© MAR 2026 | IRE Journals | Volume 9 Issue 9 | ISSN: 2456-8880
DOI: https://doi.org/10.64388/IREV9I9-1715173

Career Mitra: AI Career Path Recommender

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Abstract- ***This paper presents CareerMitra, an intelligent AI-powered career guidance system designed to assist students and professionals in making informed career decisions. The system integrates mobile application technologies and artificial intelligence to analyze user data and generate personalized career recommendations. The frontend of the application is developed using Java and XML in Android Studio, while the backend processing is handled using Python. Firebase cloud database services ensure secure storage and management of user information. Ollama with the LLaVA 7B model is utilized to process user inputs such as education, skills, interests, experience, and behavioral responses to generate accurate and contextual career suggestions. This integrated approach improves accessibility, scalability, and reliability, making CareerMitra a practical solution for modern digital career guidance and educational technology platforms.***

Index Terms- ***Artificial Intelligence, Career Guidance System, Android Application, Java, Python, Firebase, Ollama AI, LLaVA 7B, Recommendation System, Educational Technology.***

I. INTRODUCTION

In today's rapidly evolving technological environment, career planning has become increasingly complex. Students and professionals often face confusion due to the lack of personalized guidance and awareness of emerging career opportunities. Traditional counseling methods are often limited, expensive, and not easily accessible to everyone, especially in developing regions where professional career advisors may not be readily available. As a result, many individuals make career decisions without sufficient information, leading to dissatisfaction, skill mismatch, and reduced professional growth.

To address these challenges, intelligent digital solutions are becoming increasingly important in the field of educational technology. Artificial Intelligence (AI) enables systems to analyze large amounts of user data and provide personalized recommendations based on an individual's profile. By considering factors such as educational background, skills, interests, experience, and behavioral responses, AI-powered platforms can offer data- driven career suggestions.

CareerMitra is developed as an AI-powered mobile application designed to provide accessible and intelligent career guidance. The system collects structured user inputs including educational background, skills, interests, experience, and behavioral responses. These inputs are processed using AI models integrated through Ollama with the LLaVA 7B model to generate accurate and contextual career recommendations. The mobile application is developed using Java and XML in Android Studio, while backend processing is handled using Python, and Firebase is used for secure cloud-based data storage. This integrated architecture ensures scalability, reliability, and real- time assistance, making CareerMitra a practical solution for modern career guidance systems.

II. PROBLEM STATEMENT

Develop a comprehensive and intelligent career guidance system that provides personalized recommendations using artificial intelligence while ensuring secure data management, scalability, and user accessibility. The system aims to assist students and professionals in identifying suitable career paths based on their education, skills, interests, and experience.

Key Challenges:

1. Providing personalized recommendations
2. Ensuring secure handling of sensitive user information.

3. Developing a scalable and efficient AI-based platform.
4. Making the system simple, user-friendly, and easily accessible.

III. RELATED WORK

Several digital career guidance platforms exist, but many rely on rule-based systems or static questionnaires. Traditional systems lack deep personalization and AI-driven contextual analysis. Some platforms use machine learning models, but they often suffer from limited scalability or poor usability.

Recent advancements in AI models such as large language models (LLMs) enable improved contextual reasoning and intelligent recommendations. However, integration of such AI models within secure and scalable mobile-based systems remains limited.

CareerMitra addresses these gaps by combining Android-based application development using Java and XML, Firebase cloud database management, and Ollama AI integration with the LLaVA 7B model to create a structured and intelligent career guidance platform

IV. PROPOSED SYSTEM

The proposed system, CareerMitra, follows a client–

server architecture and integrates AI-based recommendation processing.

System Methodology:

- User Registration & Authentication.
- Users register and log in securely.
- Authentication is handled through Firebase authentication services.

- User Data Collection
- Education details
- Skills and interests
- Behavioral assessment inputs

- Database Storage
- Data stored securely in Firebase cloud database.
- Managed through Firestore / Realtime Database services.

- AI Processing Using Ollama
- User data sent to Python backend server.
- Ollama LLaVA 7B model analyzes inputs
- Generates personalized career suggestions.

- Recommendation Output
- Career paths
- Skill development suggestions
- Next-step guidance

This architecture ensures structured data flow, AI-based reasoning, and secure cloud database management.

V. APPLICATIONS

1. Personalized Career Guidance

AI-driven recommendations based on user profiles, helping students and professionals identify suitable career paths aligned with their education, skills, and interests.

2. Educational Institutions

Assisting schools, colleges, and universities in providing automated career counseling and guidance to students for better academic and professional planning.

3. Professional Career Development

Helping working professionals explore new career opportunities and transition into different industries based on their existing skills and experience.

4. Skill Gap Identification

Analyzing user profiles to identify missing skills and suggesting relevant certifications, courses, and learning paths for career improvement.

5. Digital Career Mentorship

Serving as a virtual AI-based career mentor accessible anytime, providing guidance without the need for traditional counseling services.

6. Recruitment and HR Support

Assisting recruiters and HR professionals in matching

candidate profiles with suitable career roles and industry requirements.

VI. FUTURE SCOPE

1. Integration with Job Market Platforms
Connecting with live job portals and industry databases to provide current career opportunities and market demand insights.

2. Automatically analyzing user resumes to extract skills and experience for more accurate career recommendations. Resume Analysis and Evaluation Module

3. Interview Preparation Assistance
Integrating AI-powered mock interviews and personalized preparation materials based on selected career paths.

4. Multi-Language Support
Expanding the platform to support multiple regional and international languages for broader accessibility.

5. Cross-Platform Application Development
Developing Android, iOS, and web-based versions for easier access to career guidance anytime.

6. Advanced AI Model Integration
Incorporating more advanced large language models and deep learning algorithms for improved recommendation accuracy.

7. Analytics Dashboard for Institutions
Providing educational institutions with insights into student career interests, trending skills, and academic career patterns.

8. Industry-Specific Career Pathways
Developing specialized guidance modules for industries such as IT, healthcare, engineering, finance, and creative sectors.

9. Psychometric and Aptitude Testing Integration
Incorporating behavioral assessments and aptitude tests to enhance the accuracy of career recommendations.

10. Peer Comparison and Benchmarking
Allowing users to compare their profiles with peers and industry standards for better career planning.

CareerMitra has the potential to evolve into a comprehensive AI-powered career guidance ecosystem, addressing the growing needs of students, professionals, and educational institutions in the digital era.

VII. CONCLUSION

CareerMitra demonstrates the effective integration of artificial intelligence and mobile technologies for solving real-world career guidance challenges. By combining Android application development using Java and XML, Python-based backend processing, Firebase cloud database management, and Ollama AI-driven analysis with the LLaVA 7B model, the system delivers personalized, scalable, and secure career recommendations. The modular and scalable architecture ensures flexibility for future enhancements, making CareerMitra a reliable and intelligent digital career guidance

SolutionFurthermore, the implementation of CareerMitra highlights the growing importance of intelligent recommendation systems in modern educational platforms. By combining Android mobile technology, Python-based backend processing, and Firebase cloud services, the system ensures efficient data handling, secure storage, and smooth user interaction. The use of Ollama with the LLaVA 7B model enables the application to analyze user inputs intelligently and generate relevant career suggestions. This integration demonstrates how AI-driven applications can bridge the gap between students and reliable career guidance resources.

REFERENCES

[1] Jindal, N., & Liu, B. (2008). Opinion spam and analysis. Proceedings of the International Conference on Web Search and Data Mining.

[2] Ott, M., Choi, Y., Cardie, C., & Hancock, J. (2011). Finding deceptive opinion spam by any stretch of the imagination. Proceedings of the Annual Meeting of the Association for Computational Linguistics.

[3] Russell, S., & Norvig, P. (2010). Artificial

Intelligence: A Modern Approach. Prentice Hall.

[4] PHP Documentation. PHP: Hypertext Preprocessor. Available: https://www.php.net

[5] MySQL Documentation. MySQL Database Management System. Available: https://dev.mysql.com/doc