AI-Enhanced Geospatial Tourism Recommendation System

Abstract:

Tourism decision-making in India increasingly relies on digital platforms, yet most existing systems offer limited support for intelligent identification and personalized recommendation of tourist destinations. Current solutions generally depend on manual searches, static databases or generic suggestion engines that fail to interpret user inputs such as images, text or location coordinates, resulting in low contextual accuracy and minimal personalization. Moreover, existing systems lack integrated geospatial understanding, preventing them from analyzing spatial relationships, proximity-based relevance or environmental context, and they often do not provide interactive visualizations that help users explore destinations effectively. To address these limitations, this project proposes an AI-Enhanced Geospatial Tourism Recommendation System that automatically identifies tourist places from user-uploaded inputs using computer vision and NLP models, performs geospatial and machine learning based context analysis and generates intelligent recommendations for similar or nearby destinations. The system integrates GIS-based mapping, clustering algorithms and a robust recommendation engine to ensure accurate, context-aware suggestions tailored to user preferences. Additionally, it provides a highly interactive interface with detailed descriptions, images and map visualizations, offering a seamless and informative travel-planning experience. This unified AI-driven framework overcomes the constraints of existing systems by combining automated place recognition, geospatial intelligence and personalized recommendations, thereby enhancing the quality and relevance of tourism guidance across diverse locations in India.

Keywords: AI-based recommendation, Geospatial analysis, Tourism system, Machine learning, Computer vision, Natural language processing, Location identification and Map visualization.