

Lost&Found: Personalized Travel Discovery via Telegram

Telegram bot that delivers personalized travel recommendations enriched with historical insights, media references, and more.



Introduction & Problem Statement

Travelers' Challenge:

Difficulty finding destinations that match personal interests.
Generic travel info that lacks depth and context.

Our Opportunity:

Personalized, enriched travel recommendations.
Aggregated, verified data from multiple sources.

Our Solution

The Lost&Found Telegram bot, leverages advanced natural language processing to understand user queries and preferences. By integrating data from trusted sources like Google Places, Wikipedia, and OpenStreetMap, it offers a comprehensive view of each destination.

Users receive not only location recommendations but also additional insights—such as historical events or notable films shot at the location—making travel planning both informative and engaging.



Key Features

Personalized Recommendations:

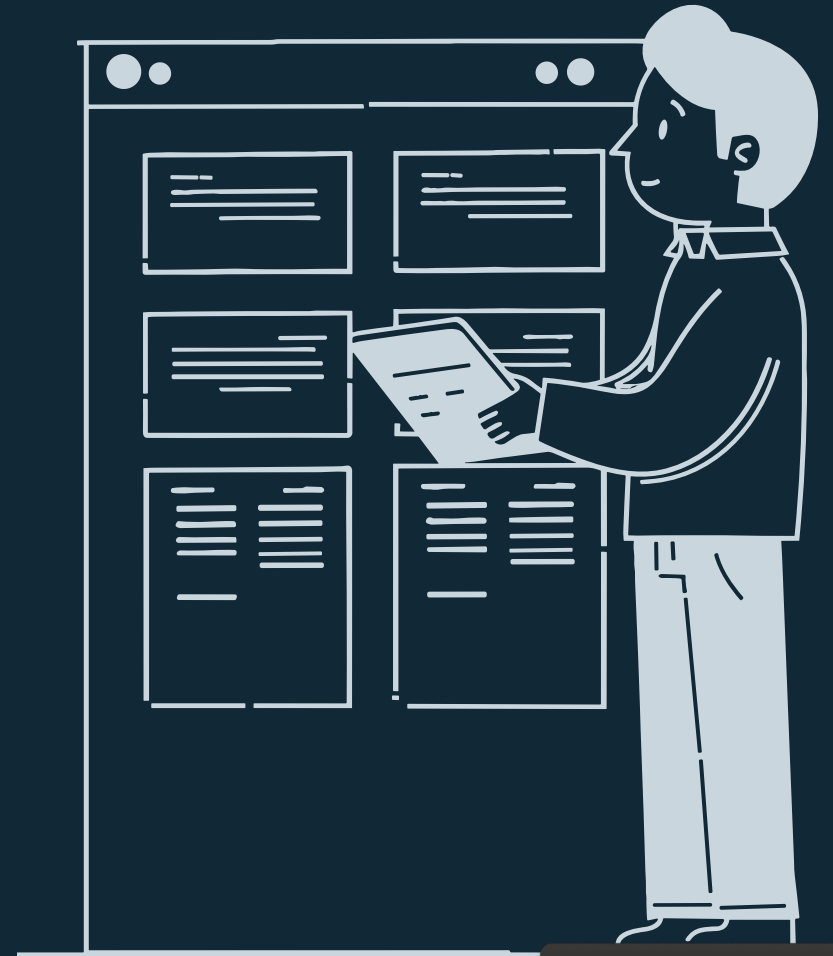
Tailored search results based on user-input criteria.
Utilizes semantic search (BM25, BERT) for precision.

Enriched Information:

Detailed background including history and cultural context. Media references and notable events related to the location.

User-Friendly Interaction:

Intuitive commands within Telegram. Seamless conversation flow for enhanced user engagement.





System Architecture

Our system architecture is composed of several key components. Data collection modules use APIs to gather information, which is then cleaned and normalized before storage in either PostgreSQL or Elasticsearch. The NLP component processes user reviews and queries to extract sentiments and key themes, while our backend API, built with FastAPI, handles search requests and recommendations. Finally, the Telegram bot serves as the user interface, managing all interactions with our system.



Data Sources & Enrichment

To ensure the recommendations are both accurate and engaging, we rely on several primary data sources. Google Places provides the essential details and user reviews, Wikipedia supplies the historical and contextual background, and OpenStreetMap guarantees reliable geographic data. We further enrich this information by cross-referencing additional details, such as notable historical events and media references, ensuring that every recommendation is both informative and interesting.

Project Timeline

1

Requirements & Planning (Week 1):

Define scope, architecture, roles.

2

Data Collection (Weeks 2-3):

Develop parsers, clean & normalize data.

3

NLP Development (Weeks 4-5):

Implement sentiment analysis and semantic search.

4

Backend API (Weeks 6-8):

API development and integration.

5

Telegram Bot (Weeks 9-10):

Bot creation and command integration.

6

Testing & Refinement (Weeks 11-12):

Final testing, deployment preparations.



Team Roles & Responsibilities



Data Engineer (Anastasia):

Data collection, cleaning, storage setup.



NLP Engineer (Diana):

Text analysis, sentiment and semantic search implementation.



Backend Developer (Alsu):

API design, database integration, performance optimization.



Bot Developer (Zlata):

Telegram bot development, interface design, user command handling.

Risk Management & Mitigation

Identified Risks:

Data Source Unavailability: Contingency data sources in place. Integration Challenges: Regular testing and incremental integration. Timeline Delays: Buffer periods and agile iterations.

Mitigation Strategies:

Proactive monitoring and alternative APIs. Frequent team syncs and integration reviews. Flexible planning to adjust to unforeseen challenges.



Conclusion & Q&A

Lost&Found promises to transform travel planning by providing personalized and deeply enriched travel recommendations directly within Telegram.