Problem Statement

Fine-tuning the Tiny Llama LLM model to act as a recipe generator

Unique Idea Brief (Solution)

Cooking at home became a popular activity during the pandemic. Many people sought to enter their kitchens and cook for themselves but faced a major problem - where to start? The plethora of of available resources can often become a burden for a beginner.

Hence, introducing this recipe generator. A one-stop solution for all cooking recipes. Made by fine-tuning the Tiny Llama model, this solution can be configured as a chatbot to ask for any recipe you need.

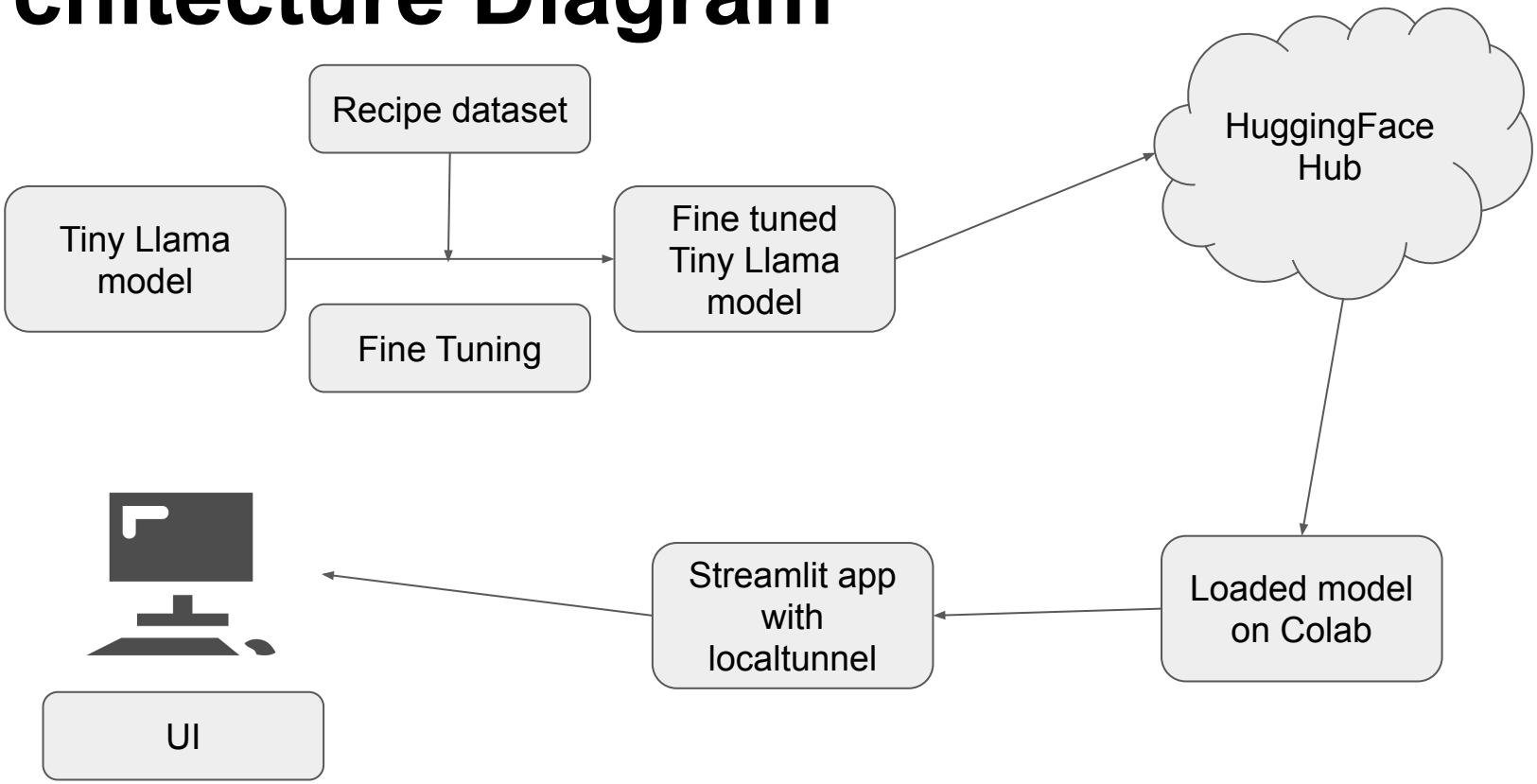
Features Offered

- Fine-tuned Tiny Llama Chat model on an open-source dataset.
- Option for the user to enter in the name of the dish whose recipe is required.
- Generated recipe is displayed to the user.
- Easy to use GUI built using Streamlit.

Process Flow

- Cloned the intel-extension-for-transformers repository.
- Utilised the in-built model fine-tuning function and methods.
- Imported the dataset from Hugging Face Hub.
- Ran the fine-tuning training loop.
- Pushed the fine-tuned model onto Hugging Face Hub.
- In a Google Colab notebook, loaded the model using Transformers and PEFT, and ran human evaluation.
- From Colab, used localtunnel to create a GUI interface using Streamlit.

Architecture Diagram



Technologies Used

- Open source LLMs and datasets
- intel-extension-for -transformers module
- Intel Developer Cloud
- Hugging Face Hub
- Transformers
- Google Colab
- Streamlit

Conclusion

Through this project, a recipe chatbot has been built that utilities the Tiny Llama model fine tuned on a recipe dataset to act as a recipe generator.

A more comprehensive analysis of the project has been provided in the report in the GitHub repository.