



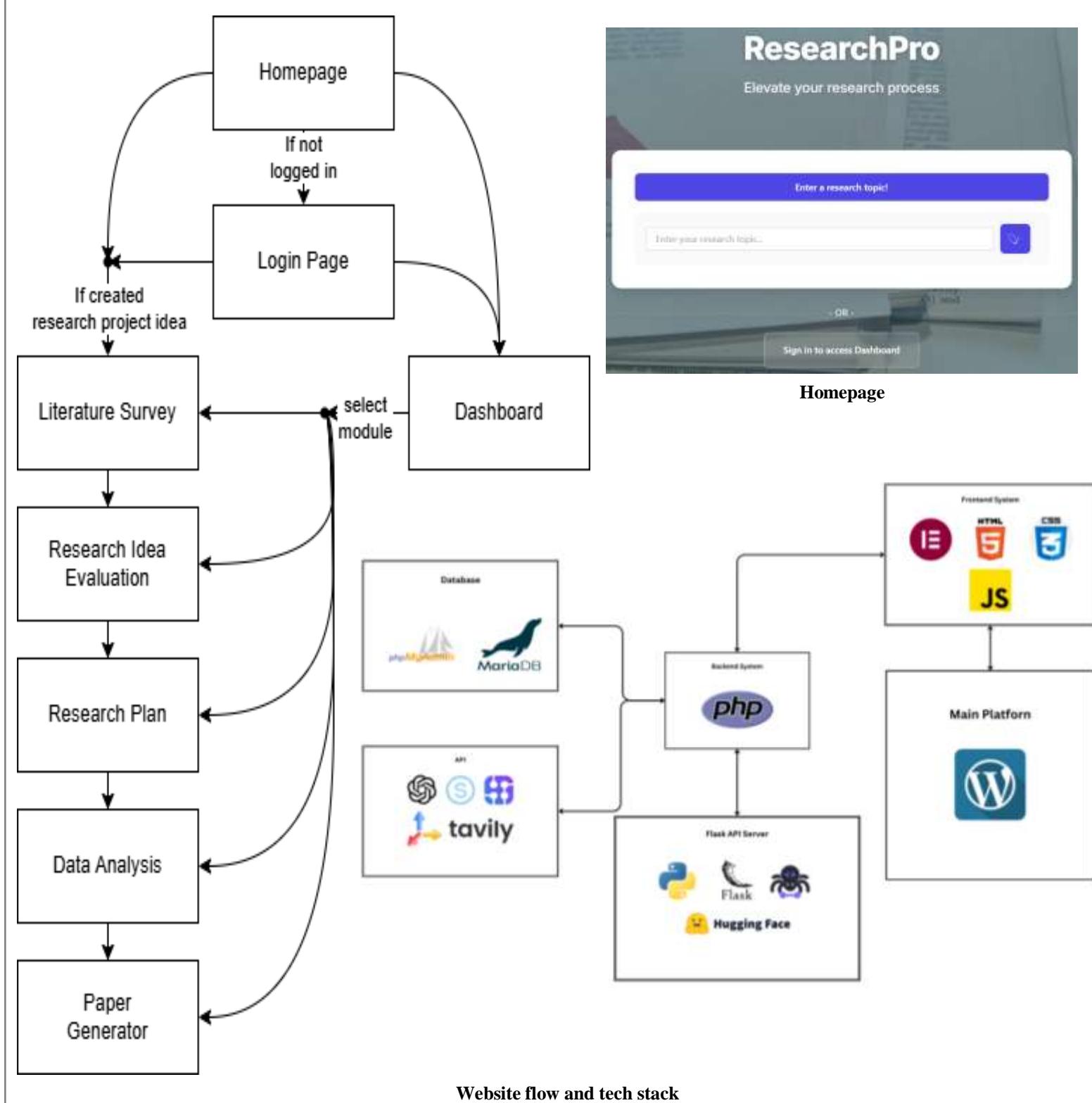
ResearchPro - an LLM-based research assistant tool

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Overview

- The rise of Large Language Models (LLMs) has transformed academic research
- Yet, there are challenges in current tools:
 1. Accuracy issues impacting academic credibility
 2. Complexity requiring technical expertise
 3. Ethical concerns related to plagiarism and originality
- ResearchPro** is a GenAI-powered website platform designed to streamline research, integrate workflows, and promote ethical standards



Literature Survey

- Search literature and compile literature survey by prompt engineering gpt4o-mini responses;
- Deep Learning based Paper Verification and Recommender System to facilitate research efficiency.

The screenshot shows the Literature Survey UI. It includes search tabs for Google Scholar, Web Search, and Youtube Search. A section for 'Need help with search terms?' offers a 'Generate Terms' button. Below, 'Suggested Search Terms' are listed. A search bar with a 'Search' button is present. The 'Literature Survey' section shows 'Relevant Sources' and 'Query History'.

Literature Survey UI

This block displays two UI components. The 'Verification Results' section shows 'Human-Written Probability' at 69.3% and 'AI-Generated Probability' at 30.7%. The 'Recommended Papers' section features a paper titled 'U-shape Transformer for Underwater Image Enhancement' with a 79.37% recommendation score. The paper's abstract is visible, discussing underwater image enhancement techniques.

Verification Results Verification Results

Recommender Results

Research Preparation Workflow

- Interconnected LLM responses from Literature Survey, Research idea Evaluator, Research Plan for streamlining research process
- Downloadable DOCX results for drafting research papers

This block shows the 'Research Idea Evaluator' and 'Research Plan' UIs. The 'Research Idea Evaluator' includes fields for 'Research Project Idea', 'Research Background', and a 'Evaluate Research Idea' button. The 'Research Plan' section has a 'Project Plan' field and a 'Generate Research Plan' button.

Data Analysis

- Analyse uploaded CSV files with LLM-based textual analysis and data visualizations
- Configure data analysis structure according to user's needs

The screenshot displays the 'Data Analysis and Visualization' UI. It includes a 'Dataset Overview' section with a 'Key Findings and Insights' summary. The 'Analysis Goals' section allows users to provide an overview of the dataset and select analysis goals. A 'Visualization' section shows a scatter plot titled 'Number of Blue Rentals vs Normalized Temperature'.

Data Analysis UI

Data Analysis Output

Paper Generator

- Generate research paper drafts by configuring your outline parameters and structure in staging process
- Downloadable as DOCX files for editing your generated paper

This block shows the 'Research Paper Outline' and 'Paper Output' UIs. The 'Research Paper Outline' section includes fields for 'Title', 'Abstract', 'Introduction', 'Methodology', 'Results', and 'Conclusion'. The 'Paper Output' section displays a generated paper draft with a 'Download' button.

Outline Form

Outline Form

Paper Output

Conclusion

The goal of this project is to design a research assistant website. By inputting user's requirements in the page modules, they can get meaningful outputs for facilitating the research process

Try out the platform : <https://researchpro.sengital.ai/>