

Bibliobuild: a citation network visualisation and exploration tool

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Citation networks are important sources of data that have many applications. These applications have not been fully explored, and existing tools are either hidden behind subscriptions or outdated. This dissertation, a citation network visualisation and exploration application, aims to create a modern, fast, and open tool. A micro-framework service and graph database are utilised to quickly perform data queries and transform the results into an easy to understand and explore citation network. Filters provide users with control over the citation network, allowing them to refine its contents, while statistics provide insights into the network as a whole. The AMiner dataset used contained over 5 million papers. Coupled with the dataset, the network branches out to show papers indirectly linked to the results matching the search term, creating populous citation networks to explore. The tool distinguishes inward and outward citations. This results in two ways to view the citation network, each providing different beneficial insights, one showing the foundation for the paper, the other showing the relevance of the paper in future work. A prototype citation prediction model is implemented that further utilises the data in the dataset, and is used to highlight the papers predicted to be relevant in the future. This dissertation proves that a fast and useful citation network tool can be created from open source data.