

OldVisOnline

Curating a Dataset of Historical Visualizations



Yu Zhang¹

¹University of Oxford



Ruike Jiang²

²Peking University



Liwenhan Xie³

³Hong Kong University of Science and Technology



Yuheng Zhao⁴



Can Liu²



Tianhong Ding⁵



Siming Chen⁴

⁴Fudan University

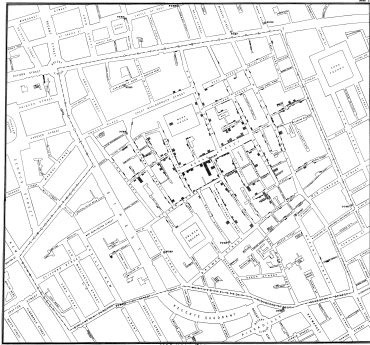



Xiaoru Yuan²

⁵Huawei

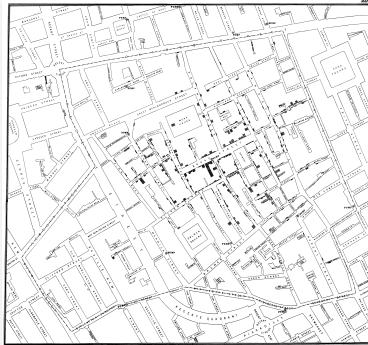
Historical Visualizations (or Old Visualizations)


Historical Visualizations (or Old Visualizations)

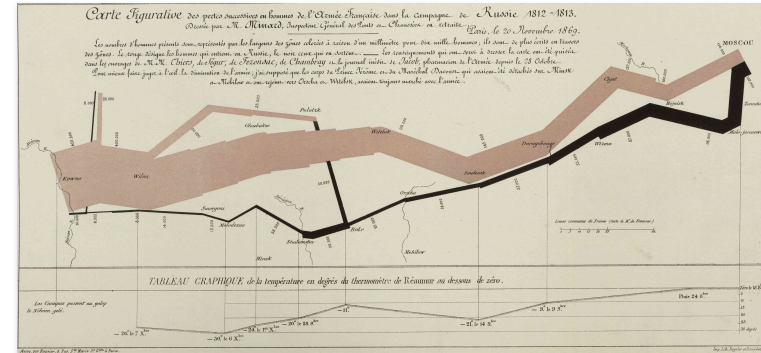



John Snow's cholera map, 1855
(image in public domain )

Historical Visualizations (or Old Visualizations)

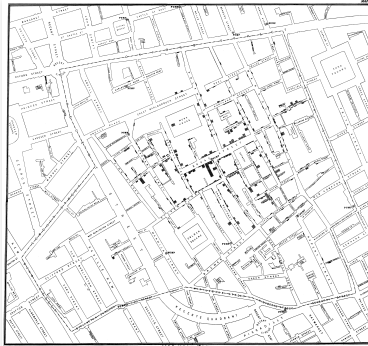


John Snow's cholera map, 1855
(image in public domain )

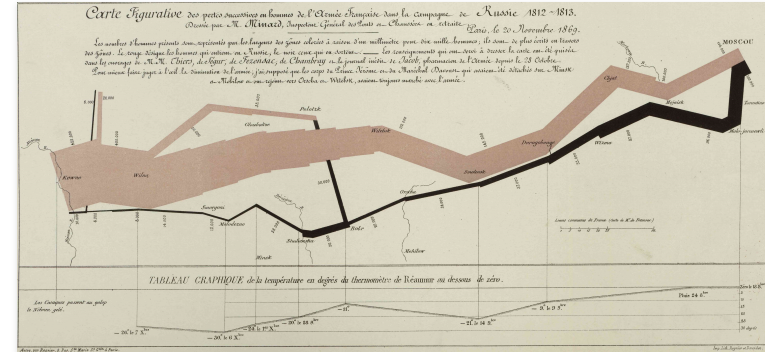


Charles Minard's map of Napoleon's Russian campaign, 1869
(image in public domain )

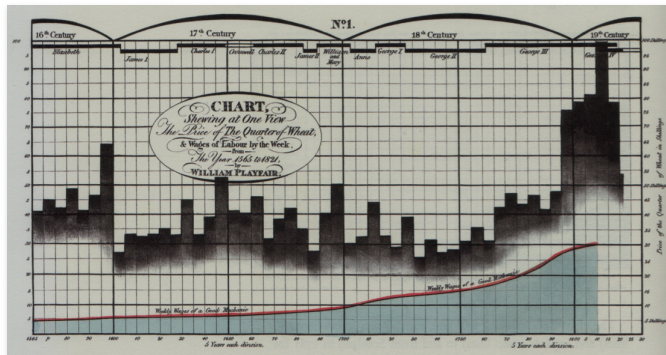
Historical Visualizations (or Old Visualizations)



John Snow's cholera map, 1855
(image in public domain ☺)

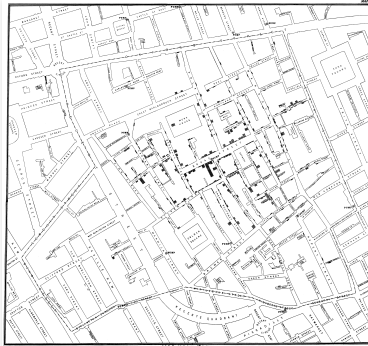


Charles Minard's map of Napoleon's Russian campaign, 1869
(image in public domain ☺)

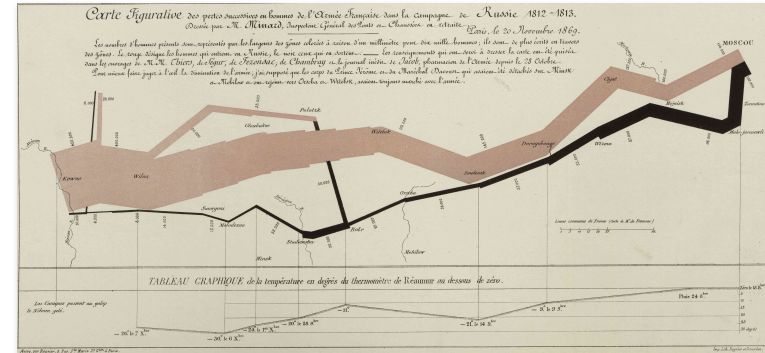


William Playfair's chart of wheat price and wage, 1784
(image in public domain ☺)

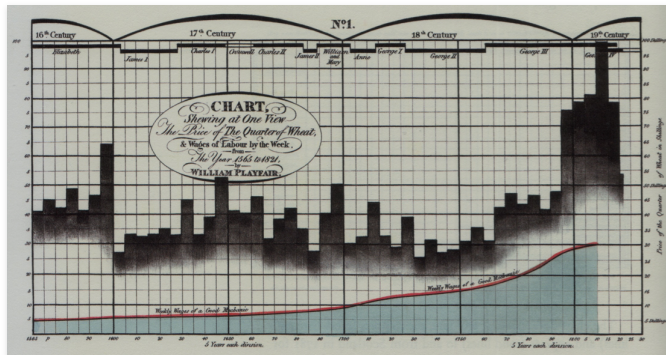
Historical Visualizations (or Old Visualizations)



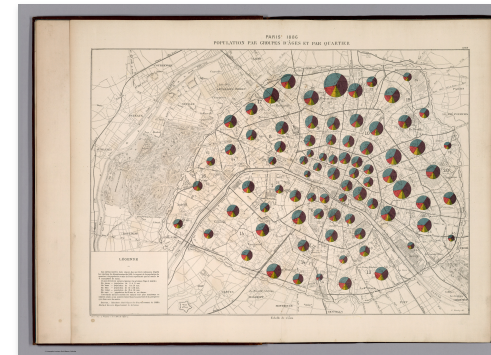
John Snow's cholera map, 1855
(image in public domain ☺)



Charles Minard's map of Napoleon's Russian campaign, 1869
(image in public domain ☺)

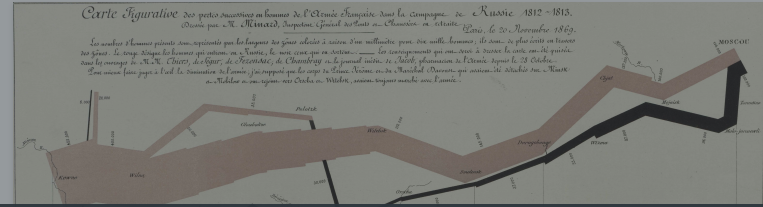
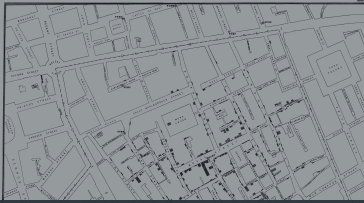


William Playfair's chart of wheat price and wage, 1784
(image in public domain ☺)

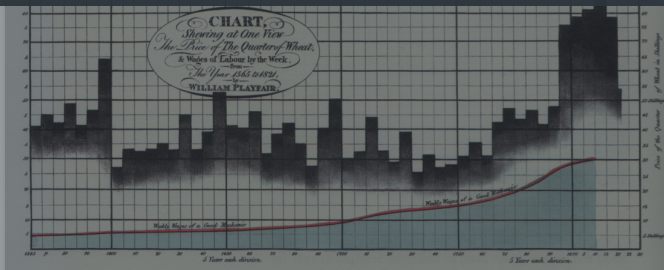


Jacques Bertillon's thematic map with pie-chart glyphs, 1886
(image in public domain ☺)

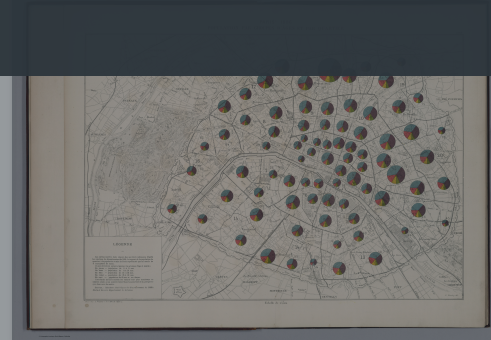
Historical Visualizations (or Old Visualizations)



- How many historical visualizations have survived to date?
- What can we use historical visualizations for?



William Playfair's chart of wheat price and wage, 1784
(image in public domain ©)



Jacques Bertillon's thematic map with pie-chart glyphs, 1886
(image in public domain ©)

How many historical visualizations have survived to date?

Finding historical visualizations (images + metadata)

Overview

The OldVis project stack

Application

gallery

...

Dataset

dataset

oldvis_dataset

Data Labeling

classification labeler

segmentation labeler

Data Processing

libprocess

libprocess_extensions

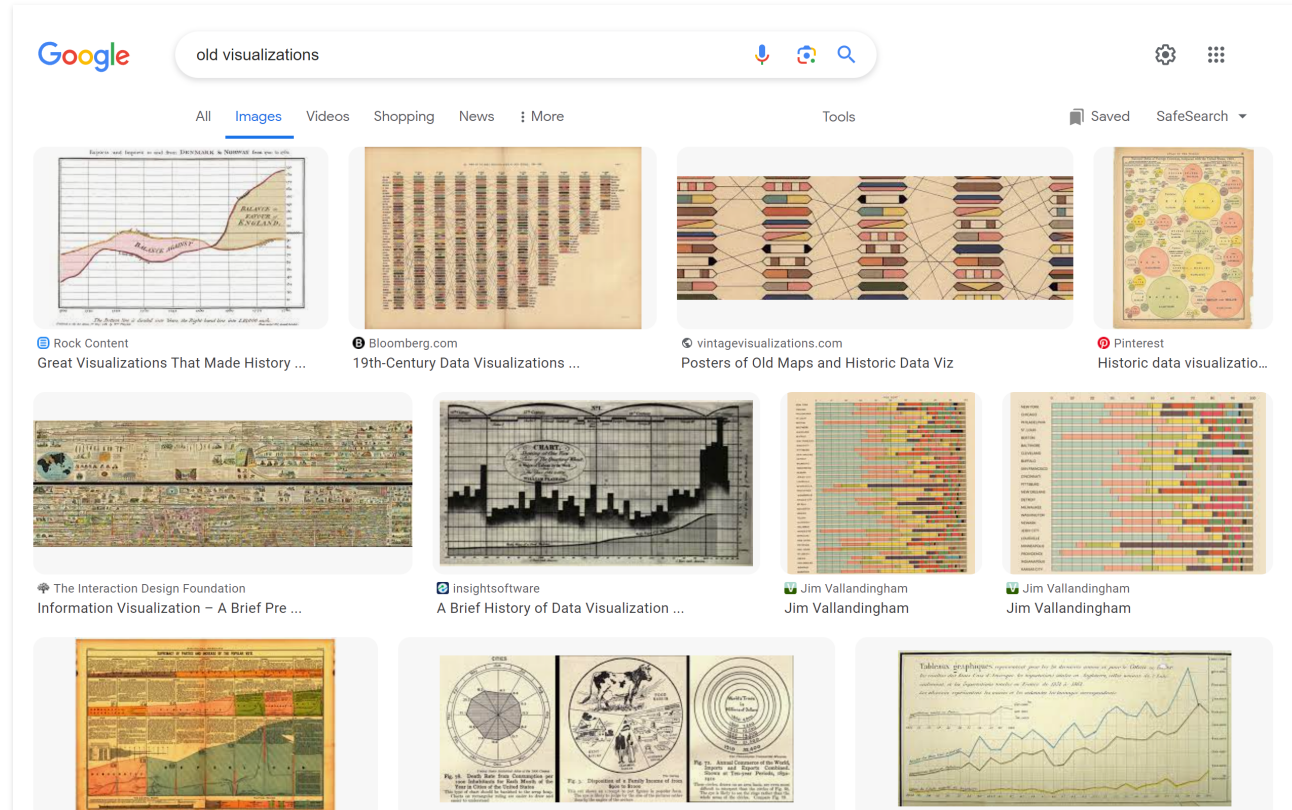
Data Querying

libquery

libquery_extensions

Data Source

General-purpose image search engines?



The screenshot shows a Google search for "old visualizations". The search results are displayed in a grid format, featuring various historical data visualization examples. The search bar at the top contains the text "old visualizations" and includes icons for voice search, image search, and a magnifying glass. Below the search bar, there are tabs for "All", "Images", "Videos", "Shopping", "News", and "More". The "Images" tab is selected. The search results are organized into a grid of image thumbnails, each with a small icon representing the source and a caption. The thumbnails include:

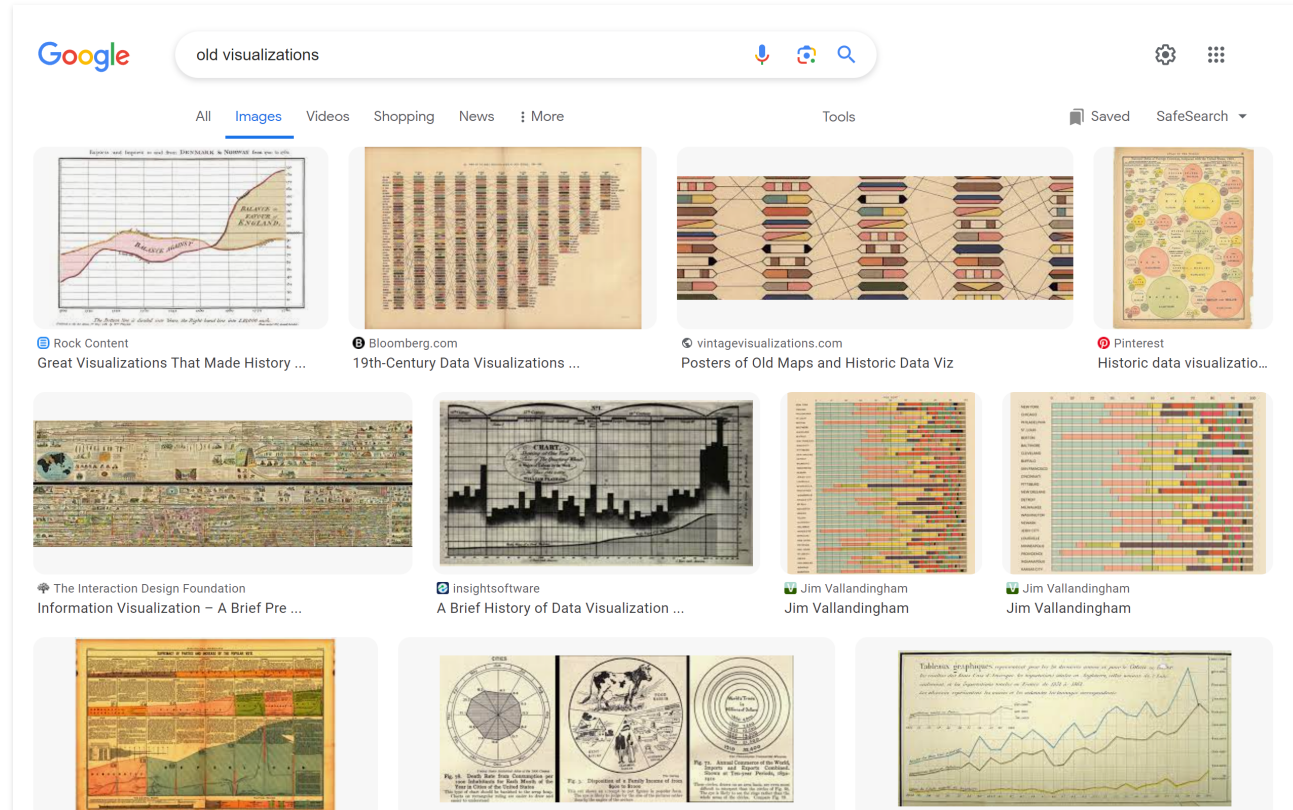
- A line graph showing "REVENUE AND EXPENSES IN AND FROM SWEDEN, IN NORDEN, FROM 1810 TO 1870".
- A complex table or grid of data from Bloomberg.com.
- A series of colorful arrows pointing in various directions, representing a network or flow diagram.
- A circular diagram with multiple colored segments, possibly a pie chart or a similar data visualization.
- A large, detailed map or infographic with many small elements.
- A bar chart with a grid background, titled "CHART".
- A horizontal bar chart with many colored bars.
- A vertical bar chart with many colored bars.
- A complex infographic with many small elements and text.
- A circular diagram with a central point and radiating lines.
- A circular diagram with a central point and radiating lines, similar to the one above.
- A circular diagram with a central point and radiating lines, similar to the one above.
- A line graph with multiple lines, showing trends over time.

The search results are organized into a grid of image thumbnails, each with a small icon representing the source and a caption. The thumbnails include:

- Rock Content: Great Visualizations That Made History ...
- Bloomberg.com: 19th-Century Data Visualizations ...
- vintagevisualizations.com: Posters of Old Maps and Historic Data Viz
- Pinterest: Historic data visualizatio...
- The Interaction Design Foundation: Information Visualization – A Brief Pre ...
- insightssoftware: A Brief History of Data Visualization ...
- Jim Vallandingham: Jim Vallandingham
- Jim Vallandingham: Jim Vallandingham

Data Source

General-purpose image search engines?



- Lack metadata

Digital Libraries

David Rumsey Map Collection (<https://www.davidrumsey.com/>)



Home About View Collection Publications Blog Help Share Search the Collection Go

David Rumsey Map Collection
 CARTOGRAPHY ASSOCIATES POWERED BY LUNA IMAGING
 Browse 124,306 Maps and Images →

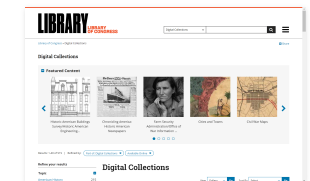
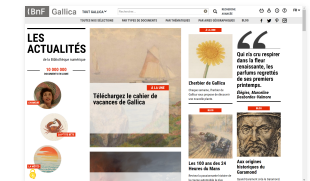
THE COLLECTION Share this Page

MEXICO NEW SPAIN
 Mexico or New Spain.; Carey, Mathew; 1818; 2721.034

Composite: Map of Louisiana and Mexico.; Tardieu, P (Pierre Antoine), 1784-1869; Tardieu, P.F.; 1820; 5838.001

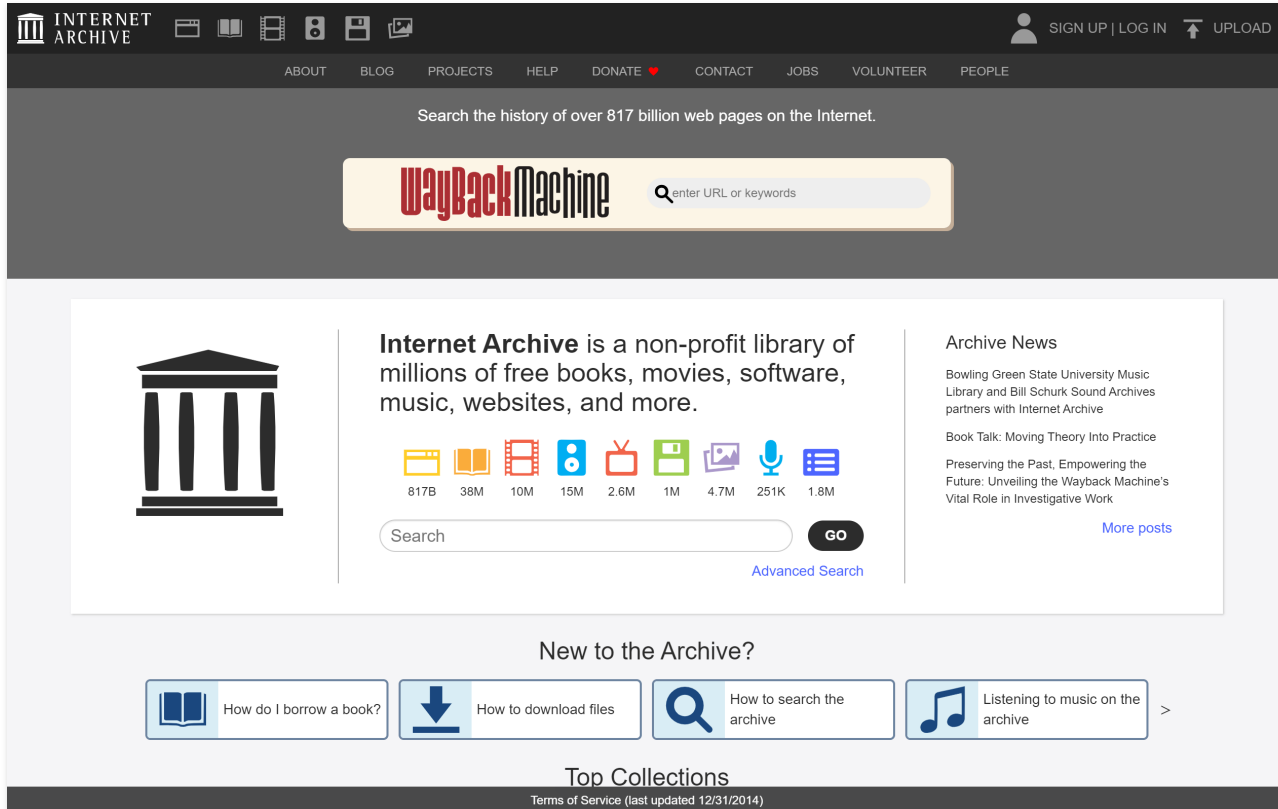
FLORIDA
 Florida.; Rand McNally and Company; 1924; 5028.057

Voyage Union Pac

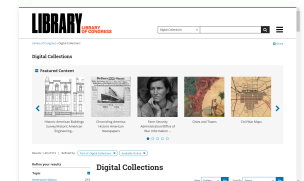
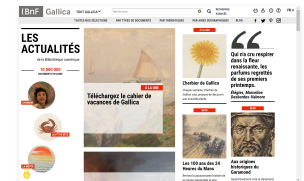
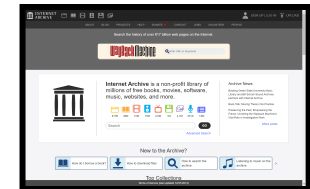


Digital Libraries

Internet Archive (<https://archive.org/>)

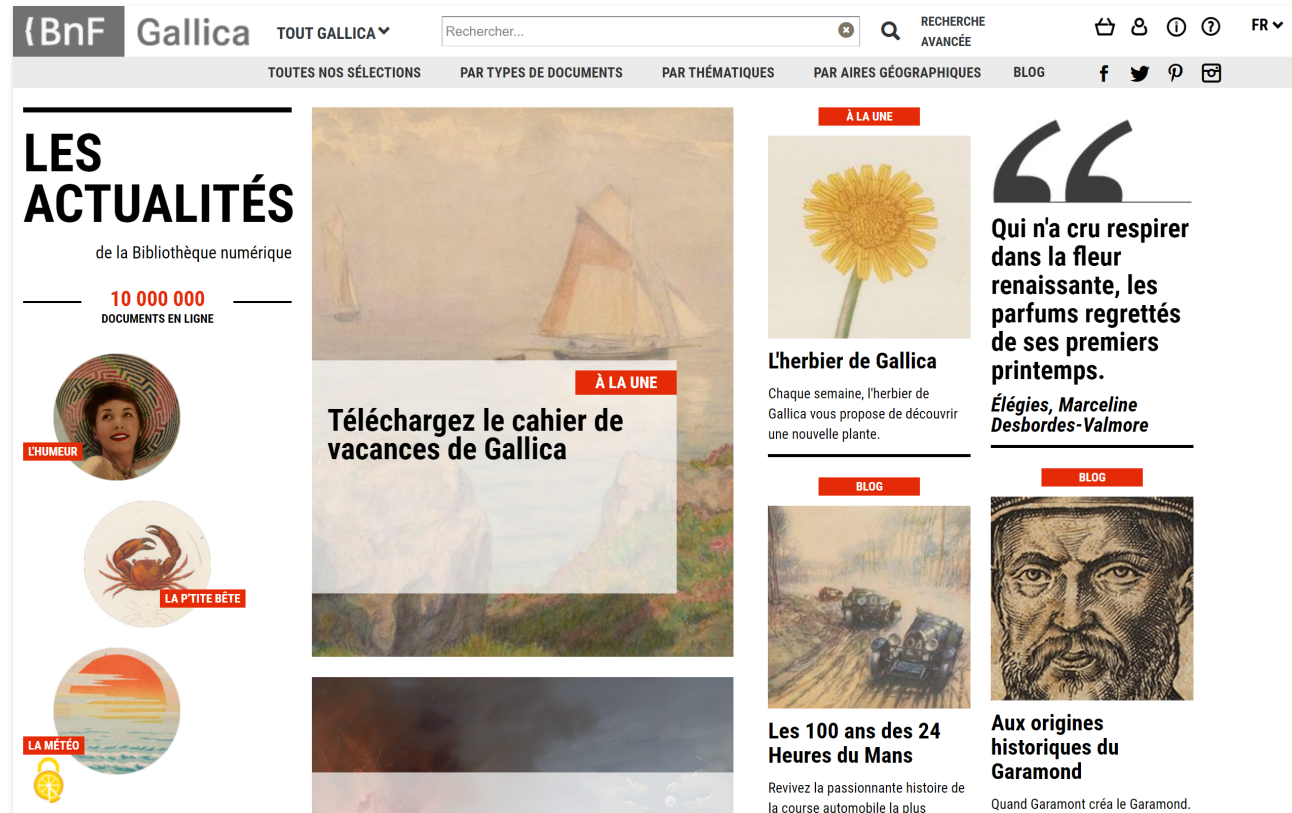


The screenshot shows the Internet Archive homepage. At the top, there is a navigation bar with the Internet Archive logo and icons for various media types. Below this is a search bar for the Wayback Machine, with the text "Search the history of over 817 billion web pages on the Internet." The main content area features a large icon of a classical building, a description of the archive as a non-profit library, and a list of media types with their respective counts: 817B (websites), 38M (books), 10M (movies), 15M (audio), 2.6M (TV shows), 1M (software), 4.7M (images), 251K (podcasts), and 1.8M (text files). There is also a section for "Archive News" and a "New to the Archive?" section with links for borrowing books, downloading files, searching, and listening to music.



Digital Libraries

Gallica (<https://gallica.bnf.fr/>)



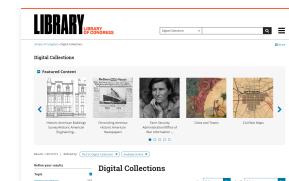
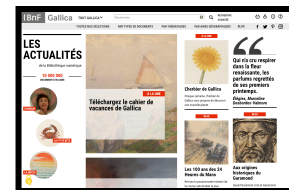
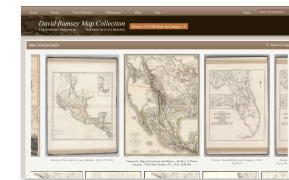
The screenshot shows the Gallica website interface. At the top, there is a navigation bar with the BnF logo, the word "Gallica", and a search bar. Below the navigation bar, there are several menu items: "TOUTES NOS SÉLECTIONS", "PAR TYPES DE DOCUMENTS", "PAR THÉMATIQUES", "PAR AIRES GÉOGRAPHIQUES", and "BLOG".

The main content area features a large banner for "LES ACTUALITÉS de la Bibliothèque numérique" with "10 000 000 DOCUMENTS EN LIGNE". Below this, there are three circular icons: "L'HUMEUR" (a woman's face), "LA P'TITE BÊTE" (a crab), and "LA MÉTÉO" (a sunset over the ocean).

The central focus is a large painting of a sailboat on the water, with a red "À LA UNE" tag above it. Below the painting, the text reads: "Téléchargez le cahier de vacances de Gallica".

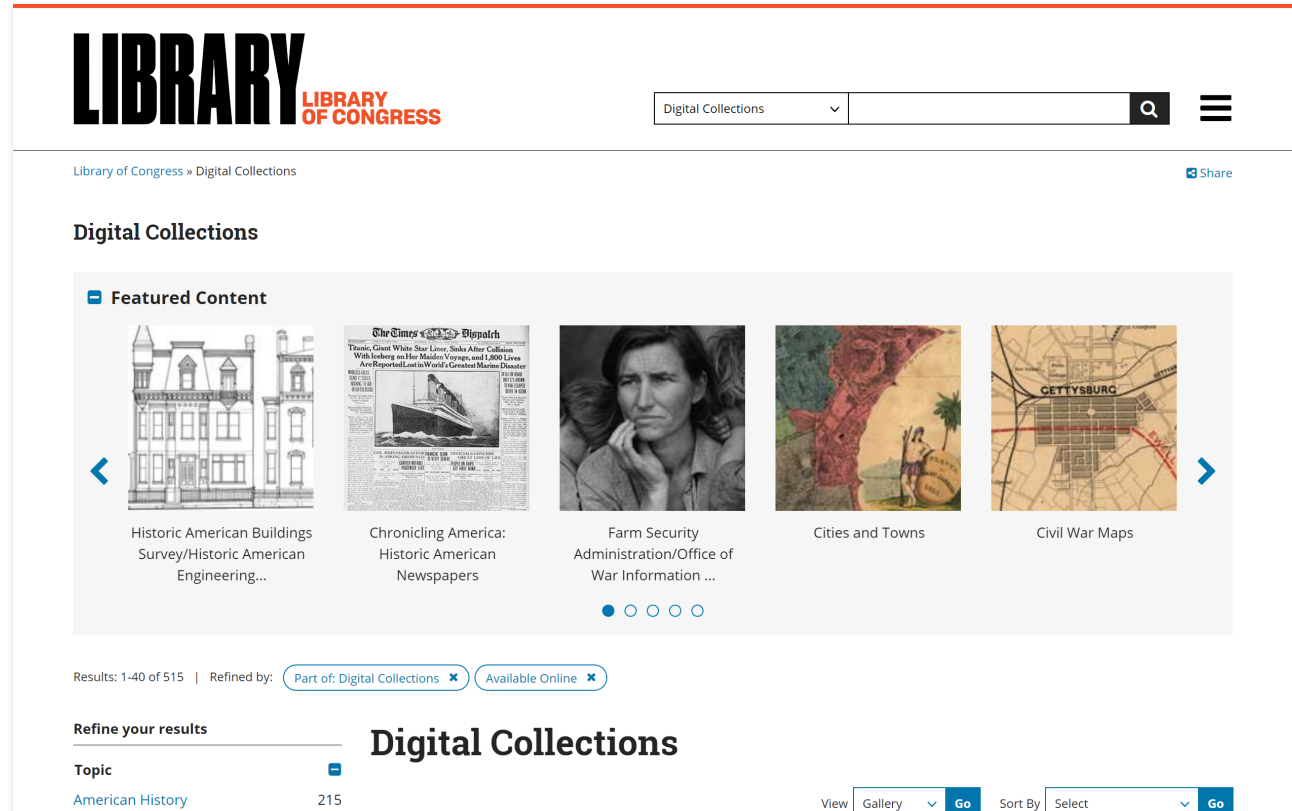
To the right of the sailboat painting, there is a section titled "À LA UNE" featuring a yellow dandelion flower. The text reads: "Qui n'a cru respirer dans la fleur renaissance, les parfums regrettés de ses premiers printemps. *Élégies, Marceline Desbordes-Valmore*".

Below the dandelion, there are two "BLOG" sections. The first features a painting of a vintage car on a dirt road, with the text: "Les 100 ans des 24 Heures du Mans. Revivez la passionnante histoire de la course automobile la plus". The second features a portrait of a man, with the text: "Aux origines historiques du Garamond. Quand Garamont créa le Garamond."



Digital Libraries

Library of Congress (<https://www.loc.gov/collections/>)



LIBRARY LIBRARY OF CONGRESS

Digital Collections

Library of Congress » Digital Collections [Share](#)

Digital Collections

Featured Content

- Historic American Buildings Survey/Historic American Engineering...
- Chronicling America: Historic American Newspapers
- Farm Security Administration/Office of War Information ...
- Cities and Towns
- Civil War Maps

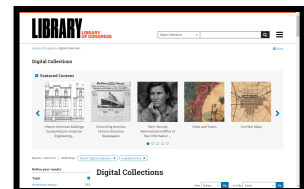
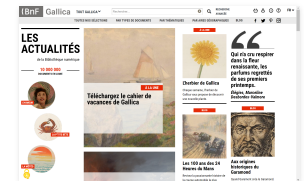
Results: 1-40 of 515 | Refined by: [Part of: Digital Collections](#) [Available Online](#)

Refine your results

Topic American History 215

Digital Collections

View [Gallery](#) [Go](#) Sort By [Select](#) [Go](#)



Data Obtaining

Querying, parsing, and cleaning

 <https://github.com/oldvis/libprocess>

`pypi` `v0.1.4` `code style` `black` `commitizen` `friendly`

Installation

```
pip install libprocess
```

Usage Example




```
from libprocess import DavidRumseyMapCollection

base_url = "https://www.davidrumsey.com"
service = "/luna/servlet/as/search?"
query = "q=type=chart"
querier = DavidRumseyMapCollection("./metadata/", "./imgs/")
querier.fetch_metadata([f"{base_url}{service}{query}"])
querier.process_metadata(save_path="processedMetadata.json")
```

Data Obtaining

Querying, parsing, and cleaning

 <https://github.com/oldvis/libprocess>

 v0.1.4  black  friendly

Installation

```
pip install libprocess
```

Usage Example

```
from libprocess import DavidRumseyMapCollection

base_url = "https://www.davidrumsey.com"
service = "/luna/servlet/as/search?"
query = "q=type=chart"
querier = DavidRumseyMapCollection("./metadata/", "./imgs/")
querier.fetch_metadata([f"{base_url}{service}{query}"])
querier.process_metadata(save_path="processedMetadata.json")
```

Data Obtaining

Querying, parsing, and cleaning

 <https://github.com/oldvis/libprocess>

pypi
v0.1.4
code style
black
commitizen
friendly

Installation

```
pip install libprocess
```

Usage Example

```







from libprocess import DavidRumseyMapCollection

base_url = "https://www.davidrumsey.com"
service = "/luna/servlet/as/search?"
query = "q=type=chart"
querier = DavidRumseyMapCollection("./metadata/", "./imgs/")
querier.fetch_metadata([f"{base_url}{service}{query}"])
querier.process_metadata(save_path="processedMetadata.json")

```

Data Obtained

Number of images with corresponding metadata

Digital Collection	#Images
 Gallica	195585
 Internet Archive	82225
 British Library	39312
 Library of Congress	27742
 David Rumsey Map Collection	25563
 Telefact	264
 Alabama Maps	142
Total	<u>370883</u>

Metadata Schema

```
interface Entry {  
  uuid: string  
  authors: string[]  
  displayName: string  
  publishDate: Date | [Date, Date],  
  downloadUrl: string  
  viewUrl: string  
  languages: string[]  
  tags: string[]  
  abstract: string  
  md5: string  
  phash: string  
  resolution: [number, number]  
  fileSize: number  
  rights: string  
  source: {  
    name: string  
    url: string  
    accessDate: Date  
  }  
}
```

Metadata Schema

```
interface Entry {  
  uuid: string  
  authors: string[]  
  displayName: string  
  publishDate: Date | [Date, Date],  
  downloadUrl: string  
  viewUrl: string  
  languages: string[]  
  tags: string[]  
  abstract: string  
  md5: string  
  phash: string  
  resolution: [number, number]  
  fileSize: number  
  rights: string  
  source: {  
    name: string  
    url: string  
    accessDate: Date  
  }  
}
```

- Bibliographic information

Metadata Schema

```
interface Entry {  
  uuid: string  
  authors: string[]  
  displayName: string  
  publishDate: Date | [Date, Date],  
  downloadUrl: string  
  viewUrl: string  
  languages: string[]  
  tags: string[]  
  abstract: string  
  md5: string  
  phash: string  
  resolution: [number, number]  
  fileSize: number  
  rights: string  
  source: {  
    name: string  
    url: string  
    accessDate: Date  
  }  
}
```

- Bibliographic information
- Image file properties

Metadata Schema

```
interface Entry {  
  uuid: string  
  authors: string[]  
  displayName: string  
  publishDate: Date | [Date, Date],  
  downloadUrl: string  
  viewUrl: string  
  languages: string[]  
  tags: string[]  
  abstract: string  
  md5: string  
  phash: string  
  resolution: [number, number]  
  fileSize: number  
  rights: string  
  source: {  
    name: string  
    url: string  
    accessDate: Date  
  }  
}
```

- Bibliographic information
- Image file properties
- Copyright information

Metadata Schema

```
interface Entry {  
  uuid: string  
  authors: string[]  
  displayName: string  
  publishDate: Date | [Date, Date],  
  downloadUrl: string  
  viewUrl: string  
  languages: string[]  
  tags: string[]  
  abstract: string  
  md5: string  
  phash: string  
  resolution: [number, number]  
  fileSize: number  
  rights: string  
  source: {  
    name: string  
    url: string  
    accessDate: Date  
  }  
}
```

- Bibliographic information
- Image file properties
- Copyright information

Metadata Schema

```
interface Entry {  
  uuid: string  
  authors: string[]  
  displayName: string  
  publishDate: Date | [Date, Date],  
  downloadUrl: string  
  viewUrl: string  
  languages: string[]  
  tags: string[]  
  abstract: string  
  md5: string  
  phash: string  
  resolution: [number, number]  
  fileSize: number  
  rights: string  
  source: {  
    name: string  
    url: string  
    accessDate: Date  
  }  
}
```

- Bibliographic information
- Image file properties
- Copyright information

Metadata Schema

```
interface Entry {  
  uuid: string  
  authors: string[]  
  displayName: string  
  publishDate: Date | [Date, Date],  
  downloadUrl: string  
  viewUrl: string  
  languages: string[]  
  tags: string[]  
  abstract: string  
  md5: string  
  phash: string  
  resolution: [number, number]  
  fileSize: number  
  rights: string  
  source: {  
    name: string  
    url: string  
    accessDate: Date  
  }  
}
```

- Bibliographic information
- Image file properties
- Copyright information

Metadata Schema

```
interface Entry {  
  uuid: string  
  authors: string[]  
  displayName: string  
  publishDate: Date | [Date, Date],  
  downloadUrl: string  
  viewUrl: string  
  languages: string[]  
  tags: string[]  
  abstract: string  
  md5: string  
  phash: string  
  resolution: [number, number]  
  fileSize: number  
  rights: string  
  source: {  
    name: string  
    url: string  
    accessDate: Date  
  }  
}
```

- Bibliographic information
- Image file properties
- Copyright information

Labeling System

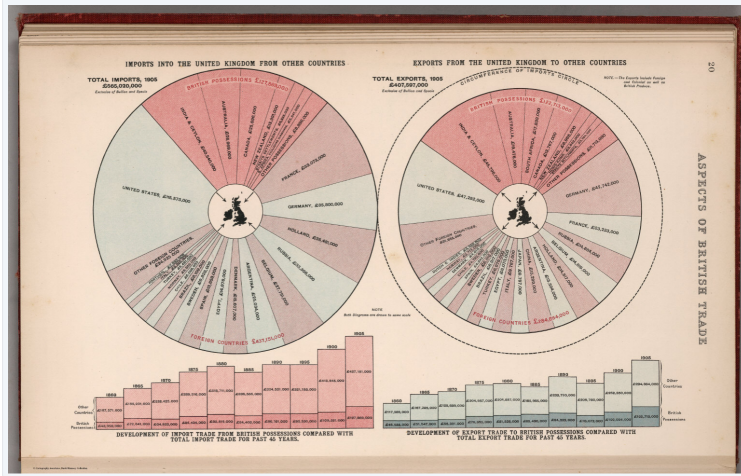
Distinguish visualization images from other images

OldVisOnline Sign in View Annotate Contribute About ⚙️ 🔄

▼ Selectors 🔍 UnLabeled 🔍 Labeled 🔍 Unsure 🔍

🗪 Entries 1/1 in page labeled #entries: 25563

29. Statistical Diagram: Aspects of British Trade.



The diagram consists of two circular sunburst charts and two bar graphs. The left sunburst chart is titled 'IMPORTS INTO THE UNITED KINGDOM FROM OTHER COUNTRIES' and shows various countries like 'UNITED STATES, CANADA', 'FRANCE', 'GERMANY', etc. The right sunburst chart is titled 'EXPORTS FROM THE UNITED KINGDOM TO OTHER COUNTRIES' and shows 'UNITED STATES, CANADA', 'FRANCE', 'GERMANY', etc. Below these are two bar graphs: 'DEVELOPMENT OF IMPORT TRADE FROM BRITISH POSSESSIONS COMPARED WITH TOTAL IMPORT TRADE FOR PAST 40 YEARS' and 'DEVELOPMENT OF EXPORT TRADE TO BRITISH POSSESSIONS COMPARED WITH TOTAL EXPORT TRADE FOR PAST 40 YEARS'. The title 'ASPECTS OF BRITISH TRADE' is written vertically on the right side of the charts.

author: Bartholomew, J. G.
 year: 1907
 source: David Rumsey Map Collection
 language: English
 tags: Statistical Atlas, Statistical Diagram
 📄 view metadata 📄 copy metadata 🌐 url 📄 G google

✓ Vis	✗ Not Vis
✓ Map	✗ Not Map
✓ Text	✗ Not Text
? Unsure	Confident

previous 1 entry next 1 entry goto first unlabeled

🔗 Progress	#Vis/Not: 9790 / 15773	#Map/Not: 15795 / 9768	#Text/Not: 5811 / 19752	#Unsure: 2279	#Not-Labeled: 0	#Confident: 23284	submit	download	upload
------------	---------------------------	---------------------------	----------------------------	------------------	--------------------	----------------------	--------	----------	--------

Labeling System

Distinguish visualization images

Semi-Automatic Labeling

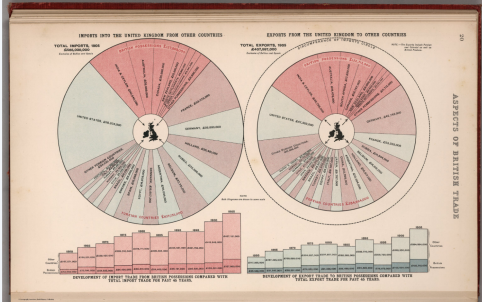
The workflow

OldVisOnline Sign in View Annotate Contribute About

Selectors UnLabeled Labeled Unsure Search

Entries 1/1 in page labeled #entries: 25563

29 Statistical Diagram: Aspects of British Trade.



author: Bartholomew, J. G.
 year: 1907
 source: David Rumsey Map Collection
 language: English
 tags: Statistical Atlas, Statistical Diagram
 view metadata copy metadata url G google

Vis Not Vis
 Map Not Map
 Text Not Text
 Unsure Confident

previous 1 entry next 1 entry goto first unlabeled

Progress	#Vis/Not:	#Map/Not:	#Text/Not:	#Unsure:	#Not-Labeled:	#Confident:	submit	download	upload
	9790 / 15773	15795 / 9768	5811 / 19752	2279	0	23284			

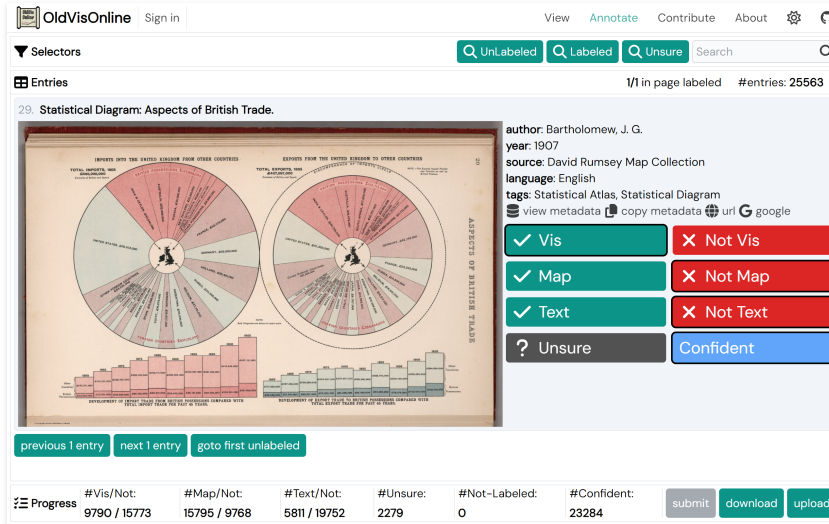
Labeling System

Distinguish visualization images

Semi-Automatic Labeling

The workflow

1. Manually annotate 25K images



The screenshot shows the OldVisOnline interface for labeling a visualization. The main content is a statistical diagram titled "Statistical Diagram: Aspects of British Trade" by Bartholomew, J. G. (1907). The diagram consists of two circular sunburst charts and a bar chart at the bottom. The sunburst charts show trade data for "EXPORTS FROM THE UNITED KINGDOM TO OTHER COUNTRIES" and "IMPORTS INTO THE UNITED KINGDOM FROM OTHER COUNTRIES". The bar chart shows "SEVERAL RESISTIVE AND ELASTIC" materials.

Metadata for the image:

- author: Bartholomew, J. G.
- year: 1907
- source: David Rumsey Map Collection
- language: English
- tags: Statistical Atlas, Statistical Diagram

Annotation options:

- ✓ Vis (green) / ✗ Not Vis (red)
- ✓ Map (green) / ✗ Not Map (red)
- ✓ Text (green) / ✗ Not Text (red)
- ? Unsure (grey) / Confident (blue)

Progress summary:

Progress	#Vis/Not:	#Map/Not:	#Text/Not:	#Unsure:	#Not-Labeled:	#Confident:
9790 / 15773	15795 / 9768	5811 / 19752	2279	0	23284	

Labeling System

Distinguish visualization images

Semi-Automatic Labeling

The workflow

1. Manually annotate 25K images
2. Finetune VGG-16 for text/map/vis detection

The screenshot shows the OldVisOnline interface. At the top, there are navigation links: View, Annotate, Contribute, About, and a settings icon. Below this is a search bar with filters for Unlabeled, Labeled, and Unsure. The main content area displays a statistical diagram titled "Statistical Diagram: Aspects of British Trade." The diagram consists of two circular sunburst charts and a bar chart at the bottom. To the right of the diagram, there is a metadata panel with the following information:

- author: Bartholomew, J. G.
- year: 1907
- source: David Rumsey Map Collection
- language: English
- tags: Statistical Atlas, Statistical Diagram

Below the metadata panel are several action buttons for labeling:

- ✓ Vis (green)
- ✗ Not Vis (red)
- ✓ Map (green)
- ✗ Not Map (red)
- ✓ Text (green)
- ✗ Not Text (red)
- ? Unsure (grey)
- Confident (blue)

At the bottom of the interface, there is a progress summary table and a set of action buttons:

Progress	#Vis/Not:	#Map/Not:	#Text/Not:	#Unsure:	#Not-Labeled:	#Confident:
	9790 / 15773	15795 / 9768	5811 / 19752	2279	0	23284

Buttons: submit, download, upload

Labeling System

Distinguish visualization images

Semi-Automatic Labeling

The workflow

1. Manually annotate 25K images
2. Finetune VGG-16 for text/map/vis detection
3. Predict on the remaining 345K images

The screenshot shows the OldVisOnline interface for labeling a visualization. The main content is a statistical diagram titled "Statistical Diagram: Aspects of British Trade" by Bartholomew, J. G. (1907). The diagram consists of two circular sunburst charts and a bar chart at the bottom. The interface includes a search bar, a selector menu, and a progress indicator showing "1/1 in page labeled" and "#entries: 25563".

Metadata for the entry:

- author: Bartholomew, J. G.
- year: 1907
- source: David Rumsey Map Collection
- language: English
- tags: Statistical Atlas, Statistical Diagram

Annotation options:

- ✓ Vis (green) / ✗ Not Vis (red)
- ✓ Map (green) / ✗ Not Map (red)
- ✓ Text (green) / ✗ Not Text (red)
- ? Unsure (grey) / Confident (blue)

Progress summary:

Progress	#Vis/Not:	#Map/Not:	#Text/Not:	#Unsure:	#Not-Labeled:	#Confident:
9790 / 15773	15795 / 9768	5811 / 19752	2279	0	23284	

Labeling System

Distinguish visualization images

The screenshot shows the OldVisOnline interface. At the top, there are navigation links: View, Annotate, Contribute, About, and a settings icon. Below this is a search bar with filters for Unlabeled, Labeled, and Unsure. The main content area displays a statistical diagram titled "Statistical Diagram: Aspects of British Trade." The diagram consists of two circular sunburst charts and a bar chart at the bottom. The sunburst charts show trade data for the United Kingdom and other countries, with segments representing different trade categories. The bar chart shows the number of ships registered in the United Kingdom from 1870 to 1900. To the right of the diagram is a metadata panel with the following information:

- author: Bartholomew, J. G.
- year: 1907
- source: David Rumsey Map Collection
- language: English
- tags: Statistical Atlas, Statistical Diagram

Below the metadata are several action buttons: "view metadata", "copy metadata", "url", and "google". There are also seven buttons for labeling: "Vis", "Map", "Text", "Unsure", "Not Vis", "Not Map", and "Not Text". The "Vis", "Map", and "Text" buttons are green with checkmarks, while the "Not Vis", "Not Map", and "Not Text" buttons are red with X marks. The "Unsure" button is grey with a question mark, and the "Confident" button is blue.

At the bottom of the interface, there is a progress bar and a table of statistics:

Progress	#Vis/Not:	#Map/Not:	#Text/Not:	#Unsure:	#Not-Labeled:	#Confident:
	9790 / 15773	15795 / 9768	5811 / 19752	2279	0	23284

At the bottom right, there are buttons for "submit", "download", and "upload".

Semi-Automatic Labeling

The workflow

1. Manually annotate 25K images
2. Finetune VGG-16 for text/map/vis detection
3. Predict on the remaining 345K images
4. Manually screen and correct the predictions

Labeling System

Distinguish visualization images

The screenshot shows the OldVisOnline interface. At the top, there are navigation links: View, Annotate, Contribute, About, and a settings icon. Below this is a search bar with filters for Unlabeled, Labeled, and Unsure. The main content area displays a statistical diagram titled "Statistical Diagram: Aspects of British Trade" by Bartholomew, J. G., published in 1907. The diagram consists of two circular sunburst charts and two bar charts at the bottom. To the right of the image are several buttons for classification: "Vis", "Map", "Text", "Unsure", "Not Vis", "Not Map", "Not Text", and "Confident". At the bottom, there is a progress table and action buttons for submit, download, and upload.

Progress	#Vis/Not:	#Map/Not:	#Text/Not:	#Unsure:	#Not-Labeled:	#Confident:
	9790 / 15773	15795 / 9768	5811 / 19752	2279	0	23284








Semi-Automatic Labeling

The workflow

1. Manually annotate 25K images
2. Finetune VGG-16 for text/map/vis detection
3. Predict on the remaining 345K images
4. Manually screen and correct the predictions
5. Filter visualizations by publish date


Outcome



13K images with metadata

Digital Library	#Images	#Vis	Before 1950
 David Rumsey Map Collection	25563	9790	7816
 Internet Archive	82225	6885	2985
 Gallica	195585	2183	2090
 Library of Congress	27742	299	212
 Telefact	264	225	225
 British Library	39312	137	132
 Alabama Maps	142	52	51
Total	370883	19571	<u>13511</u>

Online Gallery

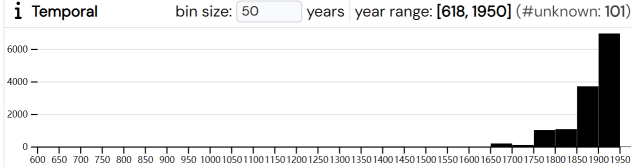
<https://github.com/oldvis/gallery>

 OldVisOnline [Sign in](#)

[View](#)
[Annotate](#)
[Contribute](#)
[About](#)



Selectors search: 'Playfair, William' ✕

Temporal bin size: 50 years year range: [618, 1950] (#unknown: 101)



Entries #matched: 89 #entries: 13511

[view metadata](#)
[copy metadata](#)
[url](#)
[google](#)

Tags #tags: 265

- Atlas Map (4202)
- Statistical Atlas (1636)
- Chart Atlas (1632)
- Nautical Charts (1591)
- Chart Map (1523) Statistical (1498)
- National Atlas (1317) World Atlas (1142)
- Statistical Diagram (945)
- Agriculture (852) Historical (794)

Authors #authors: 1327

- Sloane, Charles S. (1332)
- United States. Census Office (1003)
- Gannett, Henry (922)
- Budapest (Hungary). Főváros Statisztikai Hivatala (439)
- Illyefalvi, Lajos I. (439)
- Ministere des Travaux Publics (428)
- Cheysson, Émile (428)

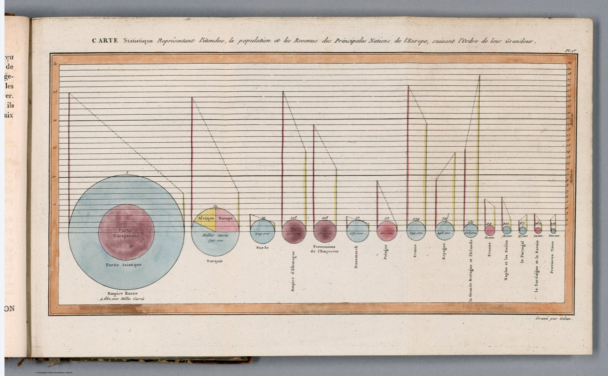
Languages #languages: 38

- English (7717) French (3304)
- German (1086) Hungarian (360)
- Slovenian (293) Spanish (226)
- Italian (169) Portuguese (152)
- Swedish (95) Turkish (76) Latin (69)
- Czech (55) Croatian (49)
- Hebrew (36) Russian (22)
- Multiple languages (20)

Sources #sources: 7

- David Rumsey Map Collection (7816)
- Internet Archive (2985) Gallica (2090)
- Telefact (225) Library of Congress (212)
- British Library (132) Alabama Maps (51)

3 Carte statistique représentant l'étendue, la population et les revenus des principales nations de l'Europe, suivant l'ordre de leur grandeur.



author: Playfair, William
year: 1802
source: David Rumsey Map Collection
language: French
tags: Atlas Map, Population, Statistical Diagram, Statistical Atlas, Statistical
abstract: Fold-out statistical map shows the extent, population, and income of the principal European nations, in order of size. Diagram overlaid onto a chart, allowing comparison of scale. Engraving hand-colored in pastel palette.

[view metadata](#)
[copy metadata](#)
[url](#)
[google](#)

Online Gallery

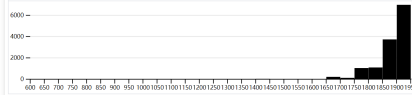
 <https://github.com/oldvis/gallery>

OldVisOnline Sign in View Annotate Contribute About

search: 'Playfair, William' X

Unlabeled Labeled Unsure Search

Temporal bin size: 50 years year range: [618, 1950] (#unknown: 101)



Tags #tags: 265

- Atlas Map (4202)
- Statistical Atlas (1636)
- Chart Atlas (1632)
- Nautical Charts (1591)
- Chart Map (1523) Statistical (1498)
- National Atlas (1317) World Atlas (1142)
- Statistical Diagram (945)
- Agriculture (852) Historical (794)

Authors #authors: 1327

- Sloane, Charles S. (1332)
- United States. Census Office (1003)
- Gannett, Henry (922)
- Budapest (Hungary). Fővárosi Statisztikai Hivatal (439)
- Illyefalvi, Lajos I. (439)
- Ministère des Travaux Publics (428)
- Cheysson, Émile (428)

Languages #languages: 38

- English (777) French (3304)
- German (1086) Hungarian (360)
- Slovenian (293) Spanish (226)
- Italian (169) Portuguese (152)
- Swedish (95) Turkish (76) Latin (69)
- Czech (55) Croatian (49)
- Hebrew (36) Russian (22)
- Multiple languages (20)

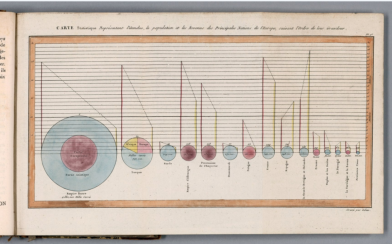
Sources #sources: 7

- David Rumsey Map Collection (7616)
- Internet Archive (2985) Gallica (2090)
- Telefact (225) Library of Congress (212)
- British Library (132) Alabama Maps (51)

Entries #matched: 89 #entries: 13511

view metadata copy metadata url google

3. Carte statistique représentant l'étendue, la population et les revenus des principales nations de l'Europe, suivant fordeur leur grandeur.



author: Playfair, William

year: 1802

source: David Rumsey Map Collection

language: French

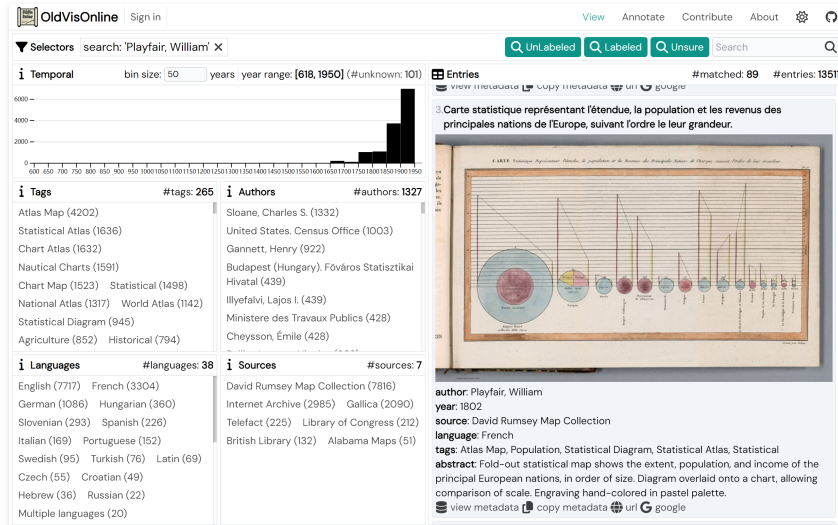
tags: Atlas Map, Population, Statistical Diagram, Statistical Atlas, Statistical

abstract: Fold-out statistical map shows the extent, population, and income of the principal European nations, in order of size. Diagram overlaid onto a chart, allowing comparison of scale. Engraving hand-colored in pastel palette.

view metadata copy metadata url google

Online Gallery

 <https://github.com/oldvis/gallery>



The screenshot shows the OldVisOnline web interface. At the top, there are navigation links: View, Annotate, Contribute, About, and a settings icon. Below the navigation is a search bar with the text "search: 'Playfair, William' X". To the left of the search bar are filters for "Unlabeled", "Labeled", and "Unsure". Below the search bar is a "Temporal" filter with a bin size of 50 years and a year range of [618, 1950]. A bar chart shows the distribution of entries over time, with a significant peak around 1800. Below the bar chart are filters for "Tags" (265 tags) and "Authors" (1327 authors). The "Tags" filter includes categories like "Atlas Map", "Statistical Atlas", "Chart Atlas", "Nautical Charts", "Chart Map", "National Atlas", "World Atlas", "Statistical Diagram", "Agriculture", and "Historical". The "Authors" filter includes names like "Sloane, Charles S.", "United States, Census Office", "Gannett, Henry", "Budapest (Hungary)", "Illyefalvi, Lajos I.", "Ministere des Travaux Publics", and "Cheysson, Emile". Below these filters are filters for "Languages" (38 languages) and "Sources" (7 sources). The "Languages" filter includes "English", "French", "German", "Hungarian", "Slovenian", "Spanish", "Italian", "Portuguese", "Swedish", "Turkish", "Latin", "Czech", "Croatian", "Hebrew", "Russian", and "Multiple languages". The "Sources" filter includes "David Rumsey Map Collection", "Internet Archive", "Telefact", "Library of Congress", "British Library", and "Alabama Maps". The main content area shows a detailed view of a historical statistical map titled "Carte statistique représentant l'étendue, la population et les revenus des principales nations de l'Europe, suivant l'ordre de leur grandeur." The map is a fold-out statistical map showing the extent, population, and income of the principal European nations, ordered by size. It features a circular diagram overlaid on a map of Europe, with various colored segments representing different nations. Below the map, there is a metadata section with the following information: author: Playfair, William; year: 1802; source: David Rumsey Map Collection; language: French; tags: Atlas Map, Population, Statistical Diagram, Statistical Atlas, Statistical; abstract: Fold-out statistical map shows the extent, population, and income of the principal European nations, in order of size. Diagram overlaid onto a chart, allowing comparison of scale. Engraving hand-colored in pastel palette. At the bottom of the metadata section, there are links for "view metadata", "copy metadata", "url", and "google".

Dataset Downloading

 https://github.com/oldvis/oldvis_dataset

`pip` `v0.1.1` `code style` `black` `commitizen` `friendly`

Installation

```
pip install oldvis_dataset
```

Usage Example

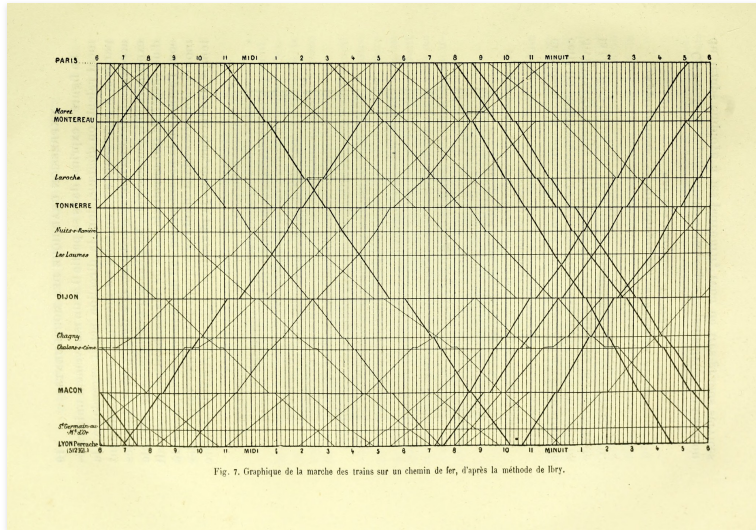
```
from oldvis_dataset import visualizations, fetch_images
```


```
visualizations.download("./visualizations.json")
fetch_images("./visualizations.json", "./images/")
```

What can we use historical visualizations for?

Usage scenarios of historical visualizations

Inspiration for Contemporary Design

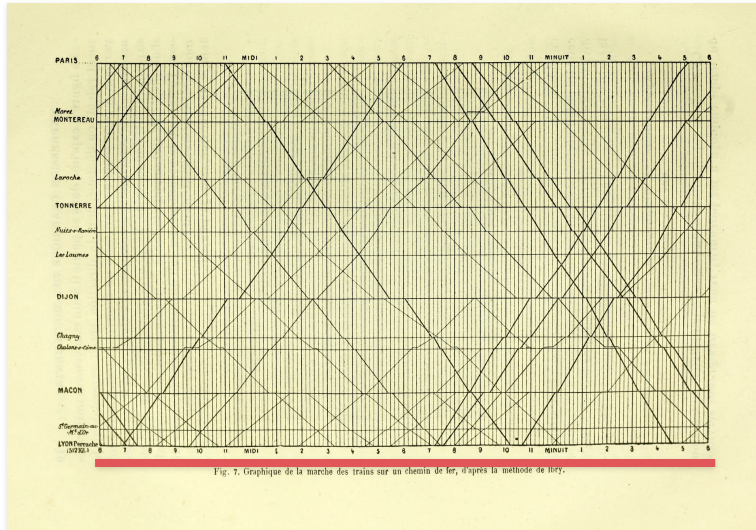



Étienne-Jules Marey's schedule chart^[1]
(image in public domain )

[1] **La Méthode Graphique dans les Sciences Expérimentales et Principalement en Physiologie et en Médecine**, Étienne-Jules Marey, 1878

[2] **ViDX: Visual Diagnostics of Assembly Line Performance in Smart Factories**, Panpan Xu et al., IEEE Transactions on Visualization and Computer Graphics, 2017 18 / 22

Inspiration for Contemporary Design

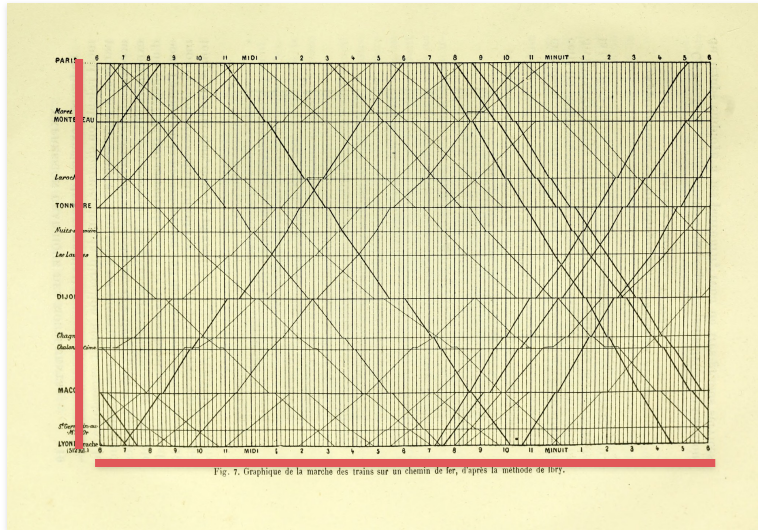



Étienne-Jules Marey's schedule chart^[1]
 (image in public domain )

[1] **La Méthode Graphique dans les Sciences Expérimentales et Principalement en Physiologie et en Médecine**, Étienne-Jules Marey, 1878

[2] **ViDX: Visual Diagnostics of Assembly Line Performance in Smart Factories**, Panpan Xu et al., IEEE Transactions on Visualization and Computer Graphics, 2017 18 / 22

Inspiration for Contemporary Design

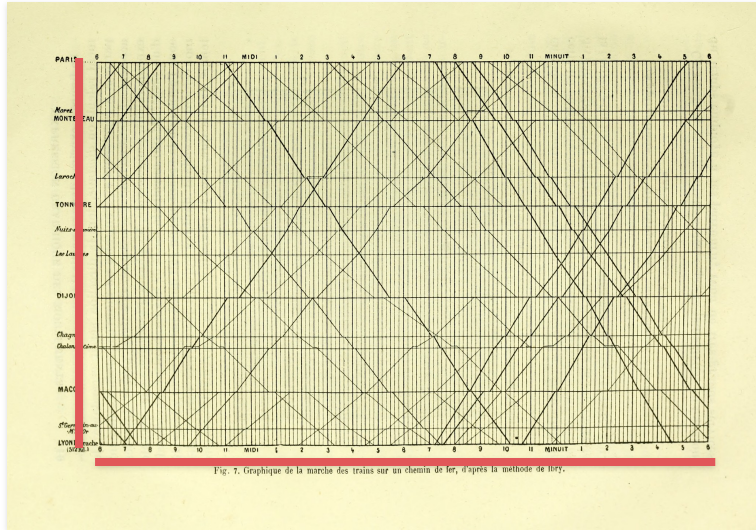


Étienne-Jules Marey's schedule chart^[1]
(image in public domain )

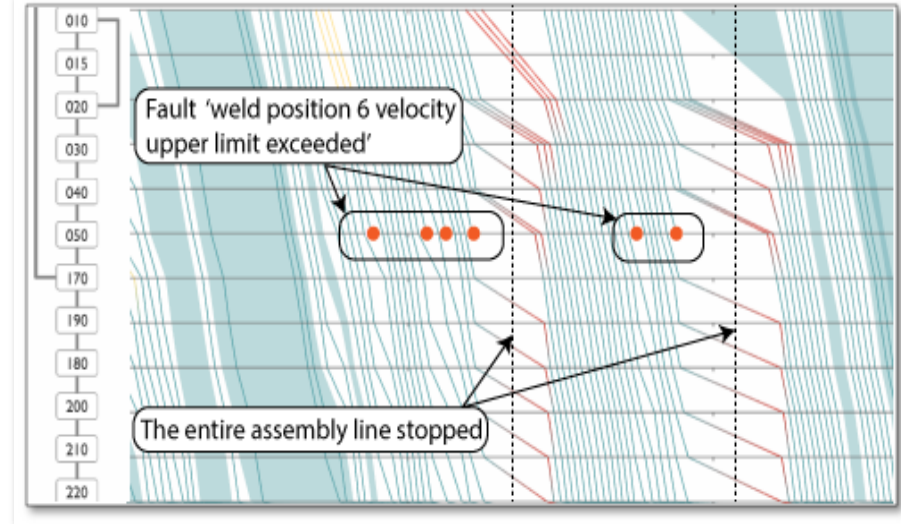
[1] **La Méthode Graphique dans les Sciences Expérimentales et Principalement en Physiologie et en Médecine**, Étienne-Jules Marey, 1878

[2] **ViDX: Visual Diagnostics of Assembly Line Performance in Smart Factories**, Panpan Xu et al., IEEE Transactions on Visualization and Computer Graphics, 2017 18 / 22

Inspiration for Contemporary Design



Étienne-Jules Marey's schedule chart^[1]
(image in public domain ©)



Xu et al.'s redesign^[2]
(image © 2017 IEEE)

[1] **La Méthode Graphique dans les Sciences Expérimentales et Principalement en Physiologie et en Médecine**, Étienne-Jules Marey, 1878

[2] **ViDX: Visual Diagnostics of Assembly Line Performance in Smart Factories**, Panpan Xu et al., IEEE Transactions on Visualization and Computer Graphics, 2017 18 / 22

Inspiration for Contemporary Design

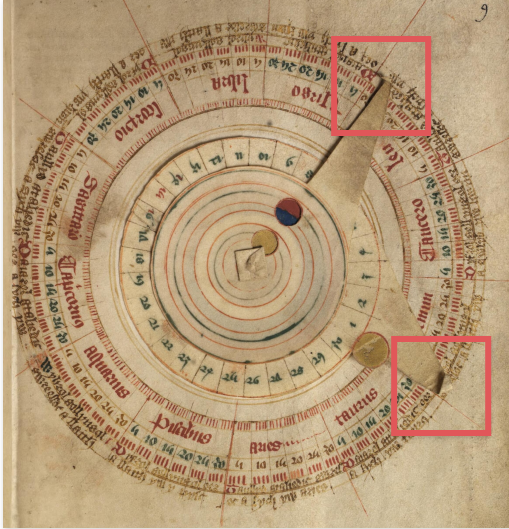



Gutun Owain's volvelle^[1]
 (image in public domain ©)

[1] Hen Almanac Cymreig & C., Gutun Owain, 1489

[2] Vol²velle: Printable Interactive Volume Visualization, Sergej Stoppel and Stefan Bruckner, IEEE Transactions on Visualization and Computer Graphics, 2017

Inspiration for Contemporary Design

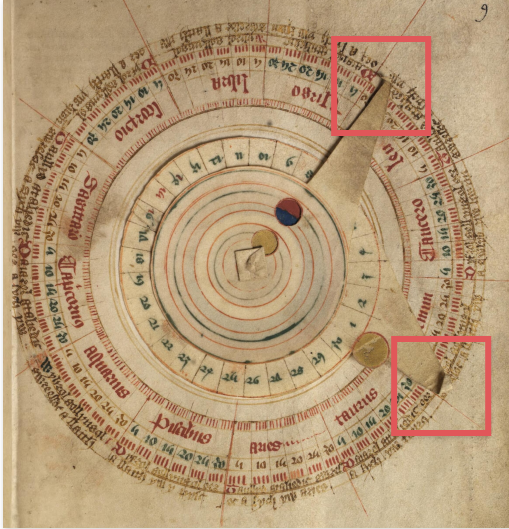


Gutun Owain's volvelle^[1]
(image in public domain )

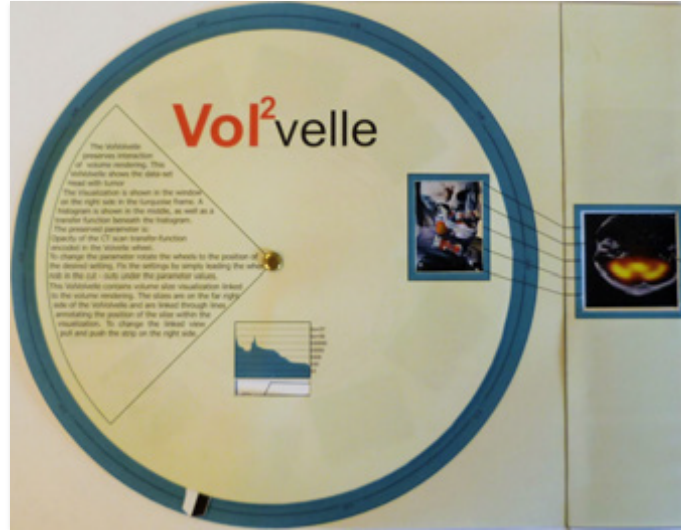
[1] Hen Almanac Cymreig & C., Gutun Owain, 1489

[2] Vol²velle: Printable Interactive Volume Visualization, Sergej Stoppel and Stefan Bruckner, IEEE Transactions on Visualization and Computer Graphics, 2017

Inspiration for Contemporary Design



Gutun Owain's volvelle^[1]
(image in public domain ©)

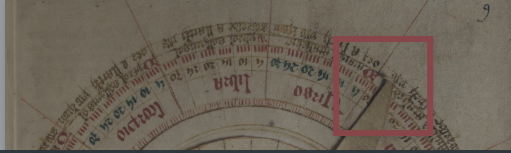


Stoppel and Bruckner's redesign^[2]
(image © 2017 IEEE)

[1] Hen Almanac Cymreig & C., Gutun Owain, 1489

[2] Vol²velle: Printable Interactive Volume Visualization, Sergej Stoppel and Stefan Bruckner, IEEE Transactions on Visualization and Computer Graphics, 2017

Inspiration for Contemporary Design



Opportunities for Redesign

- Adding interaction
- Improving scalability

Gutun Owain's *Vol² velle*^[1]

(image in public domain ©)

Stoppel and Bruckner's redesign^[2]

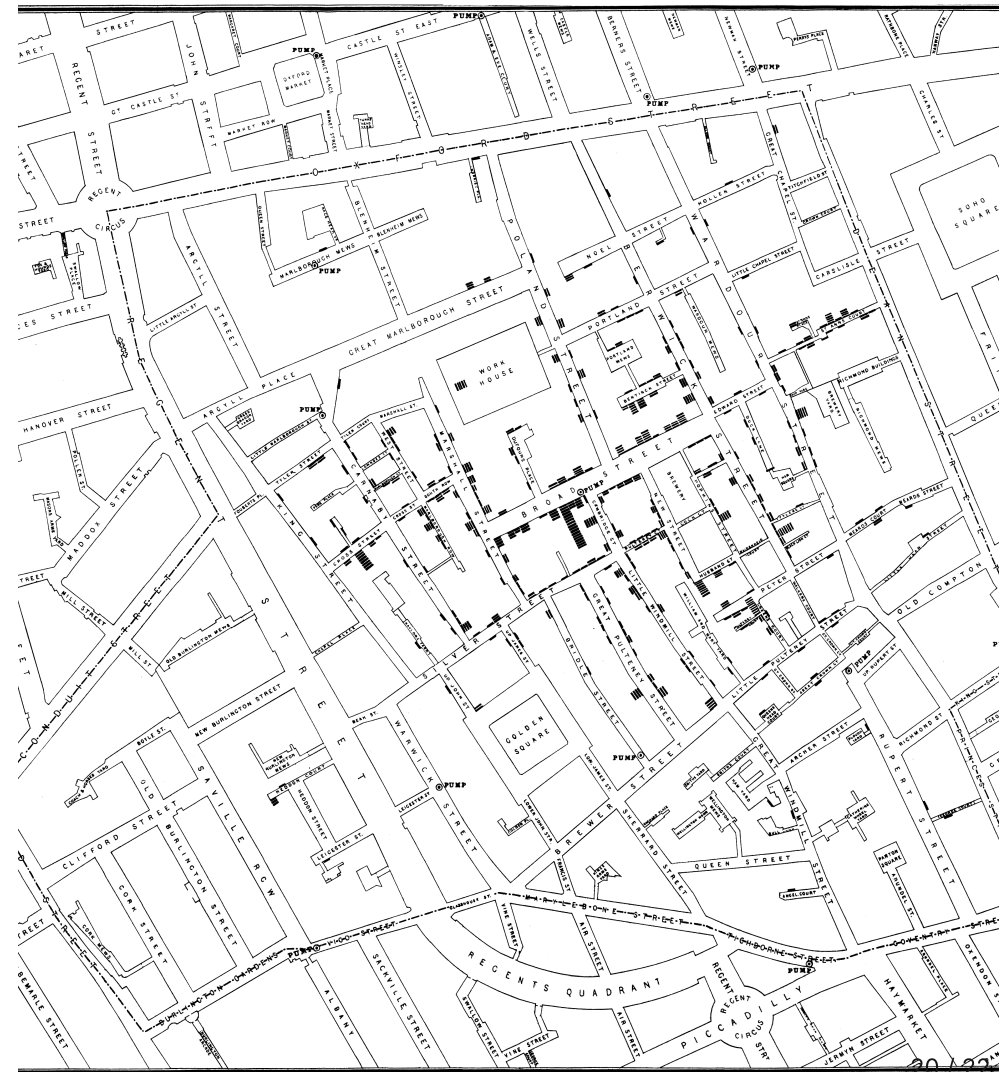
(image © 2017 IEEE)

[1] Hen Almanac Cymreig & C., Gutun Owain, 1489

[2] **Vol² velle: Printable Interactive Volume Visualization**, Sergej Stoppel and Stefan Bruckner, IEEE Transactions on Visualization and Computer Graphics, 2017

Textual Criticism

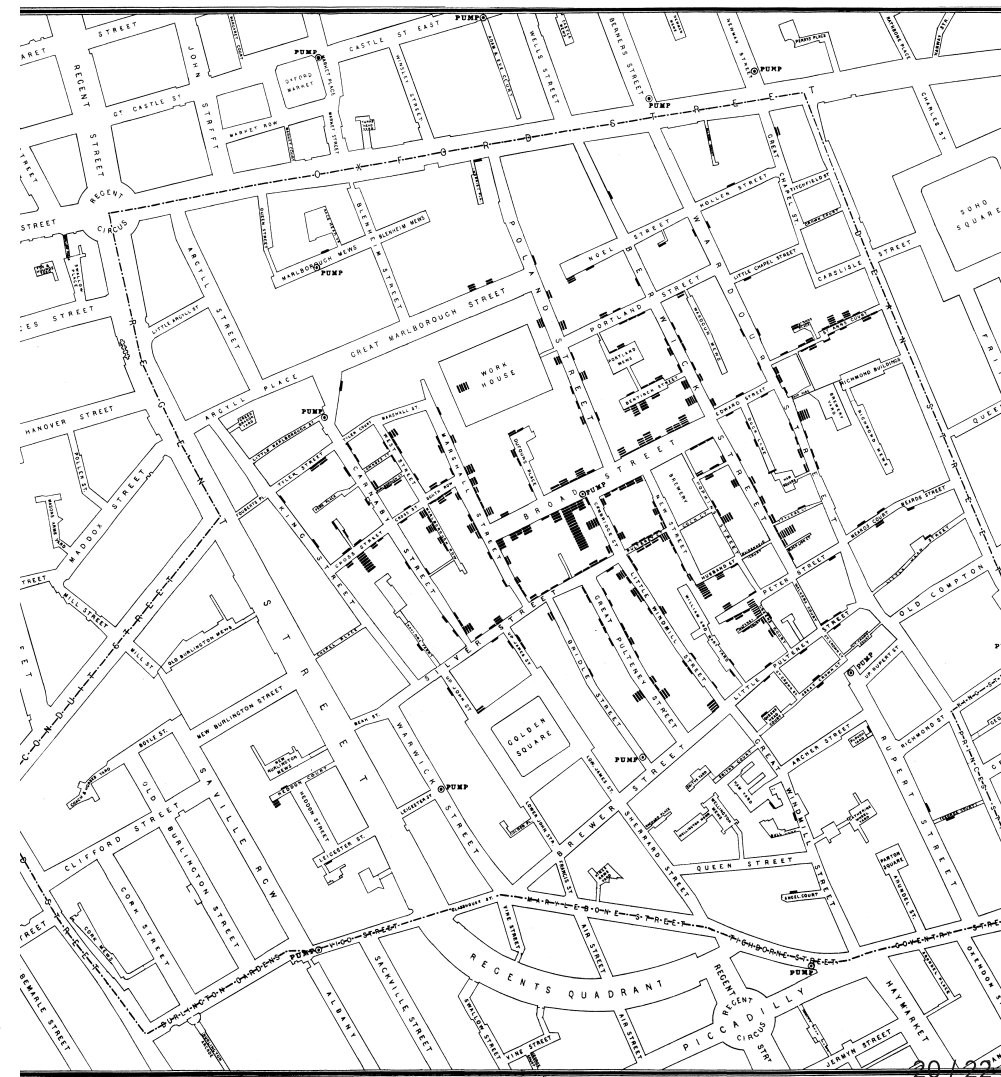
How many cholera cases are plotted on John Snow's Map^[1]?



Textual Criticism

How many cholera cases are plotted on John Snow's Map^[1]?

- 579^[2]
- 578^[3, 4]



[1] **On the Mode of Communication of Cholera**, John Snow, 1855

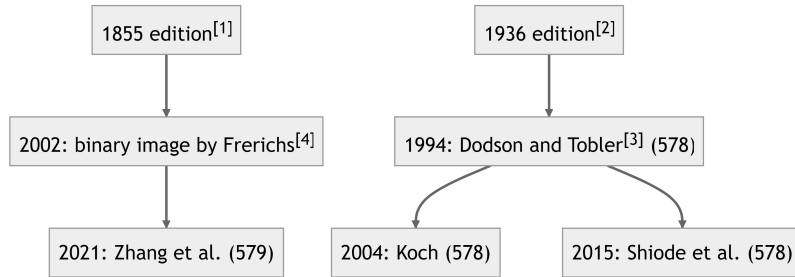
[2] **MI3: Machine-Initiated Intelligent Interaction for Interactive Classification and Data Reconstruction**, Yu Zhang et al., ACM Transactions on Interactive Intelligent Systems, 2021

[3] **The Map as Intent: Variations on the Theme of John Snow**, Tom Koch, Cartographica, 2004

[4] **The mortality rates and the space-time patterns of John Snow's cholera epidemic map**, Narushige Shioda et al., International Journal of Health Geographics, 2015

Textual Criticism

The lineage of the data sources



[1] **On the Mode of Communication of Cholera**, John Snow, page 44-45, 1855

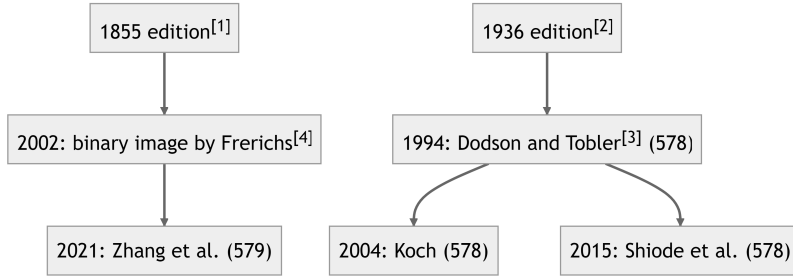
[2] **Snow on Cholera: Being a Reprint of Two Papers by John Snow, M.D.**, John Snow, page 44-45, 1936

[3] **Snow's Cholera Map**, Rusty Dodson and Waldo Tobler, 1994

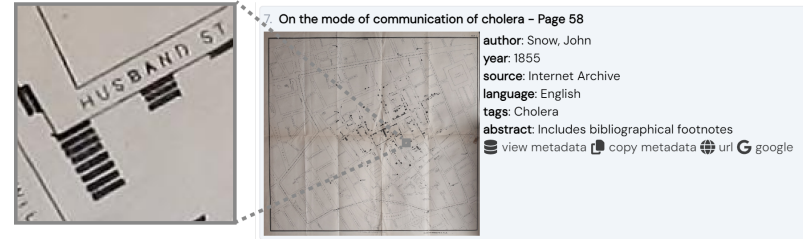
[4] **John Snow - a historical giant in epidemiology**, Ralph R. Frerichs, 2002

Textual Criticism

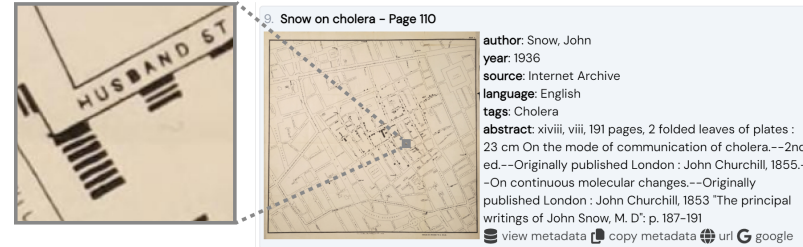
The lineage of the data sources



A The 1855 edition of Snow's map



B The 1936 edition of Snow's map



[1] **On the Mode of Communication of Cholera**, John Snow, page 44-45, 1855

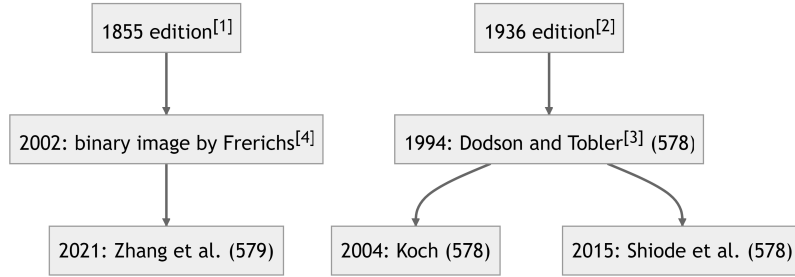
[2] **Snow on Cholera: Being a Reprint of Two Papers by John Snow, M.D.**, John Snow, page 44-45, 1936

[3] **Snow's Cholera Map**, Rusty Dodson and Waldo Tobler, 1994

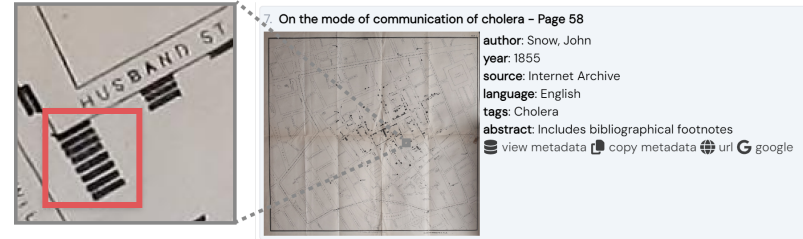
[4] **John Snow - a historical giant in epidemiology**, Ralph R. Frerichs, 2002

Textual Criticism

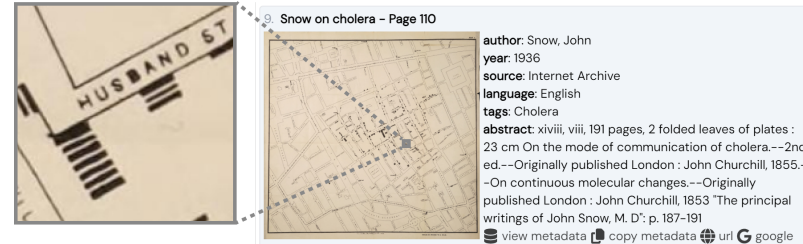
The lineage of the data sources



A The 1855 edition of Snow's map



B The 1936 edition of Snow's map



- 1855 edition^[1]: **8** in the highlighted area (**579** in total)

[1] **On the Mode of Communication of Cholera**, John Snow, page 44-45, 1855

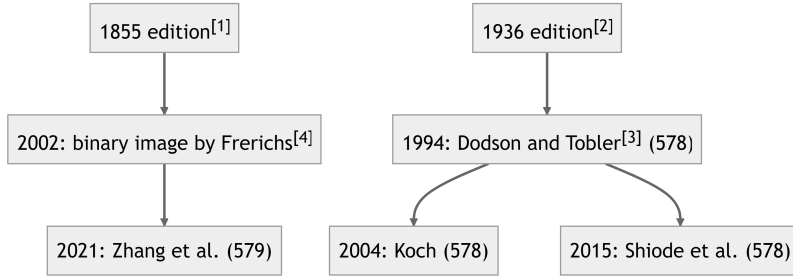
[2] **Snow on Cholera: Being a Reprint of Two Papers by John Snow, M.D.**, John Snow, page 44-45, 1936

[3] **Snow's Cholera Map**, Rusty Dodson and Waldo Tobler, 1994

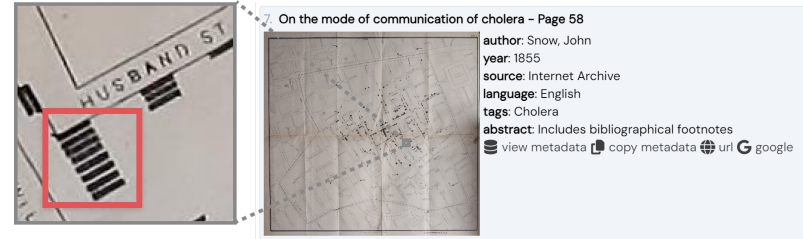
[4] **John Snow - a historical giant in epidemiology**, Ralph R. Frerichs, 2002

Textual Criticism

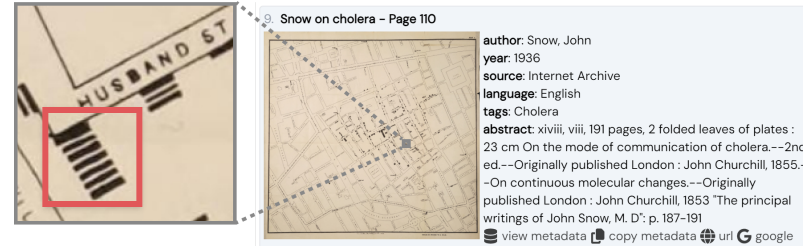
The lineage of the data sources



A The 1855 edition of Snow's map



B The 1936 edition of Snow's map



- 1855 edition^[1]: **8** in the highlighted area (**579** in total)
- 1936 edition^[2]: **7** in the highlighted area (**578** in total)

[1] **On the Mode of Communication of Cholera**, John Snow, page 44-45, 1855

[2] **Snow on Cholera: Being a Reprint of Two Papers by John Snow, M.D.**, John Snow, page 44-45, 1936

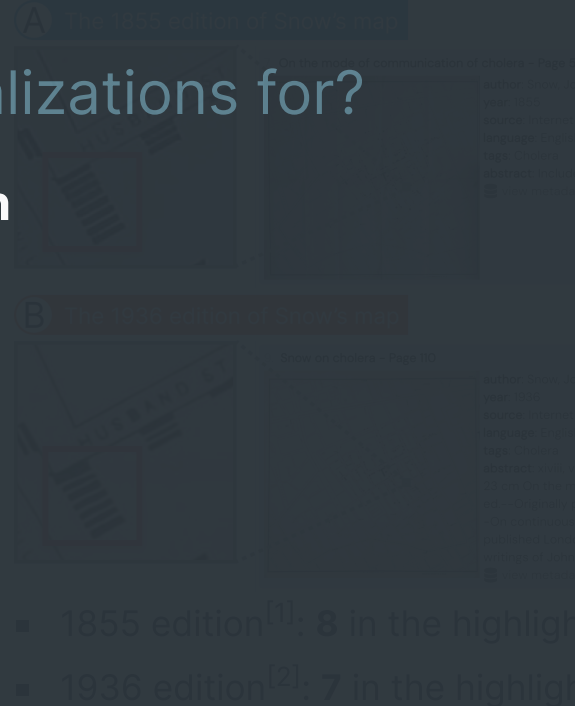
[3] **Snow's Cholera Map**, Rusty Dodson and Waldo Tobler, 1994

[4] **John Snow - a historical giant in epidemiology**, Ralph R. Frerichs, 2002

Textual Criticism

What can we use historical visualizations for?

- **Inspiration for contemporary design**
- **Textual criticism**
- Historical data extraction
- Design space analysis
- Metadata analysis
- Metadata research



[1] *On the Mode of Communication of Cholera*, John Snow, page 44-45, 1855

[2] *Snow on Cholera: Being a Reprint of Two Papers by John Snow, M.D.*, John Snow, page 44-45, 1936

[3] *Snow's Cholera Map*, Rusty Dodson and Waldo Tobler, 1994

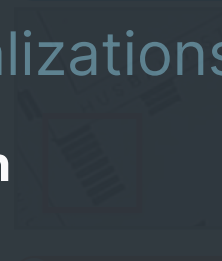
[4] *John Snow - a historical giant in epidemiology*, Ralph R. Frerichs, 2002

Textual Criticism

What can we use historical visualizations for?

- **Inspiration for contemporary design**
- **Textual criticism**
- Historical data extraction
- Design space analysis
- Metadata analysis
- Metadata research

A. On the Mode of Communication of Cholera



B. Snow on Cholera: Being a Reprint of Two Papers by John Snow, M.D.



- 1855 edition^[1]: 8 in the highlighted area (579 in total)
- 1936 edition^[2]: 7 in the highlighted area (578 in total)

[1] On the Mode of Communication of Cholera, John Snow, page 44-45, 1855

[2] Snow on Cholera: Being a Reprint of Two Papers by John Snow, M.D., John Snow, page 44-45, 1936

[3] Snow's Cholera Map, Rusty Dodson and Waldo Tobler, 1994

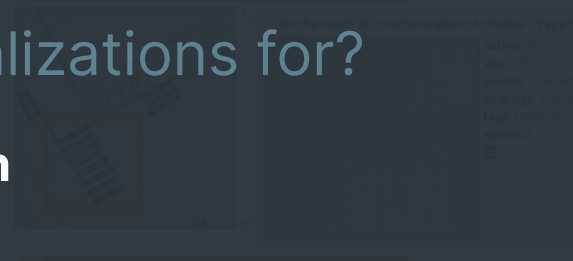
[4] John Snow - a historical giant in epidemiology, Ralph R. Frerichs, 2002

Textual Criticism

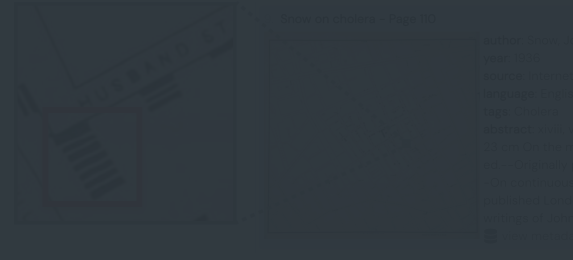
What can we use historical visualizations for?

- **Inspiration for contemporary design**
- **Textual criticism**
- Historical data extraction
- Design space analysis
- Metadata analysis
- Metadata research

A. On the Mode of Communication of Cholera



B. On the Mode of Communication of Cholera



- 1855 edition^[1]: 8 in the highlighted area (579 in total)
- 1936 edition^[2]: 7 in the highlighted area (578 in total)

[1] On the Mode of Communication of Cholera, John Snow, page 44-45, 1855

[2] Snow on Cholera: Being a Reprint of Two Papers by John Snow, M.D., John Snow, page 44-45, 1936

[3] Snow's Cholera Map, Rusty Dodson and Waldo Tobler, 1994

[4] John Snow - a historical giant in epidemiology, Ralph R. Frerichs, 2002

Summary

- A dataset of 13K historical visualizations
 - Seven digital collections as data sources
 - Packages for data collection and processing
 - Semi-automatic labeling
- Usage scenarios
 - Inspiration for contemporary design
 - Textual criticism
 - And more in our paper

Summary

- A dataset of 13K historical visualizations
 - Seven digital collections as data sources
 - Packages for data collection and processing
 - Semi-automatic labeling
- Usage scenarios
 - Inspiration for contemporary design
 - Textual criticism
 - And more in our paper



Dataset & Code:  github.com/oldvis

Paper:  arxiv.org/abs/2308.16053

