**Project Pitch Report: AI Summarization**

### **Understanding the Problem and Our Solution**

Many users on Acme Communications are struggling with information overload in group chats. When they miss a part of a conversation, it becomes difficult to catch up. They often end up scrolling through a wall of messages and still feel unsure about what they missed. This can be frustrating and discouraging. As a result, some users might stop checking their messages as often or even consider switching to a different messaging app that makes things easier to follow.

To solve this, we’re proposing an AI-based feature that summarizes long chat conversations into short, easy-to-read highlights. Think of it as a helpful assistant that scans your messages and gives you the main points, so you don’t have to read everything. This solution would use powerful tools like BERT to understand the content and models like ChatGPT to create summaries that sound natural and human-like. Our goal is to make communication smoother for everyone and keep users engaged on the platform.

### **Project Plan and Timeline**

This project will take about two weeks. In the first few days, we’ll focus on understanding and preparing the data. We’ll explore what the conversations look like, clean them up, and make sure they’re ready for the model to learn from. We’ll also research the best models to use and start building the basic system.

By the middle of the first week, we’ll begin training our model to create summaries. During the second week, we’ll improve how it works by adjusting settings and trying different techniques. Finally, we’ll test the model to see how well it performs, compare its results to human-written summaries, and write up what we learned.

### **Exploring the Dataset**

We’ll be working with the SAMSum dataset, which is a collection of around 16,000 real-life chat-style conversations. Each conversation comes with a summary written by a person. Most of these chats are casual—like friends making plans or chatting about their day—and usually have 8 to 10 messages.

When we looked at the data, we noticed it was very informal, with lots of variation in how people talk. This makes it harder for a computer to understand, but it also makes the task more valuable. To help the model, we’ll do some cleaning: we’ll fix inconsistent speaker names, remove unnecessary symbols or emojis, and split the conversations into smaller, easier-to-learn chunks.

### **Building the AI Model**

Our model will have two main parts. First, the encoder (using BERT) will read and understand the conversation. Then, the decoder (similar to ChatGPT) will take what the encoder understands and write a summary in plain, easy-to-read language.

We chose this setup because BERT is great at understanding context, and ChatGPT-like models are excellent at generating human-like text. We’ll be using pre-trained models, which means they already know a lot from reading large amounts of text before, so we don’t have to start teaching them from scratch.

To measure how well our model does, we’ll use tools like ROUGE, which compares our summaries to the human-written ones. We might also get feedback from people to see if the summaries are actually helpful and easy to read.

### **What We Expect and Why It Matters**

At the beginning, we’ll test a basic approach—like just picking important sentences. But our real goal is to build something more intelligent that can summarize conversations with nuance and accuracy. We’re aiming to improve ROUGE scores from around 0.35 (which is decent) to 0.5 or more (which shows solid performance). More importantly, we want the summaries to feel useful and natural to the user.

This feature will help users by saving them time and making conversations easier to understand. It also benefits Acme Communications by improving user satisfaction, increasing time spent on the app, and even opening doors to premium features in the future. For example, a summary could pop up when someone opens a group chat they haven’t checked in a while. The whole process would be fast and automatic, taking only a second or two.

### **Final Thoughts**

This project is making digital conversations easier to manage. By using AI to create helpful summaries, we’re solving a real problem that many users face. Our model will help people feel less overwhelmed, more informed, and more connected. It also shows how artificial intelligence can turn something as common as group chat overload into an opportunity for better user experience and product innovation.