**AI-Driven Conversational Agents Elevating Chatbot Interactions with Cutting-Edge NLP**

**Abstract**  
In this project, we develop a conversational AI-based WhatsApp chatbot utilizing Microsoft's DialoGPT model, implemented using the Hugging Face library. The chatbot is designed to simulate interactive, human-like conversations by generating responses based on user input. The chatbot stores the conversation history to ensure continuity, providing responses that are contextually relevant. The model generates responses in real time by encoding the user's text, processing it through a pre-trained language model, and producing appropriate answers. The chatbot offers random fallback responses when the model is unable to generate an answer, ensuring smooth interaction. This system demonstrates the application of natural language processing (NLP) and pre-trained transformers to build a user-friendly, interactive chatbot that can be used across various platforms to enhance communication experiences.

**Keywords:** Chatbot, DialoGPT, Transformers, Natural Language Processing, TF-IDF, Hugging Face, Microsoft DialoGPT, Conversational AI