Previous AI Projects

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1. LipNet (Lip Reading using Deep Learning)

- Developed a deep learning model capable of recognizing spoken words through visual lip movements.
- Implemented a combination of spatiotemporal Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs).
- Trained and tested the model on the GRID dataset, achieving sentence-level prediction with high accuracy.

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2. "All You Need Is Attention" – Transformer Architecture Reproduction

- Reproduced the original Transformer model based on Vaswani et al. (2017).
- Built from scratch using PyTorch, focusing on Multi-Head Attention, Positional Encoding, and Layer Normalization.
- Evaluated model on translation tasks and compared its efficiency against traditional RNN-based models.

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3. Doctoral-Level Fine-Tuning of LLMs

- Fine-tuned large language models (LLMs) such as GPT and LLaMA using techniques like LoRA and PEFT.
- Conducted experiments on domain-specific datasets to evaluate task-specific performance improvements.
- Focused on optimizing training efficiency while maintaining high model accuracy and stability.

Summary

These projects have significantly strengthened my skills in deep learning, computer vision, and natural language processing. I've gained practical experience in working with state-of-the-art architectures, fine-tuning large models, and conducting impactful AI research.