
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