

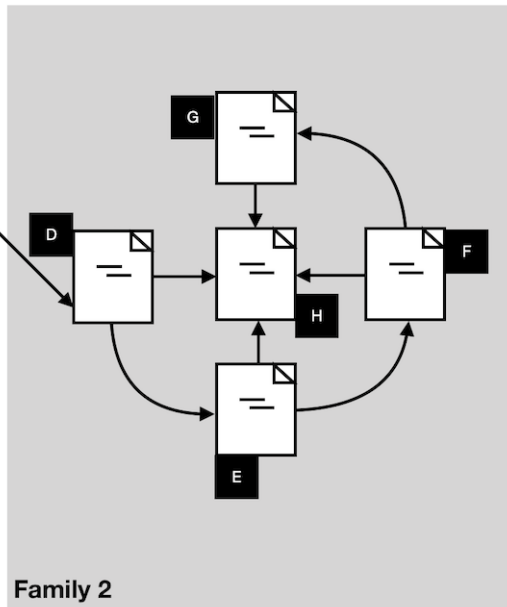
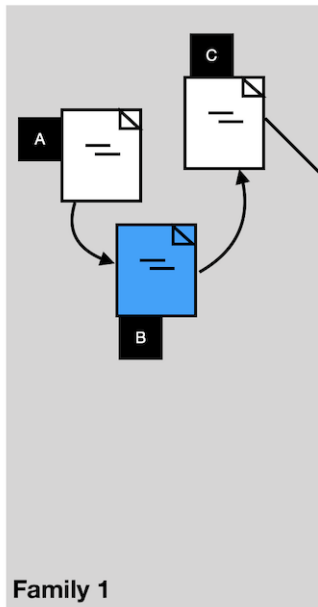
Research Graph

Fiona Guerin, Alvaro Silva, Andreas Zimmerer





Technical University of Munich

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Vision



Research Graph: Planned Features

Search papers	
Display paper families	
Filter papers	
Display detailed paper information	

Research Graph: Extra Features

Family types

Paper Timeline

Keyword Highlights

Influence Highlights

Paper Clusters

Mockup

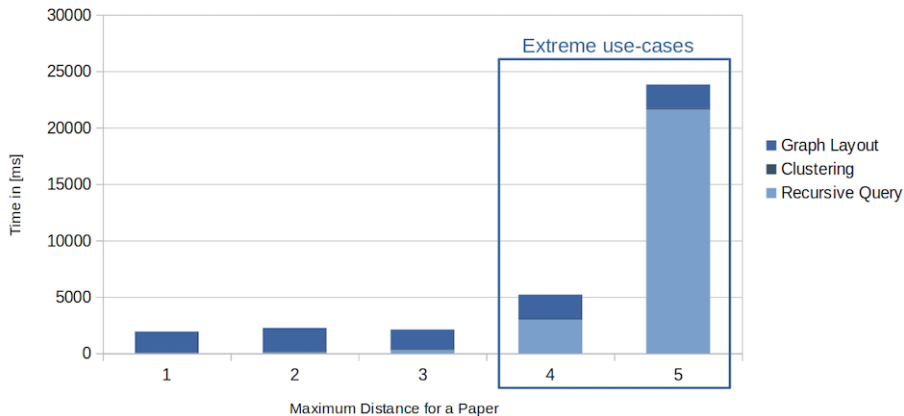
<https://github.com/Jibbow/research-paper-graph/blob/master/doc/img/mockup.gif>

<https://research-paper-graph-frontend.herokuapp.com/>

Performance: Metrics

Performance Metrics for the "Umbra" Paper

Starting from year 2000 and show only preceding papers



Performance: Scalability

User



Independently scalable microservices



Read replicas

Paper



Database query → graph database



Clustering



Graph layouting



Responsibilities: Andreas

- Frontend: Setup
- Frontend: Search papers
- Frontend: Display paper families
- Frontend: Filter papers
- Frontend: Family types
- Frontend: Zooming
- Frontend: Timeline
- Frontend: Clustering
- Frontend: Keyword highlights
- Frontend: Display detailed paper information
- Frontend: Influence highlights

Responsibilities: Alvaro

- Scraper
- Frontend: Zooming
- Backend: Family types
- Backend: Clustering
- Documentation: Clustering

Responsibilities: Fiona

- Scraper
- Database: Schema design
- Backend & Database: Setup
- Backend: Create, read, delete relations
- Backend: Search papers
- Backend: Filter papers
- Backend: Family types
- Backend: Clustering
- Documentation: Readme, presentations, ...

Lessons Learned

Plan

- 💡 Define your goals before you start.
- 💡 Design a mockup before you start.
- 💡 Define your architecture before you start.
- 💡 Define your technology stack before you start.

Team

- 💡 Define tasks and assign team members.
- 💡 Communicate regularly.

Technology

- 💡 Flask and SQLAlchemy serve Python backends very well.
- 💡 PostgreSQL is a good choice for many database problems, including our research paper graph.
- 💡 D3 is a good choice when you want to plot graphs.
- 💡 The Semantic Scholar API offers a huge amount of papers, including database papers.

`https://github.com/Jibbow/research-paper-graph`

Thank you

