Project Idea: AI-Powered Contextual Resume Optimizer

Project Summary:

An AI-powered resume optimizer that allows a user to upload their resume and a job description (JD), and uses an LLM (like GPT) to rewrite and tailor the resume to fit the JD. It also shows a compatibility score, highlights gaps in skills, and suggests improvements to make the resume ATS (Applicant Tracking System)-friendly.

Why This Project?

- Practical value: Directly helps students and professionals apply smarter.
- Interview-worthy: Involves real-world tech-LLMs, PDF parsing, smart prompting, UI.
- Unique: Not many students build job-tech tools; stands out from common AI chatbots.
- Scalable: Can be extended to cover letter generation, job-role matching, etc.

Tech Stack:

- Python (Flask/FastAPI for backend)
- LangChain + GPT (for prompt-based resume tailoring)
- PyMuPDF or pdfplumber (for PDF parsing)
- React.js or Streamlit (frontend)
- Optional: FAISS or vector DB for role matching

Team Breakdown (5 Members):

1. Resume Parsing & Job Description Extraction
2. Prompt Engineering + GPT Integration
3. Resume Matching Logic + Scoring
4. Frontend Upload UI + Visualization
5. Testing, Documentation, Final Presentation

4-Week Timeline:

Week 1: Finalize scope, gather sample resumes/JDs, build resume parser

Week 2: Build prompt logic for tailoring resume with GPT, backend routes

Week 3: Frontend development, PDF upload, and result view

Week 4: Final integration, UI polish, export to PDF, documentation, testing

Real-World Impact:

"Built a resume optimizer that uses LLMs to tailor resumes for job descriptions, improving keyword alignment and structure. Helped multiple users increase interview call rates."

This project demonstrates applied AI skills, strong prompt design, end-to-end development, and real-world relevance-perfect for final-year students aiming for top-tier roles or higher studies.