

Kevin Li Haoyang Yang Evan Montoya Anish Upadhyay Zhiyan Zhou Jon Saad-Falcon Polo Chau
kevin.li@gatech.edu

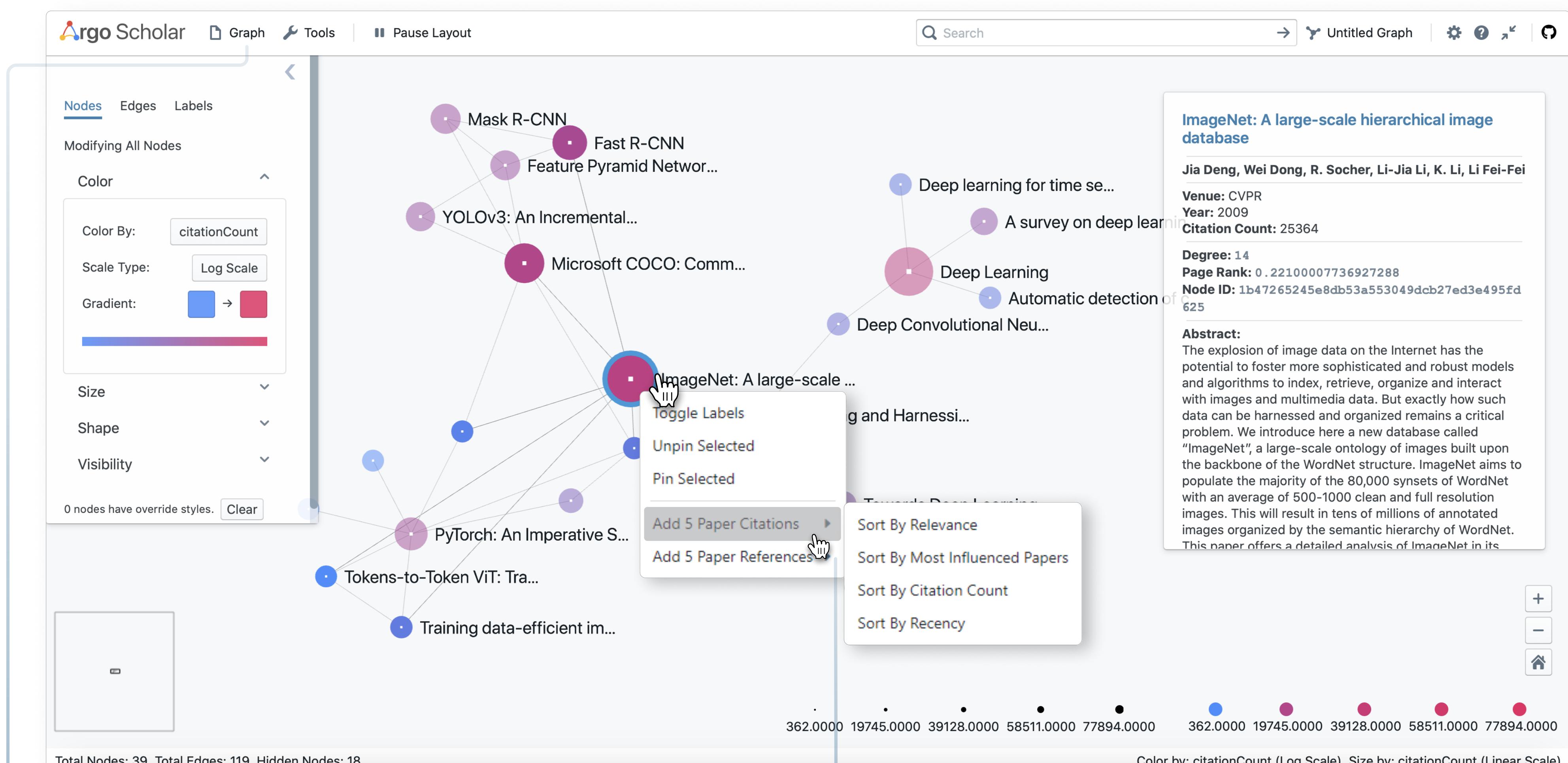
Argo Scholar is an open-source, interactive web-based tool for exploring and sharing literature.

Try it at poloclub.github.io/argo-scholar

Argo Scholar runs on all modern browsers.

Challenges of Current Literature-Visualization Tools

1. Dependent on **small, outdated** manually curated paper datasets
2. Lack support for **personalized** exploration



1 Access ~200M Papers

Argo Scholar queries and visualizes **Semantic Scholar's ~200 million papers**. Users construct and display **personalized** literature exploration results as graphs of papers (nodes) connected by citation relations (edges).

2 Shareable Literature Graphs

Users can share **snapshots** of literature exploration visualization on the cloud for free, accessible from anywhere via URLs.

A JSON snapshot that stores the information of explored papers and their connections can be embedded in **Jupyter Notebook** or HTML IFrames.

3 Incremental Exploration

Argo Scholar supports **incremental associative sensemaking**, a common and effective method to discover relevant work.

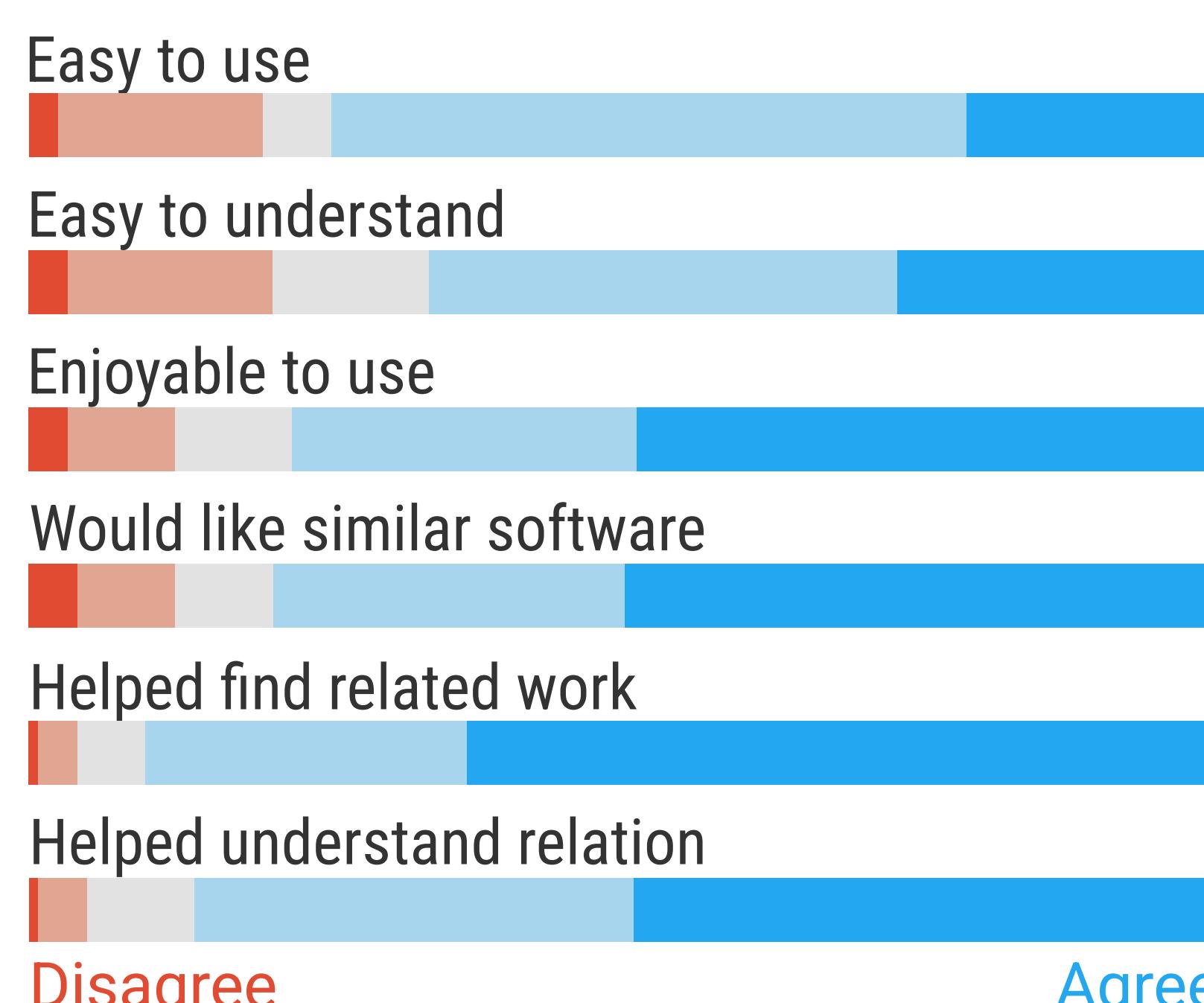
Users grow a network of related papers by iteratively adding citations or references via **Literature Exploration Dropdown**.

Evaluation with Observation Study

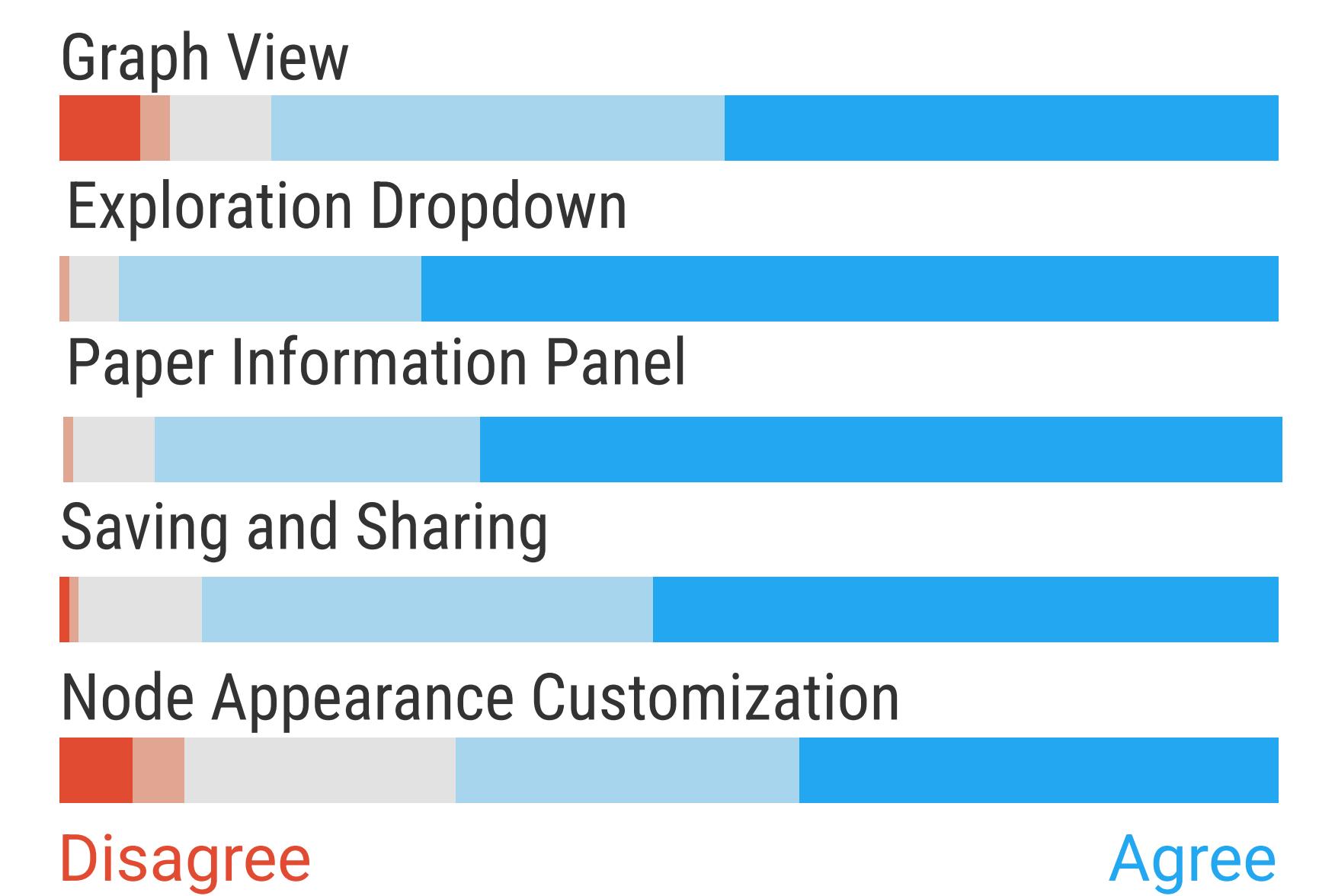
122 Diverse Participants

- 51 Social, Behavioral & Economic Sciences (SBE)
- 24 Biological Sciences (BIO)
- 21 Computer & Information Science & Eng. (CISE)
- 9 Engineering (ENG)
- 6 Mathematical & Physical Sciences (MPS)
- 5 Education & Human Resources (EHR)
- 3 Integrative Activities (OIA)
- 2 Environmental Research & Education (ERE)
- 1 Geosciences (GEO)

Usability



Feature Usefulness



Incremental exploration works well across disciplines

... it helped me to find some relevant papers I hadn't come across yet... could be very helpful for my dissertation.

I have never been able to map out citations and references for research papers so quickly in an organized fashion.

No one-size-fits-all literature exploration tool

'Love the node aspect and makes showing connections to other papers super easy!'

'... not how my mind works. I can see that it could be very powerful for some people, though.'

Need for increased user interactions

'to make my own ... lines to connect some of my own connections'

'sticky note function'

'Very easy to publish ... Can save lots of time working with my colleagues'