

TEAM NASA HUB

A Marketplace for Open Science Projects

Main defined problems for Open Science:

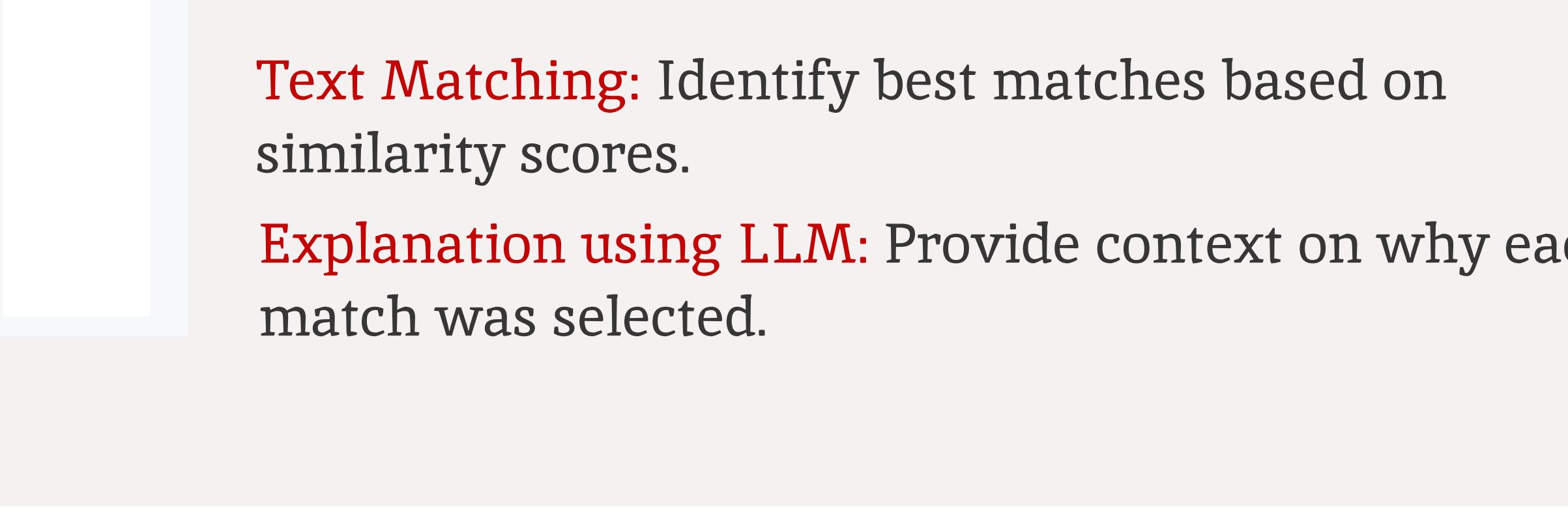
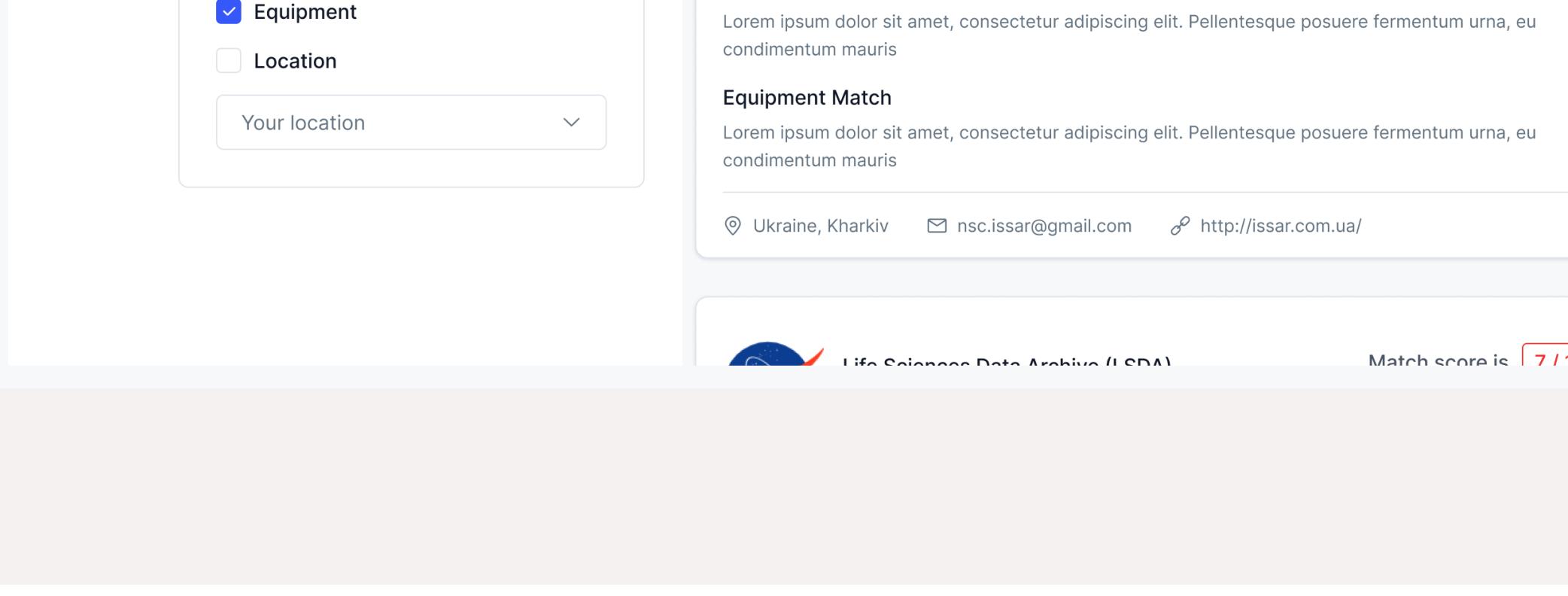
- There is **no** centralized storage for grants and projects.
- Tags system works pretty bad, **hard to find** relevant project
- Young scientists **struggle to connect** with projects due to a lack of well-known achievements.
- Data sets and other open data may be stored in **various** places.
- Scientists cannot share rare equipment because they are **unaware of each other**.

A marketplace that **combines** in one place:

- Grants from main platforms
- Projects/grants that could be live directly on the platform
- People with skills and equipment
 - Natural language matching (based on descriptions or search queries)
 - Reducing friction for new scientists
 - Cross-platform scoring

Cross-platform score for easier matching

- Comprehensive Analysis.
- Reduction of Platform Biases
- Enhanced Matchmaking
- Time-Efficiency
- Dynamic Updating
- Spam and Bad Actor Protection



Our Matching System



Input: Scientist or project description and profile score.

Text Cleaning (using nltk): Remove stop words, stemming, tokenization.

Keyword Extraction (using YAKE): Identify key terms from the cleaned description.

Search in ElasticSearch: Use extracted keywords and score as search parameters.

Text-to-Vector Conversion: Convert descriptions to TF-IDF vectors for similarity analysis.

Cosine Similarity Calculation: Measure similarity between input and potential matches.

Text Matching: Identify best matches based on similarity scores.

Explanation using LLM: Provide context on why each match was selected.

Reduce friction for new scientist

New scientists often encounter **barriers** when trying to secure funding and collaborate on research projects. They face the daunting task of navigating through numerous grant sources, each with its own platform and application process. Additionally, these emerging scientists might not have an established reputation or sufficient "score" within the scientific community, **making it challenging** to join ongoing projects. Moreover, grant organizations often struggle with **visibility**, with their grant opportunities getting lost amidst the myriad of sources.

First good research

You are applying to "Fossil fuel influence on quality of soils" National Scientific Center Institute for Soil Science and Agrochemistry named after O. N. Sokolovsky*

Objective

To gather and document existing information and data related to the project's scope, helping to build a foundational knowledge base for the research.

Suggested steps

Start by choosing a subtopic, such as a particular type of soil or pollutant linked to fossil fuel impact. Search for relevant scientific literature and extract key insights, summarizing the main points, conclusions, and any critical statistics or data. Be sure to cite your sources accurately, noting where you found the source, publication date, and avoid technical jargon. After summarizing and identifying research gaps, properly document your sources and share your summary with the project team by submitting this application.

Attach your research

File in .pdf, .docx, .csv, .xlsx formats

Submit



General Marketplace Diagram: