

PROJECT REPORT

Project Title: Pickachu-GPT

A ChatGPT Clone Using Google's Gemini API for Conversational AI

 **Course Title** : Tools and Technologies for Internet Programming

 **Course Code** : CSE-3532

 **Instructor** : Sara Karim

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1. Introduction

The advancement of conversational AI has reshaped how users interact with digital systems. This project, titled Pickachu-GPT, is a web-based AI chatbot application inspired by ChatGPT. It aims to replicate intelligent and context-aware interactions using Google's Gemini API as the conversational backend. The application is developed using modern web technologies to ensure a smooth, responsive, and optimized user experience.

2. Project Objective

The primary goal of Pickachu-GPT is to create a user-friendly interface that enables users to chat with an AI system powered by Google's Gemini model. It seeks to combine Next.js frontend power with Gemini's advanced reasoning to create an intuitive clone of OpenAI's ChatGPT.

4. Technologies Used

Component	Technology Used
Programming Language	TypeScript & JavaScript
Frontend Framework	Next.js 15.3
UI Library	React 18
Backend Integration	Google Gemini API
Styling & Responsiveness	Tailwind CSS (if used)
Image Optimization	<code>next/image</code>
Code Quality Tools	ESLint & Prettier

System Architecture:

User → React UI → Next.js API Route → Gemini API → AI Response → UI

Limitations:

- No chat history or memory is currently stored.
- Gemini API's rate limits must be respected.
- Authentication is not yet implemented (optional future improvement).

Future Enhancements:

- 🌐 Add authentication (Google OAuth or Firebase Auth)
- 🗣️ Voice input/output using Whisper & ElevenLabs
- 📷 Image-to-text input using Gemini Vision API
- 💾 Add conversation memory & user session tracking