PathSeeker App Proposal

Project Title: PathSeeker

Team Members:

Saruchi Sharma

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Course and Section Number: 4495-002

Team Lead: Saruchi Sharma

Introduction

In today's competitive job market, people find it very hard to identify a career option that precisely meet their skill set, interest, and market demand. The PathSeeker app will make personalized suggestions to users based on their profiles regarding educational background, skills, and preferences. The app will bridge the gap between seekers and available opportunities by offering data-driven recommendations.

Unemployment remains a critical challenge globally, with individuals often facing barriers to accessing suitable job opportunities. This project aims to address this gap by using artificial intelligence (AI) and user profiling to generate accurate career suggestions and job opportunities.

Problem Statement

Most candidates do not know how their distinctive skills and preferences relate to career possibilities. Traditional job boards cannot offer personalized career guidance; hence, users are overwhelmed by choice uncertainty. The following are the research questions that this study tries to answer:

- How can we effectively map user profiles onto potential career paths?
- What features might be developed to make career recommendations more accurate and relevant?
- How does PathSeeker contribute to long-term career planning?

Initial Hypotheses and Assumptions

1. Personalized career recommendations will increase user satisfaction and enhance decision-making.
2. Integration of real-time job market trends with user profiling will make the suggestions more relevant.
3. Upskilling resources will equip users to take on recommended paths.

Potential Benefits:

Some of the benefits that PathSeeker would provide:

- It enables users to make well-informed choices in careers matching their profiles.
- It presents pathways for upskilling and career development clearly.
- It links users to resources and opportunities related to their career goals.

Proposed Research Project

Objectives:

- Develop a mobile application for career recommendations.
- Utilize AI to analyze user input and suggest relevant career paths.
- Integrate general question inputs for enhanced personalization.
- Provide insights into market demand and career growth potential.
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Methodology:

- **Data Collection:**
    - User-provided data (skills, education, interests, general questions).
    - Job market trends from online sources and databases.
- **Technology Stack:**
    - **Operating System:** Android
    - **Programming Languages:** Python (for AI/ML), Dart (Flutter for frontend)
    - **Frameworks:** Flutter (Mobile App)
    - **Database:** Firebase for real-time storage, MongoDB for recommendations caching
- **Data Analysis Techniques:**
    - Natural Language Processing (NLP)
    - Machine Learning algorithms (Random Forest, K-Nearest Neighbors)
    - Recommendation algorithms (Collaborative Filtering, Content-Based Filtering)

Expected Results:

- A user-friendly mobile career guidance application.
- AI-powered career recommendations based on general question inputs.
- Increased user engagement and satisfaction in career decision-making.

Project Planning and Timeline

Milestone	Description	Deadline
Research Phase	Data collection and literature review	[31/01/25]
Development Phase	Backend & frontend development	[21/02/25]
Testing Phase	Usability and performance testing	[14/03/25]

Deployment Phase	Launch and feedback collection	[30/03/25]

Responsibilities

- **Saruchi:** Coordination, backend development, and overall project management.
- **Ajaypal:** UI/UX design and usability testing.

Both will work database integrations

Project Contract

We, the undersigned, agree to adhere to the scope, timelines, and deliverables outlined in this proposal. We commit to regular team meetings and transparent communication to ensure project success.

Team:

Saruchi Sharma

Ajaypal Singh

Work Date/Hours Logs

Date	Number of Hours	Description of Work Done
Jan 15, 2025	**3**	**Spent time to think on the ideas we can work on**
Jan 17, 2025	**2**	**Discussed our final project ideas and required applications**
Jan 18, 2025	**2**	**Looked at other projects and basic functionalities**
Jan 20, 2025	**3**	**Tried to implement UI mockups**

Acknowledgement

We thank Padam Priya, our professor for continuous guidance and feedback for the project ideas and motivate us to work in this project.