Email Intent Classification Project Report

Introduction

The project revolves around the creation of an **Email Intent Classification Model**. The model takes a small text prompt as input and predicts the intent of the prompt. The model is capable of classifying the intent into one of the following ten categories: ‘send’, ‘list’, ‘trash’, ‘read’, ‘reply’, ‘untrash’, ‘forward’, ‘star’, ‘trash_list’, and ‘unknown’.

Dataset

The dataset for this project is available on a GitHub repository. The dataset is stored in a CSV file named ‘dataset_sheet’. The dataset was sourced from Hugging Face and contains 1000 rows.

Prediction

To generate predictions for a given sentence, the following steps are followed:

1. Run all the cells in the provided Jupyter notebook except the cell containing the function fit(epochs, lr, model, train_loader, val_loader, opt_func=torch.optim.SGD). This function is used to train the model, which is not required for generating predictions.
2. Load the model using the lines model2 = to_device(JigsawModel(), device) and model2.load_state_dict(torch.load('nlu.pth')).{nlu.pth is provided in github repo}
3. Use the function predict_sentence(model,sentence) to generate predictions for a given sentence.

Challenges Encountered

During the project, several challenges were encountered:

1. Lack of sufficient GPU for training the model, leading to the use of Google Colab. However, the Colab runtime expired during the process.
2. Difficulty in obtaining a large dataset due to computational power limitations and extended training times.
3. Insufficient data entries to create a test set.

Despite these challenges, the final model achieved a validation accuracy of 0.9622, a training loss of 0.0221, and a validation loss of 0.1313, indicating a high level of performance.

Conclusion

The Email Intent Classification Model is a powerful tool for understanding and categorizing the intent behind email prompts. Despite the challenges faced during its development, the model demonstrates high accuracy and low loss, making it a valuable asset for applications involving email intent classification. Future work may involve expanding the dataset and improving computational resources for enhanced model performance.