



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

INLS 641 Visual Analytics

Visualization of Literatures

Report by:

Yating Ke, Qi Xue, Xiaoyu
Gao



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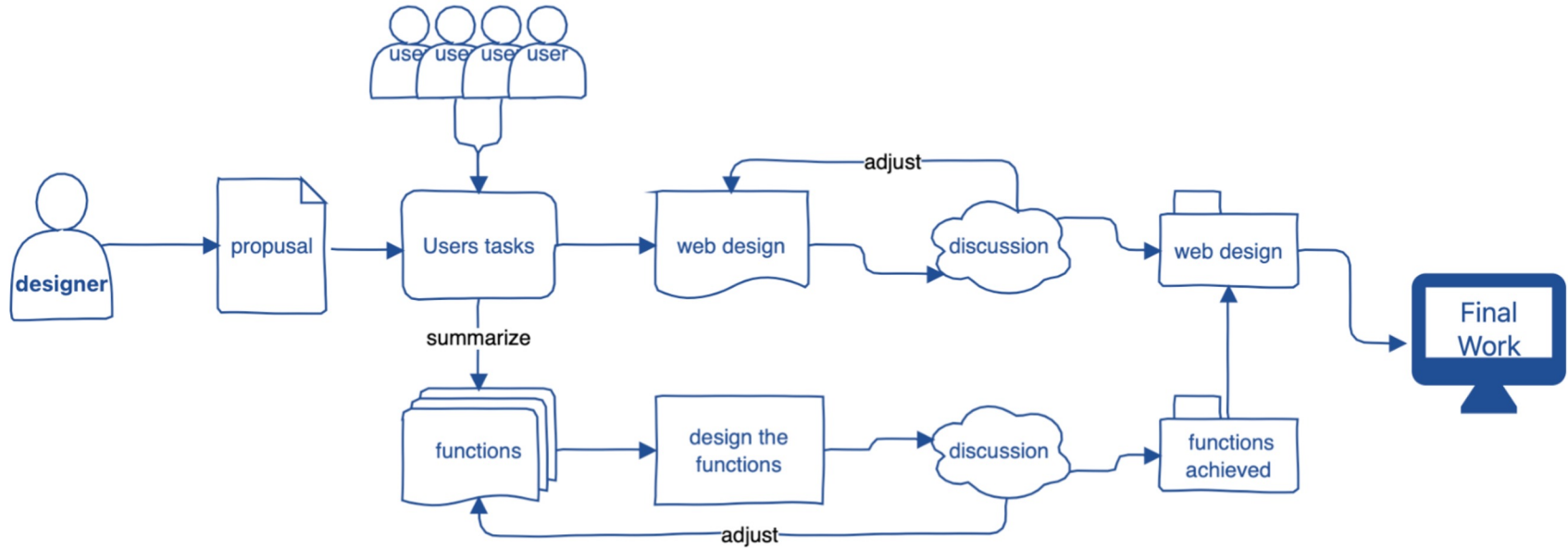


Introduction

1. This is a tool to help you organize your literature data.
 - a. Heat Map
 - b. Line Chart
 - c. Word Cloud
2. It is **simple** and **flexible**.
 - a. The data structure it requires is simple.
 - b. It can deal with any file that meets the requirements.
3. You can even use it to explore some **other** data.



Design process



Data and JavaScript library

- Scopus
- Chart.js
- D3.js, D3 Cloud
- Papa Parse

Export 10 documents to CSV ?

☐ Documents -

What information do you want to export?

<input checked="" type="checkbox"/> Citation information	<input checked="" type="checkbox"/> Bibliographical information	<input type="checkbox"/> Abstract & keywords	<input type="checkbox"/> Funding details	<input type="checkbox"/> Other information
<input checked="" type="checkbox"/> Author(s)	<input checked="" type="checkbox"/> Affiliations	<input type="checkbox"/> Abstract	<input type="checkbox"/> Number	<input type="checkbox"/> Tradenames & manufacturers
<input checked="" type="checkbox"/> Document title	<input type="checkbox"/> Serial identifiers (e.g. ISSN)	<input type="checkbox"/> Author keywords	<input type="checkbox"/> Acronym	<input type="checkbox"/> Accession numbers & chemicals
<input checked="" type="checkbox"/> Year	<input type="checkbox"/> PubMed ID	<input type="checkbox"/> Indexed keywords	<input type="checkbox"/> Sponsor	<input type="checkbox"/> Conference information
<input checked="" type="checkbox"/> EID	<input type="checkbox"/> Publisher		<input type="checkbox"/> Funding text	<input type="checkbox"/> Include references
<input checked="" type="checkbox"/> Source title	<input type="checkbox"/> Editor(s)			
<input checked="" type="checkbox"/> Volume, issues, pages	<input type="checkbox"/> Language of original document			
<input checked="" type="checkbox"/> Citation count	<input type="checkbox"/> Correspondence address			
<input checked="" type="checkbox"/> Source & document type	<input type="checkbox"/> Abbreviated source title			
<input checked="" type="checkbox"/> Publication stage				
<input checked="" type="checkbox"/> DOI				
<input checked="" type="checkbox"/> Open access				

Select all information ☒ Truncate to optimize for Excel ? ☐ Save as preference

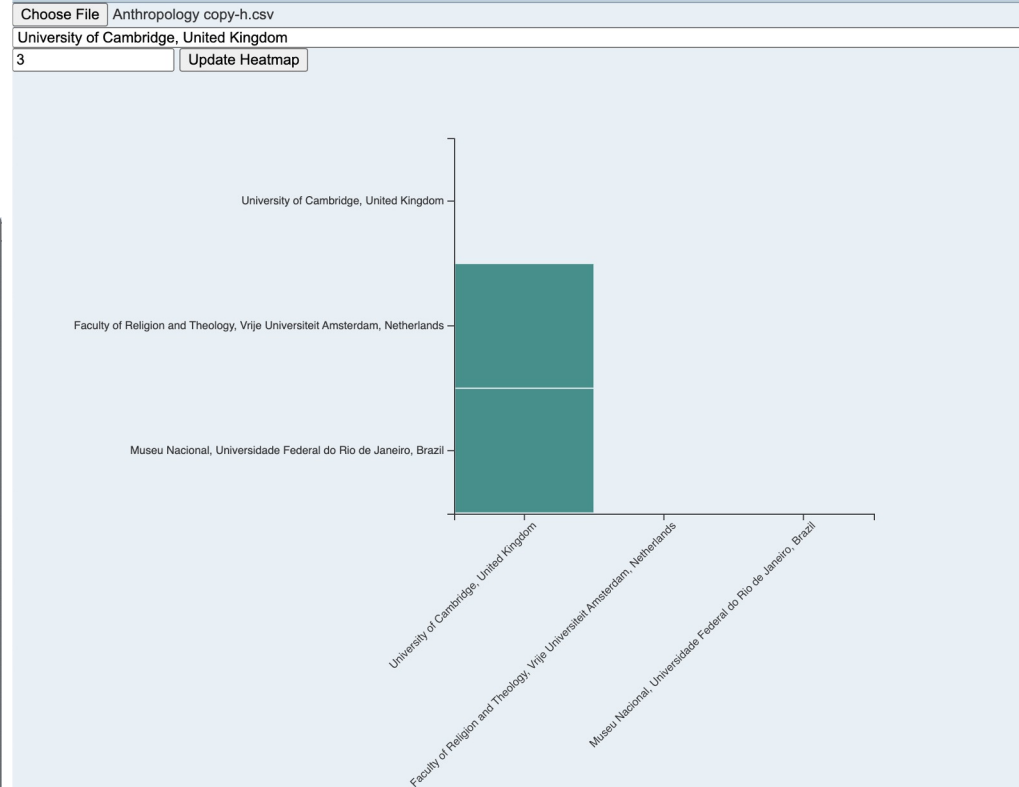


Heat Map

- Select institution (affiliation)
- Enter number of top

✓ University of Cambridge, United Kingdom

Faculty of Religion and Theology, Vrije Universiteit Amsterdam, Netherlands
Mahila Maha Vidhyalaya, Banaras Hindu University, India
the Department of Journalism, College of Journalism & Communication, Chinese Culture University, Taipei, Taiwan
Wellesley College, United States
School of Nursing, Sun Yat-sen University, Guangzhou, China
The First Affiliated Hospital, Sun Yat-sen University, Guangzhou, China
Forensic Anthropology Research Centre, Department of Anatomy, Faculty of Health Sciences, University of Pretoria, 9 Bophelo Road,
Department for the Anthropology of the Americas, University of Bonn, Bonn, Germany
Department of Evolutionary Biology, University of Vienna, Vienna, Austria
Department of Evolutionary Biology and Environmental Studies, University of Zurich, Zurich, Switzerland
Escuela Nacional de Antropología e Historia, Mexico City, Mexico
Department of Paleontology, University of Zurich, Zurich, Switzerland
Institute of Evolutionary Medicine, University of Zurich, Zurich, Switzerland
Department of Anthropology, Binghamton University, Binghamton, United States
Department of Archaeogenetics, Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany
Centro de Investigaciones Geológicas, La Plata, Argentina
Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata, La Plata, Argentina
Centro de Investigaciones Geológicas, CONICET-UNLP, La Plata, Argentina
School of Medicine, Translational Health Research Institute, Western Sydney University, Sydney, NSW, Australia
School of Psychology, Translational Health Research Institute, Western Sydney University, Sydney, NSW, Australia
School of Medicine, Translational Health Research Institute, Western Sydney University. Mental Health Services, Camden and
Health & Social Sciences, Epidemiology and Clinical Research Unit, Pasteur Institute of Madagascar (IPM), BP 1274 Ambatofotsikely
Applied Human Sciences, Arts & Sciences Faculty, Montreal University, Montreal, Canada
Prospective Anthropology Laboratory (LAAP), Catholic University of Louvain, Louvain-La-Neuve, Belgium



What those heatmap could do?

- display data through changes in color
- are suitable for cross-checking multivariate data to detect whether there are any correlations between each other

Limitation:

The current set of data cannot clearly see the correlation between the data because there are too many institutions involved, and there is not always cooperation between these institutions.

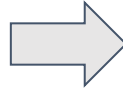


line chart

Data processing

- Output of four disciplines from 1950 to 2023
- Merge data
- Filter out NA values/missing values

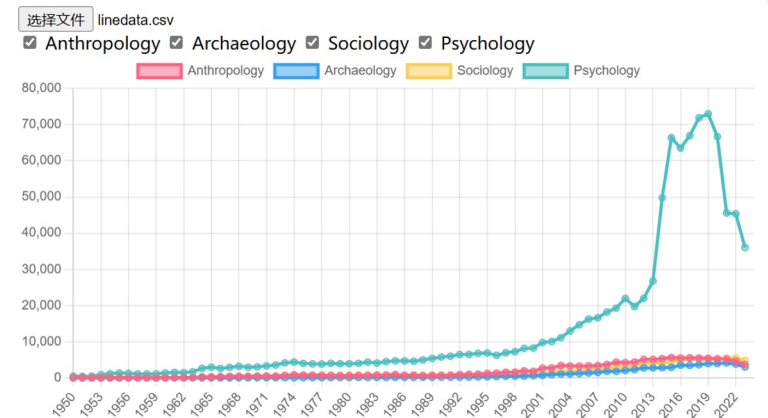
Scopus refine results values					
Your query : (TITLE-ABS-KEY(anthropology))					
Number of results : 133832					
OPEN ACCESS	YEAR		AUTHOR NAME	SUBJECT AREA	DC
All Open A	33185	2023	3726 Cattaneo,	158 Medicine	55279 Art
Gold	10504	2022	4660 Kanchan,	104 Social Scie	53730 Re
Hybrid Go	3529	2021	5189 Krishan, K.	101 Arts and H	32760 Bo
Bronze	10273	2020	5303 Gibbons, A	97 Psychology	13551 Bo
Green	21527	2019	5463 Ubelaker,	93 Nursing	8798 No
		2018	5512 Charlier, P	91 Biochemis	7506 Ed
		2017	5571 Cunha, E.	91 Agricultur	5164 Co
		2016	5520 Pink, S.	76 Multidiscip	4734 Let
		2015	5652 Singer, M.	72 Environm	3268 Shi



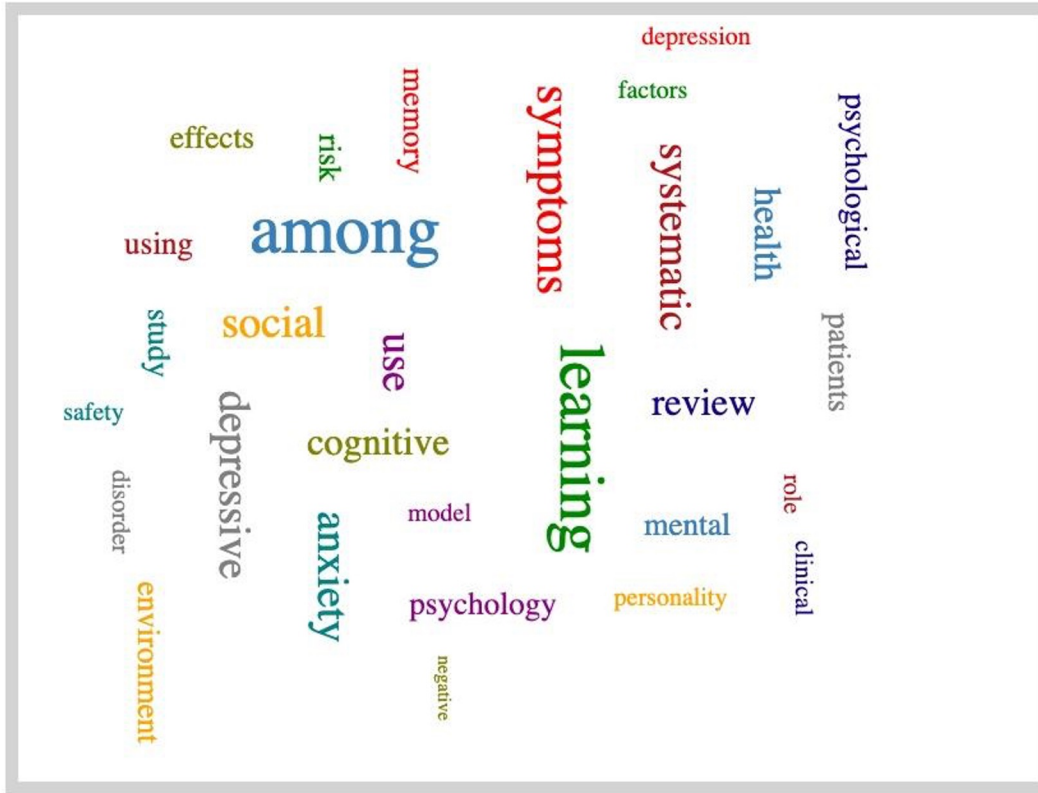
	A	B	C	D	E
1	YEAR	Anthropology	Archaeolog	Sociology	Psychology
2	1950	104	22	51	490
3	1951	89	23	54	454
4	1952	89	24	60	509
5	1953	74	19	51	881
6	1954	80	25	56	1171
7	1955	83	21	90	1363
8	1956	52	19	64	1263
9	1957	51	18	47	1114
10	1958	38	21	62	1098
11	1959	54	32	94	1122
12	1960	45	22	126	1292

line chart-why choose this chart/design

- Line chart selection for trend visualization over time.
- Color coding rationale for field differentiation: Anthropology in red, Archaeology in blue, Sociology in yellow, Psychology in teal.
- Interactive checkboxes functionality: Customizable data display for user preference.
- Technical backbone: Utilizing Chart.js for dynamic charting and PapaParse for real-time CSV data parsing.



Word Cloud



- recent research in different fields
- separate words
- filter out stop words
- calculate word frequency
- display top words

Ethical and Societal Considerations

- We encourage user feedback to make the visualization project better.
- Regarding accessibility, currently the tool still requires some data preprocessing, which may not be friendly to some people without a data processing background.
- The demand for data analysis requires this web to have the ability to continuously update the visualization tool, which is currently difficult for us.





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