User-Centric AI-based Interaction Design for Funding Recommendation Tools

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Abstract
Identifying suitable project funding is often challenging: user interfaces on public funding platforms frequently complicate this search, posing usability challenges for diverse user groups. Project initiators are often overwhelmed by the need to navigate complex forms and filtering options to refine their search input. Innovation consultants, who perform such searches regularly, primarily need streamlined access to detailed information. This work presents an interaction design approach for a funding recommendation system aimed at addressing these disparate needs. We propose an interaction model centered around natural language input for project descriptions. This approach aims to minimize upfront complexity and is designed to allow for tailored output views based on user needs. Project initiators seeking orientation can receive a simplified summary that prioritizes intuitiveness; innovation consultants requiring in-depth analysis are presented with a detailed, tabular view including ranked recommendations and justifications, emphasizing efficiency and depth. Simplifying input and tailoring output in this manner aims to make funding recommendation tools more usable and effective for a wide range of users.

Keywords
Project Funding, Recommender Systems, Conversational Search, Interaction Design, Natural Language Interface

1. Introduction

Social entrepreneurship and civic innovation are important approaches to support the development of community-driven solutions to a broad range of challenges. While identifying suitable funding is necessary for project success, the usability of existing search tools often hinders the process. For example, the interfaces of online platforms provided by German public agencies require users to navigate complex forms and understand funding jargon [1]. These requirements create barriers, particularly for community project initiators. Conversely, innovation consultants, who perform these searches frequently, are often slowed down by interfaces not optimized for rapid querying and detailed comparison.
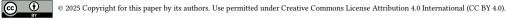
The usability gap underscores the need for improved interaction design. Such improvements are particularly necessary given the challenges of limited standardization in domains like government and citizen participation [2], and the complexities of integrating back-end systems with effective interfaces [3]. Our research addresses this gap by focusing on the interaction design of a funding recommendation system; the system is designed to make funding information more accessible to users with varying needs and expertise. We address the challenge of designing an interface that is both intuitive for users unfamiliar with the funding landscape and efficient for experienced users.

2. Interaction Design Approach

Based on the usability challenges identified, our interaction design focuses on two core principles: simplifying the input mechanism and tailoring the output presentation. Addressing these key user interaction points aims to create a more inclusive and efficient user experience by reducing initial cognitive load while providing appropriate levels of detail based on user needs and expertise.

2.1. Natural Language Querying

To lower the barrier to entry and enhance efficiency, our system moves away from complex forms and relies primarily on a single input field for natural language queries. Users describe their project idea, goals, and funding needs in their own words, using a conversational input rather than a rigid database query format. This approach benefits project initiators who may lack familiarity with specific funding criteria or terminology, allowing them to express their requirements intuitively. Simultaneously, it offers innovation consultants a streamlined method for query formulation compared to navigating multiple dropdowns or checkboxes. The system is designed to implicitly incorporate relevant contextual user data—like location or organizational details, when available and appropriate—or to request specific clarifications contextually, thus maintaining a clean interface while still enabling accurate matching.

2.2. Multi-View Output Presentation

The system presents results through multiple tailored views and components, rather than a single, static display. This approach recognizes that users have differing goals and require varying levels of detail and interaction. For instance, a concise, consolidated recommendation view is offered for project initiators seeking quick orientation. For innovation consultants or others desiring deeper analysis, the system offers a detailed tabular view. This view presents funding sources ranked by relevance and includes essential structured data—for example, deadline, location, and funding amount. Additionally, the view provides system-generated justifications, thus enhancing transparency and enabling critical assessment. In addition to these views, the output includes content designed to guide the user toward better outcomes in subsequent interactions; this includes clarifying questions, or suggestions for improving the project idea based on common funding requirements or identified gaps. By offering these varied views and guidance, the multi-faceted output addresses the initial usability challenges, ensuring that the presentation complexity and available information align with diverse user needs and analysis goals.

Declaration on Generative AI

The authors have not employed any Generative AI tools in the preparation of this work.

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