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GrantExplorer

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How much NSF funding has been devoted to "generative AI" in the last five years? Searching existing published datasets for "generative AI" is cumbersome. While innovative new AI tools like ChatGPT have received lots of attention for information retrieval tasks, they're ill-suited for answering questions about structured data and providing sources. The goal of GrantExplorer is to make this sort of question much easier to answer.

GrantExplorer is a free, open-source, exploratory analytics tool for answering questions about how funding is distributed across U.S. federal agencies. Figure 1 shows a screenshot of an example search. The data[1] currently includes more than a half-million grants from the National Science Foundation, National Institutes of Health, and Department of Defense, with the goal of adding data from more federal agencies in the future. Powered by natural language phrase and topic modeling techniques, the dashboard provides search tools to discover trends in grant abstracts aggregated by their award amount. While this data is publicly available, there isn't a standardized and accessible place to browse, query, filter, and aggregate funding amounts. Existing tools such as usaspending.gov provide faceted search and coarse

aggregations, which is helpful, but it does not include tools such as topic filtering for exploring related terms. This can be especially useful, given how quickly technology trends and jargon evolve in research.

Users of the tool include, but aren't limited to, researchers assessing the landscape of funding on a given topic, philanthropists developing research strategies, and government leaders wanting to evaluate research and technology trends. One of the early adopters and supporters of this tool, Dr. Adam Jones, Science Program Officer at the Gordon and Betty Moore Foundation noted the importance of regularly studying "the funding landscape to see how other agencies are supporting scientific research areas we currently fund or are considering funding in the future." Our goal is to help program officers like Adam make more informed decisions on what to fund next.

The most novel feature of GrantExplorer is the natural language powered search box. Users who don't already have a query in mind can browse pre-generated topic clusters aggregated by semantic similarity of keywords. Once the query is seeded, related keywords will be suggested to widen the search net. The main chart, aggregated by dollar amount or number of grants, will update in real time to show the total funding for grants matching the search terms. Users can narrow their search by limiting divisions and date range. To see individual grants, users click one of the stacked bars to bring up a listview with more metadata. From this view, users can click on individual grants to see their full abstract with the matching keywords highlighted. This view also links to external references for further exploration. While these features already enable more sophisticated search capabilities than the competition, we are open to feature requests and suggestions.

The U.S. federal government spends billions of dollars on research. Our goal is to make this as transparent and easily searchable as possible, in order to better inform future research and research strategies.
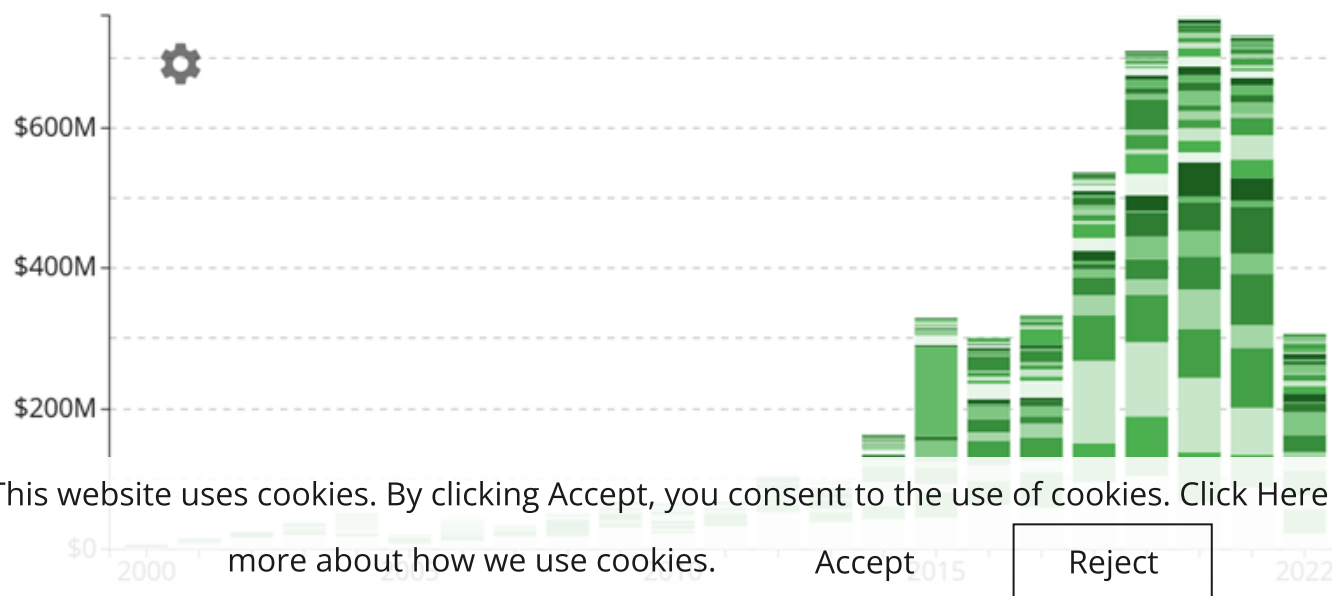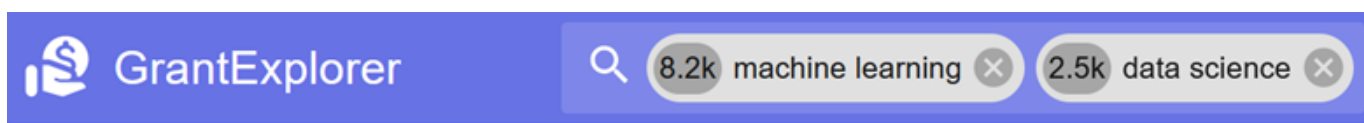
Figure 1: GrantExplorer screenshot illustrating a search with the terms "machine learning" and "data science" and the dollar amounts funded over time for those terms in the National Science Foundation.

[1] We would like to thank Jason Portenoy, a former PhD student at the UW iSchool, for helping to aggregate and curate the data for the GrantExplorer tool.

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