Lab 6 AWS

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Lab-06: AWS Machine Learning University Module 2 Lab 05 Fine Tuning Bert

In this lab, I fine tuned a pre trained BERT model to classify product reviews as positive or negative. I learned about transfer learning, tokenization and model fine tuning, reinforcing key ML concepts like dataset preprocessing, loss functions, and optimization techniques. These labs connected to broader ML principles by demonstrating how pre trained models accelerate NLP tasks instead of training from scratch. One of the most notable moments was realizing how much freezing model layers impacts training efficiency. Also a major challenge was dealing with overfitting. When I increased the number of epochs, validation loss stopped improving. I tackled this by adjusting learning rates and monitoring loss curves more closely. Tokenization also confused me at first, especially understanding how subwords impact model predictions but experimenting with different text inputs helped clarify things. Through trial and error I also got better at debugging and interpreting model performance. This lab also deepened my understanding of NLP and showed me how accessible fine tuning pre trained models can be. I was surprised by how small changes like tweaking optimizers or freezing layers made a big difference. These skills are super relevant for future projects in AI research and especially in applications like sentiment analysis or chatbot development. In this lab I'd also like to experiment with different hyperparameters and try a larger dataset to see how it affects generalization aswell. I'm also curious about other transformer models like BERT or RoBERTa

and how they compare. Overall, these labs reinforced how powerful deep learning is in NLP and how much room there is to refine models for real world applications.