Scientific Modeling Computer Laboratory

Project: MTMT's Co-author Network

First Presentation

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Project Description

The goal of this project:

- ▶ Creation of multiple networks
- ▶ Creation of time evolving networks
- ▶ Calculation, visualisation and explanation of central indicators
- ▶ Trying out group searching methods
- ▶ Trying out embeddings

Introduction

- ▶ What is MTMT?

- ▶ How to acquire data?

- ▶ What part of the data is needed?

Introduction

- ▶ What is MTMT?
  Hungarian Repository of Scientific Works
- ▶ How to acquire data?
  ReST API Queries
- ▶ What part of the data is needed?
 Authors for a given publication

Progress

Most progress was made in data exploration:

- ▶ The site gives responses in json/xml
- ▶ Content → Authorships → Label

Sample: 5000 Freshest Publications

- From the topic 'Science'
- Around 33000 different authors
- 170 million connections (but it is sparse)

Sample: 5000 Freshest Publications

Distribution of Number of Authors per Paper
From Most Recent 5000 papers
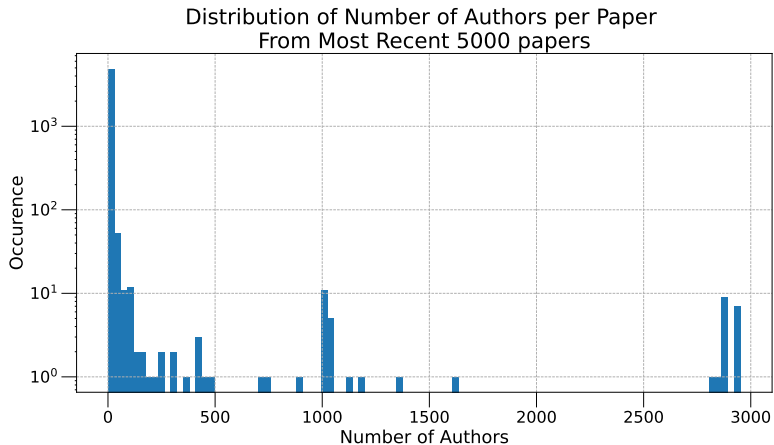
In the Future...

- ▶ Narrowing down what subset of the available data could be analyzed
- ▶ Trying out more network visualization method / packages
- ▶ Progressing with the project furthermore

References

[1] Albert-László Barabási. "Network Science". In: $http://networksciencebook.com$ (2012).

[2] Aric A. Hagberg, Daniel A. Schult, and Pieter J. Swart. "Exploring network structure, dynamics, and function using NetworkX, in Proceedings of the 7th Python in Science Conference (SciPy 2008)". 2008.

Thank you for your attention