Viz-a-viz:
Your personal guide into the viz literature.

Ahmed Abu Zuraiq
CPSC 547 Project Pitch
28th Sep, 2022

Upcoming in IEEE VIS 2022!

Thirty-Two Years of IEEE VIS: Authors, Fields of Study and Citations

Hongtao Hao, Yumian Cui, Zhengxiang Wang, Yea-Seul Kim

The IEEE VIS Conference (VIS) recently rebranded itself as a unified conference and officially positioned itself within the discipline of Data Science. Driven by this movement, we investigated (1) who contributed to VIS, and (2) where VIS stands in the scientific world. We examined the authors and fields of study of 3,240 VIS publications in the past 32 years based on data collected from OpenAlex and IEEE Xplore, among other sources. We also examined the citation flows from referenced papers (i.e., those referenced in VIS) to VIS, and from VIS to citing papers (i.e., those citing VIS). We found that VIS has been becoming increasingly popular and collaborative. The number of publications, of unique authors, and of participating countries have been steadily growing. Both cross-country collaborations, and collaborations between educational and non-educational affiliations, namely "cross-type collaborations", are increasing. The dominance of the US is decreasing, and authors from China are now an important part of VIS. In terms of author affiliation types, VIS is increasingly dominated by authors from universities. We found that the topics, inspirations, and influences of VIS research is limited such that (1) VIS, and their referenced and citing papers largely fall into the Computer Science domain, and (2) citations flow mostly between the same set of subfields within Computer Science. Our citation analyses showed that award-winning VIS papers had higher citations. Interactive visualizations, replication data, source code and supplementary material are available at this https URL and this https URL.
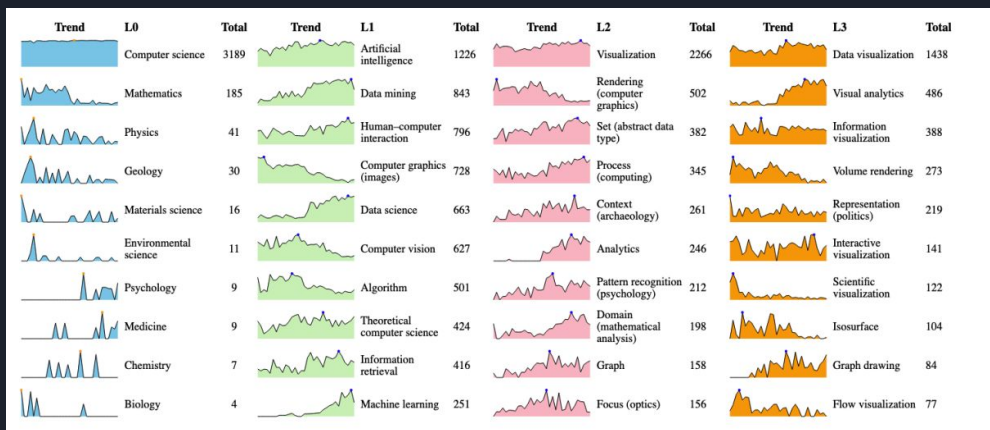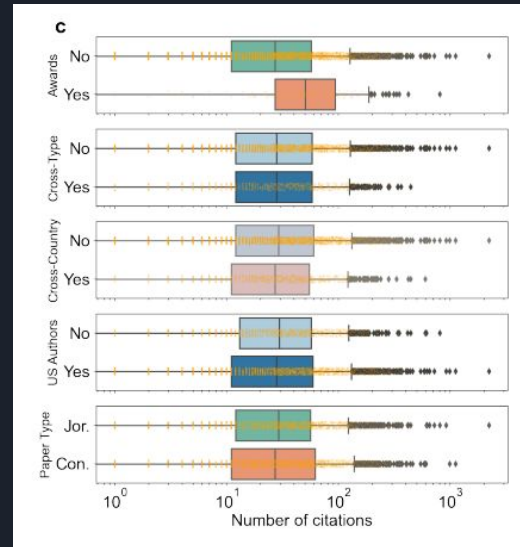
Topic trends
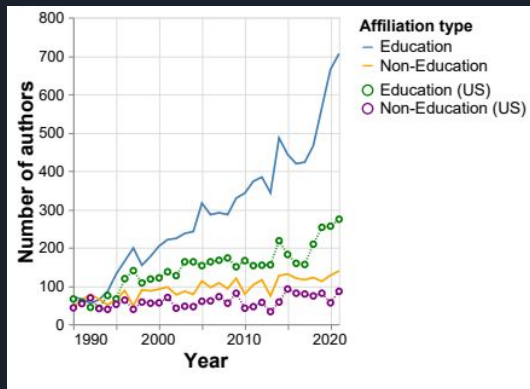
Affiliations

Citation trends

Why?

Summary of patterns and trends in the field

- Understanding the field (conceptually) as a researcher
- Finding a sweet spot between both overviews (distant reading) and details (close reading)

What?
Tabular, networks, images, clusters

- Big dataset and data processing code available at: https://github.com/hongtaoh/32vis

Has attributes related to **papers**, **authors** and **concepts**

gscholar_data.csv

ieee_paper_df.csv

merged_author_df.csv

openalex_citation_paper_df.csv

openalex_concept_df.csv

openalex_paper_df.csv

openalex_reference_author_df_unique.csv

openalex_reference_concept_df_unique.csv

openalex_reference_df.csv

openalex_reference_error_df.csv

openalex_reference_paper_df.csv

openalex_reference_paper_df_unique.csv

papers_to_study.txt

titles_2021.csv

What?
Tabular, networks, images, clusters

- Big dataset and data processing code available at: https://github.com/hongtaoh/32vis

- With extra scraping we can get cover images and create citation graphs

What?
Tabular, networks, images, clusters

- Big dataset and data processing code available at: https://github.com/hongtaoh/32vis

- With extra scraping we can get cover images and create citation graphs

- Can be combined with other datasets for a deeper analysis:

Abstract

Document Sections

1 Introduction

2 Related Work

3 Dataset Description

4 Figure and Table Collection Procedure

5 VISImageNavigator (VIN): Exploring Figures and Tables

Abstract:
We present the VIS30K dataset, a collection of 29,689 images that represents 30 years of figures and tables from each track of the IEEE Visualization conference series (Vis, SciVis, InfoVis, VAST). VIS30K's comprehensive coverage of the scientific literature in visualization not only reflects the progress of the field but also enables researchers to study the evolution of the state-of-the-art and to find relevant work based on graphical content. We describe the dataset and our semi-automatic collection process, which couples convolutional neural networks (CNN) with curation. Extracting figures and tables semi-automatically allows us to verify that no images are overlooked or extracted erroneously. To improve quality further, we engaged in a peer-search process for high-quality figures from early IEEE Visualization papers. With the resulting data, we also contribute VISImageNavigator (VIN, visimagenavigator.github.io), a web-based tool that facilitates searching and exploring VIS30K by author names, paper keywords, title and abstract, and years.

Published in: IEEE Transactions on Visualization and Computer Graphics (Volume: 27 , Issue: 9, 01 September 2021)

How?

Tech: D3 on top of Vue/React ?

Design:

- depends on where we want to focus!
- But the data is rich and many idioms might be applicable.

Let's create something together!

Reach out at: aabuzura@sfu.ca