

# Scholars@Duke Collaboration Finder Using AI

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## PROBLEM

Scholars and their delegates have challenges using Scholars@Duke to find (1) internal collaborators for specific projects, (2) other scholars who share similar interests and experiences

The current keyword-based search functionality has limited semantic flexibility, which leads to sparse results

## SOLUTION

The Scholars@Duke Opportunity Finder is a set of AI-powered search and text generation features that serve as an extension of Scholars@Duke, a research discovery system featuring the research, scholarship, and activities of Duke faculty, graduate students, and academic staff

## FEATURES



### Collaboration Finder

- Search with text query
- Search on other scholars by similarity



### Funding Finder

- Use a scholar's data to generate keywords and filters for a search on researchfunding.duke.edu



### Scholar Profile Generator

- Generate keywords
- Generate overview

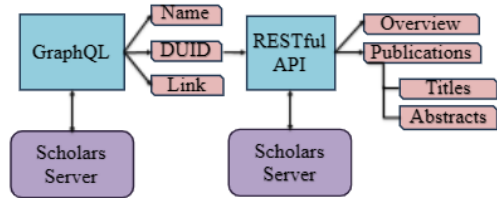


### Search History

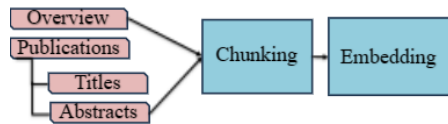
- Edit name of search
- Refine and rerun search
- View and download search results

## UNDERLYING PROCESSES

1. Compile data using RESTful API and GraphQL

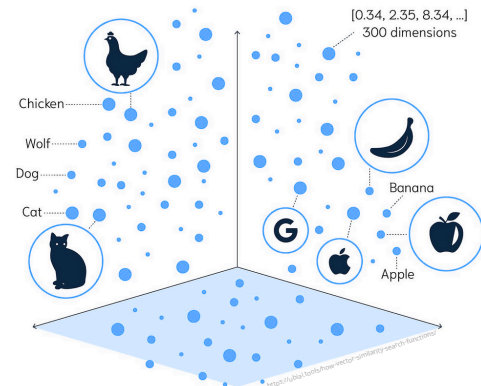


2. Chunk and embed text data



3. Embeddings and metadata are stored in a vector database, which is accessed when using the search and text generation features

When comparing embedding vectors of text data, more similar semantic content has smaller distances between embeddings



## NEXT STEPS

### Usability Testing

- Collecting user feedback from scholars, delegates, and faculty administrators

### Quality Testing

- Comparing search outputs with previous collaboration questions to delegates, Scholars@Duke team, and faculty administration

### Comparing NLP Methods and LLMs

- Trying different types of chunking, embedding methods, and LLMs for different website features

