Sentiment analysis

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We examined the training performance of the DistilBERT model on the Stanford Sentiment Treebank-2 dataset, focusing on training times across different platforms and comparing the efficiency of various training environments.

Model and Framework Used

- **Model**: DistilBERT (a smaller, faster version of BERT)
- **Framework**: PyTorch
- **Libraries**: Transformers, Datasets, Pandas

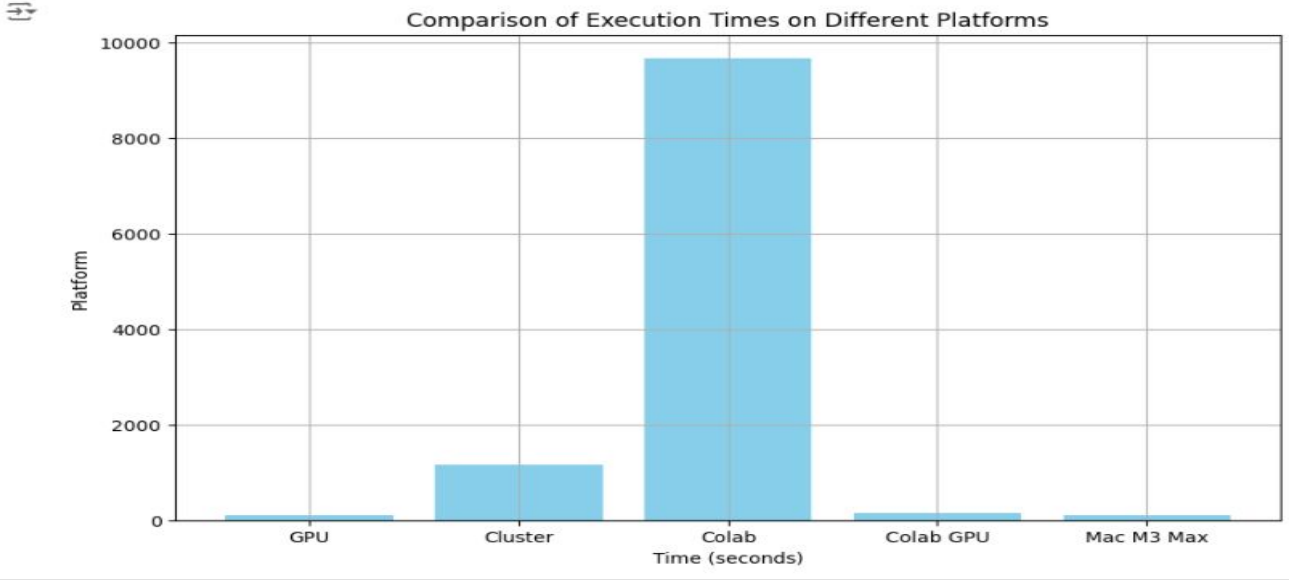
Key Metrics Measured

- **Training Time**: Time taken to train the model
- **Resource Utilization**: Memory and CPU/GPU usage

Times

- GPU: 92.999 s (around 1.5 minutes)
- Cluster: 1155.50 s (around 19 min)
- Colab: 9673.45 s (161 min)
- Colab GPU: 140.006 (around 2 min 20 secs)
- Mac M3 Max: 112.59 s (around 2 min)

```
print(f"Local Training Time: {end_time - start_time} seconds")
✓ 0.0s
Local Training Time: 112.59222388267517 seconds
```



Acknowledgment: Jeromey helped with cluster GPU

What we learned:
HPC clusters and gained a foundation in parallel computer architectures, cluster operating systems, resource management, and containers. We also learned how to use transformers, pytorch and submitting SLURM jobs.

Thank You