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# Project 1: AI-Powered Research Paper Analyzer

## Context

The volume of academic publications has increased significantly, making it difficult for students and researchers to efficiently extract meaningful insights from research papers. Manual reading and comparison is time-intensive and often inefficient.

This project aims to develop a web-based analytical tool that enables users to upload research papers and automatically extract structured insights.

## Core Features

- PDF upload and text extraction
- Keyword frequency analysis
- Topic clustering (basic statistical grouping)
- Paper-to-paper similarity computation
- Citation or reference pattern analysis (if available)
- Interactive visual dashboard

## Technical Requirements

- Backend implemented using FastAPI
- Text preprocessing and statistical analysis using Pandas
- Similarity computation using NumPy (e.g., cosine similarity)
- Clean and interactive React dashboard