Weekly Progress Report

Group Members:

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Work Completed:

This week, our group made some serious progress on our AI chatbot project! We got our environment set up, figured out how to use Hugging Face, and connected our Google Drive for storage. We then grabbed our dataset that we upload on the Hugging Face repository and prepped it for training by creating special input-output pairs. We chose the DistilGPT-2 model to start with because it's smaller and easier to work with. We used the Trainer API from Hugging Face to fine-tune our model, playing around with things like learning rate and batch size. Once we were happy with the results, we saved everything for later use. We even got a basic chatbot function up and running, letting it take user input and spit out AI-generated responses based on our model.

Challenges Encountered:

We definitely hit some snags along the way, though. Getting the tokenization process to play nicely with the model's input and output formats was a pain. We had to tweak the padding and truncation settings to get everything lined up. Overfitting was another headache—the model was doing great on the training data but bombed on the validation set. We figured this was because of our small dataset and the complexity of the model. Finally, getting the chatbot to give coherent responses as the conversation went on was a challenge.

Solutions Implemented:

To solve the compatibility issue, we fiddled with the `max_length` and padding settings during tokenization. For the overfitting problem, we used mixed-precision training and regularization techniques, like weight decay and warm-up steps. As for the chatbot's coherence issues, we limited the conversation history to the last 12 exchanges and put a cap on how many new tokens it could generate.

Tasks for Next Week:

Next week, we're going to focus on making the model even better. We're going to experiment with different hyperparameters, like learning rate, batch size, and the number of epochs. We'll also do a more thorough evaluation on a bigger chunk of the validation dataset to see how well our model generalizes. Finally, we'll start building a more robust version of the chatbot, making it better at handling weird situations and improving the flow of conversation. The goal is to create a chatbot that's super interactive and can handle all sorts of different questions.

Instructor's Feedback:

Instructor's Signature: _____
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