRA, PEFT, Quantization (4-bit, 8-bit)
- Frameworks: PyTorch, TensorFlow , Hugging Face
- Tools: Gemini AI, GPT-4
- Domains: XAI, NLP, Deep Learning , Model Interpretability

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## Work Experience

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**AI & Machine Learning Engineer**

**L&T Technology Services | July 2024 – Present**

### **Explainable AI – Statistical Models (Honda Use Case)**

- Applied **LIME and SHAP** to explain predictions of a statistical sensor-based quality model (Gx, Gy, Gz).
- Delivered **instance-level and global feature attributions** for “Good / No-Good” classifications.
- Integrated **GPT-4 and Gemini AI** to automatically convert XAI outputs into **business-friendly explanations** for non-technical stakeholders.
- Presented explainability results through **visual reports and demo videos** to cross-functional teams.

### **Explainability in Transformer Models**

- **Investigated feasibility of applying SHAP** to transformer architectures.
- **Fine-tuned GPT-2 and DistilBERT on Amazon Reviews for sentiment classification.**
- Identified and resolved incorrect attribution issues by improving fine-tuning strategy.
- Successfully generated **token-level and feature-level explanations** for transformer predictions.

### **Exploration of LLMs & Efficient Fine-Tuning**

- Explored explainability extensions for Large Language Models (LLMs).
- Experimented with 4-bit and 8-bit quantized model loading **for memory-efficient inference.**
- Implemented PEFT techniques, **including LoRA, to fine-tune LLMs with reduced compute cost.**
- Evaluated trade-offs between performance, memory usage, and interpretability.

## Hackathon

- Participated in **L&T internal hackathon** focused on applied AI solutions.
- Implemented **Grad-CAM on ResNet** for **eye disease classification**, highlighting class-discriminative regions.
- Demonstrated how CNN models learn visual patterns and validated predictions using saliency maps.

## EDUCATION

Bapuji Institute Of Engineering And Technology 2020 – 2024

Computer Science & Engineering

7.8/10 CGPA

Vishwaachetana Vidyaniketana Pu College 2018 - 2020

73 percent

OM National PU College 2018

71 percent

