Paper-Search System to Identify Citation Networks and Motivations

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Research Movitation

DEMO URL
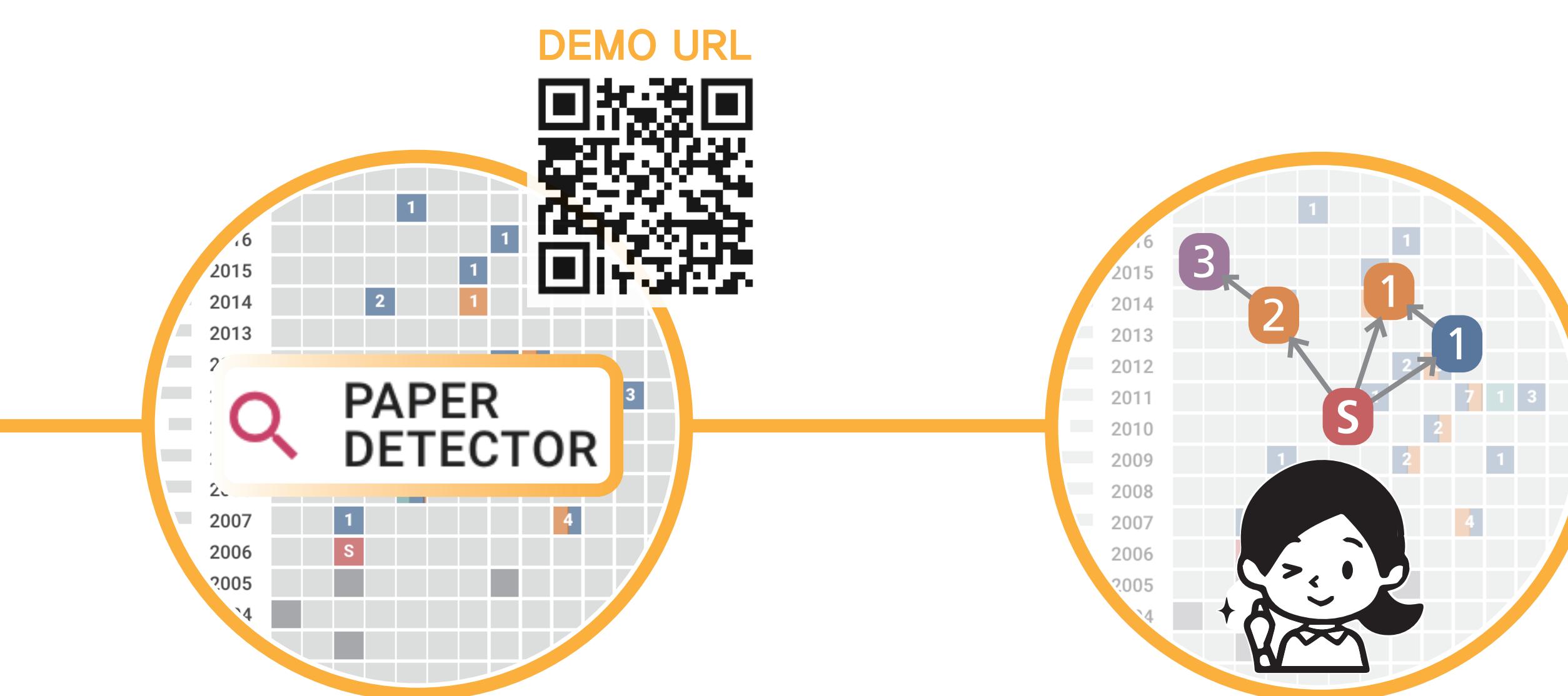
We often analyze research material using a literature information system to find and cite related studies.
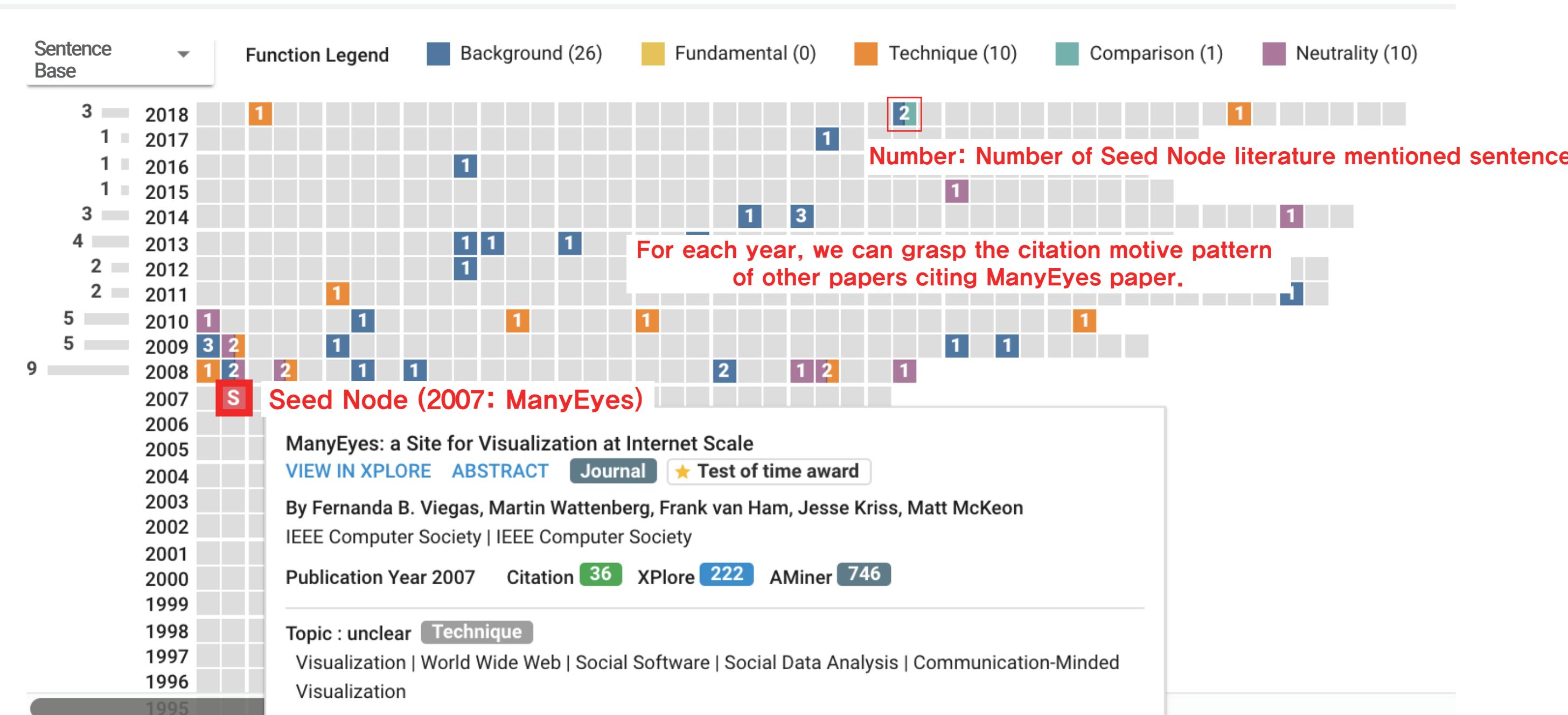
However, with amount of academic literatures consistently increasing, researchers spend quite a time searching for it.
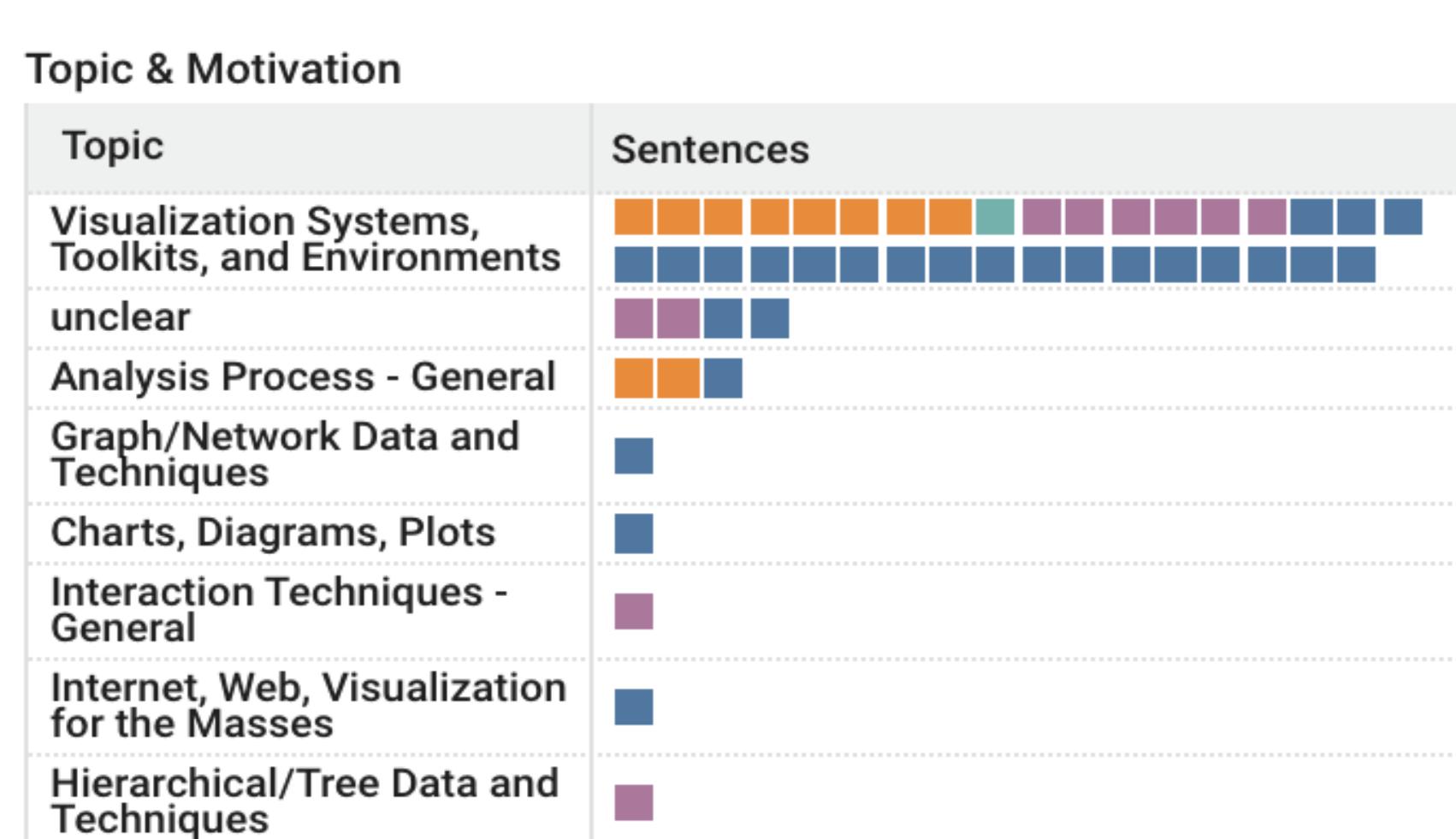
This study proposes a system that can determine citation motives and topics from a cited sentence extracted from an IEEE InfoVis paper.

The users can observe how the target paper has been developed and reproduced by other papers. (URL: https://paperdetector.hyunwoo.io/)
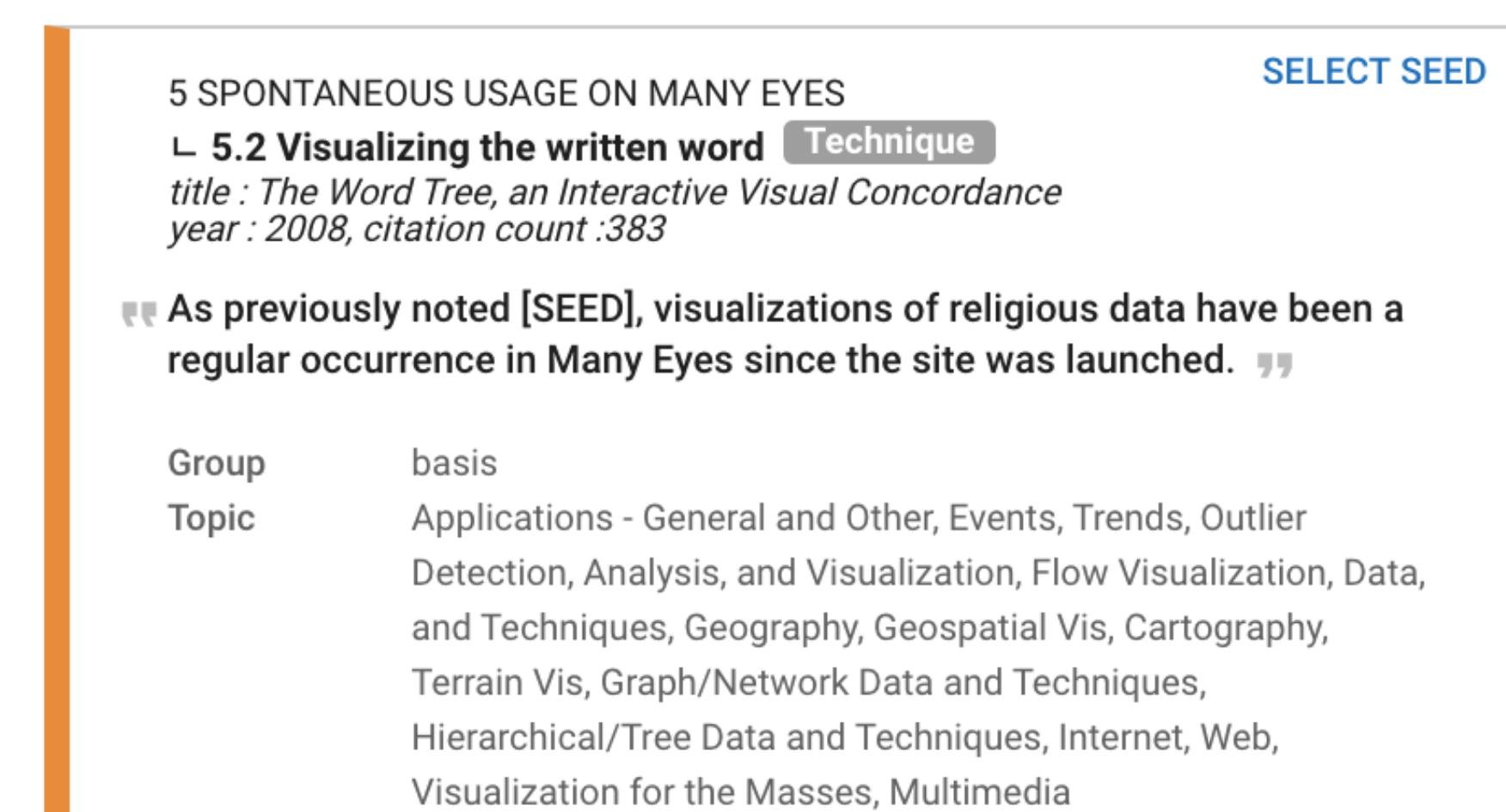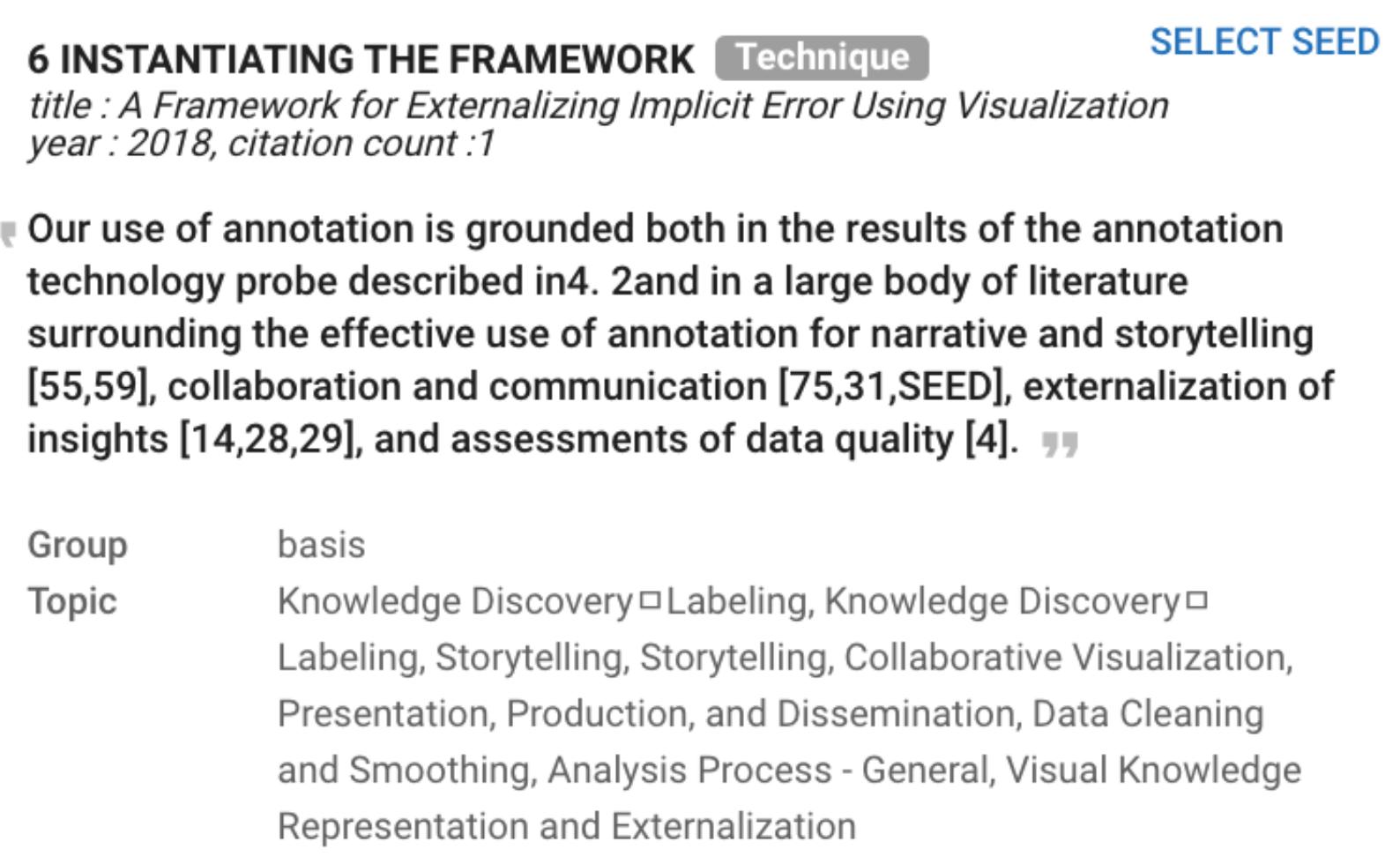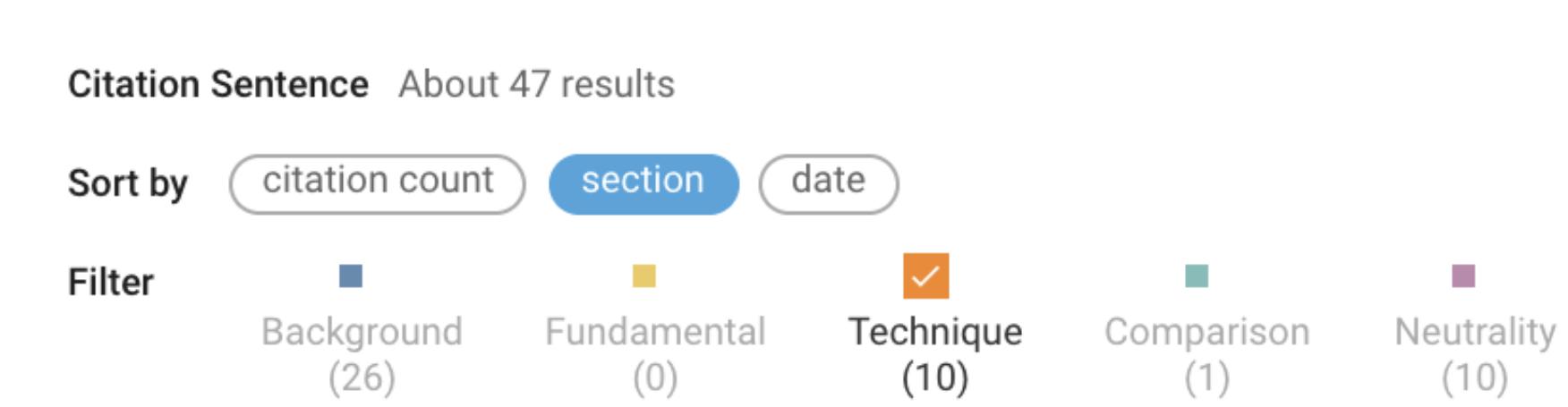
System Overview & Interaction

Number: Number of Seed Node literature mentioned sentences.

For each year, we can grasp the citation motive pattern of other papers citing ManyEyes paper.

Seed Node (2007: ManyEyes)

ManyEyes: a Site for Visualization at Internet Scale
VIEW IN XPLORE   ABSTRACT   Journal   ★ Test of time award
By Fernanda B. Viegas, Martin Wattenberg, Frank van Ham, Jesse Kriss, Matt McKeon
IEEE Computer Society | IEEE Computer Society
Publication Year 2007   Citation 36   XPlore 222   AMiner 746
Topic : unclear   Technique
Visualization | World Wide Web | Social Software | Social Data Analysis | Communication-Minded Visualization

STEP 1. Let us suppose that a particular user was inspired by the Many Eyes study announced in InfoVis 2007. And uses our system to find the study cited with a 'Technique' motive. Here, the user sets the Many Eyes paper as the target paper by selecting the node.

Topic & Motivation

STEP 2. Many Eyes is cited with the motivation classification in the order of 'Background' (navy), 'Technique' (orange), and 'Neutral' (purple) in sentences where 'Visualization Systems, Toolkits, and Environments' is the citation topic.

Citation Sentence About 47 results

Sort by   citation count   section   date

Filter   Background (26)   Fundamental (0)   Technique (10)   Comparison (1)   Neutrality (10)

6 INSTANTIATING THE FRAMEWORK   Technique   SELECT SEED
title : A Framework for Externalizing Implicit Error Using Visualization
year : 2018, citation count :1

Our use of annotation is grounded both in the results of the annotation technology probe described in4. 2and in a large body of literature surrounding the effective use of annotation for narrative and storytelling [55,59], collaboration and communication [75,31,SEED], externalization of insights [14,28,29], and assessments of data quality [4].

Group   basis
Topic   Knowledge Discovery⬚Labeling, Knowledge Discovery⬚ Labeling, Storytelling, Storytelling, Collaborative Visualization, Presentation, Production, and Dissemination, Data Cleaning and Smoothing, Analysis Process - General, Visual Knowledge Representation and Externalization

5 SPONTANEOUS USAGE ON MANY EYES   SELECT SEED
└ **5.2 Visualizing the written word**   Technique
title : The Word Tree, an Interactive Visual Concordance
year : 2008, citation count :383

As previously noted [SEED], visualizations of religious data have been a regular occurrence in Many Eyes since the site was launched.

Group   basis
Topic   Applications - General and Other, Events, Trends, Outlier Detection, Analysis, and Visualization, Flow Visualization, Data, and Techniques, Geography, Geospatial Vis, Cartography, Terrain Vis, Graph/Network Data and Techniques, Hierarchical/Tree Data and Techniques, Internet, Web, Visualization for the Masses, Multimedia

STEP 3. The user selects the 'Technique' motivation through the Filter function in the view in order to find only the research based on technical motivation. This allows user to see the actual sentence which has been used for citation and makes it easier to identify sentences related to technical motivation in other papers.

Citation-Motive Classification & Visualization Analysis

Background
Citation that describes the background of a complete topic or provides a recent study or cutting-edge approach for a general method.

Fundamental
Citations of major previous articles that inspire or give concrete hints for current works.

Technique
Citations of important tools, methods, data and other resources used or recomposed in the current study.
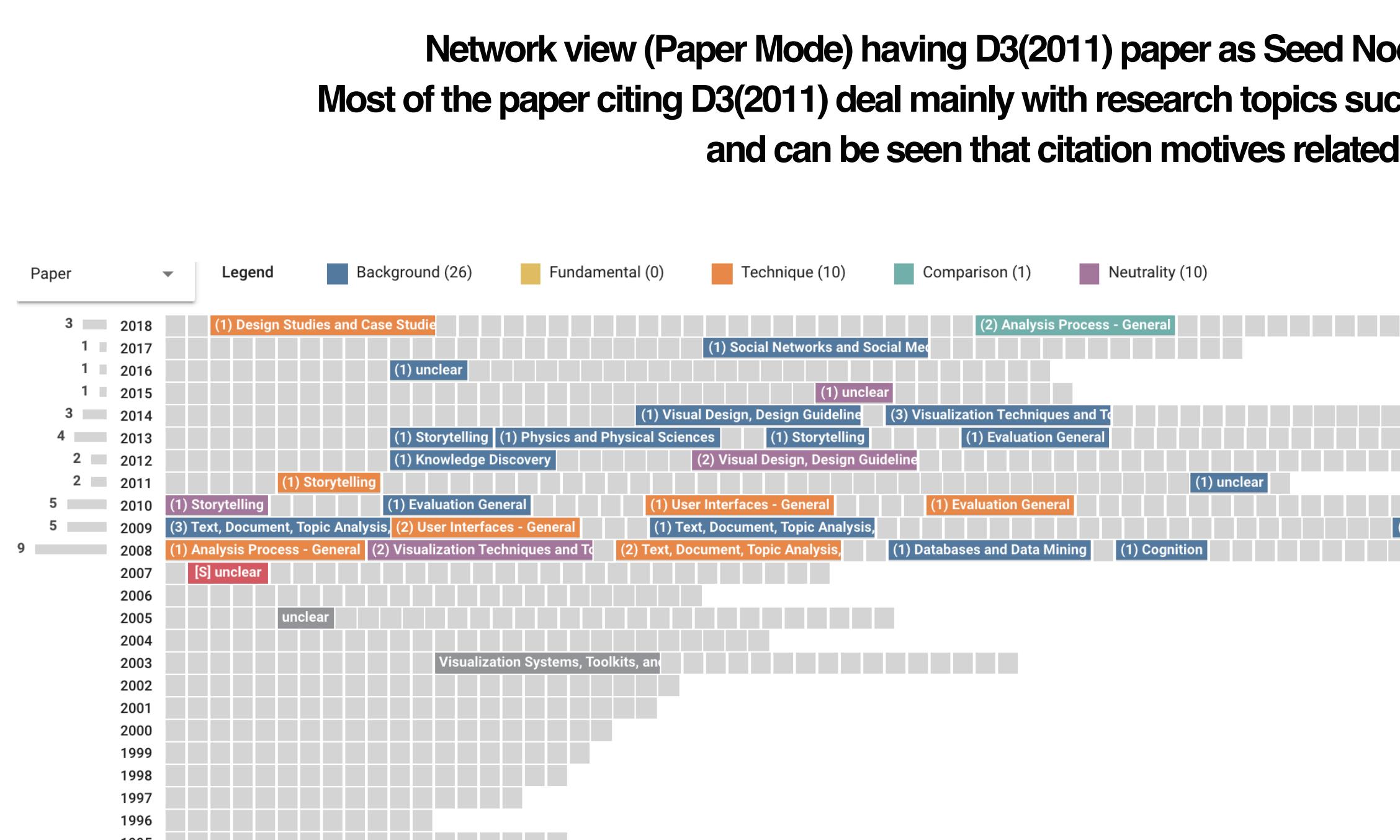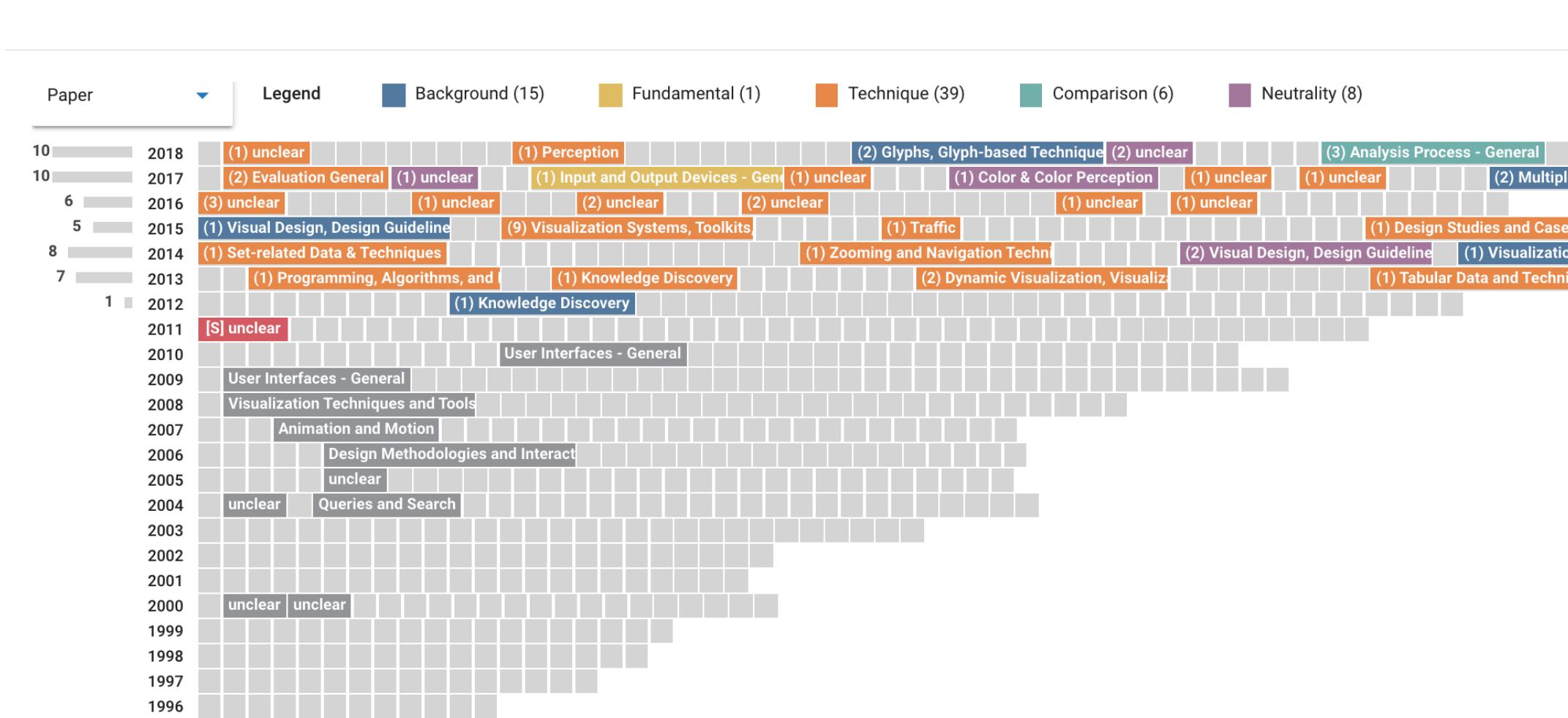
Comparison
Citations comparing methods or results with current research.
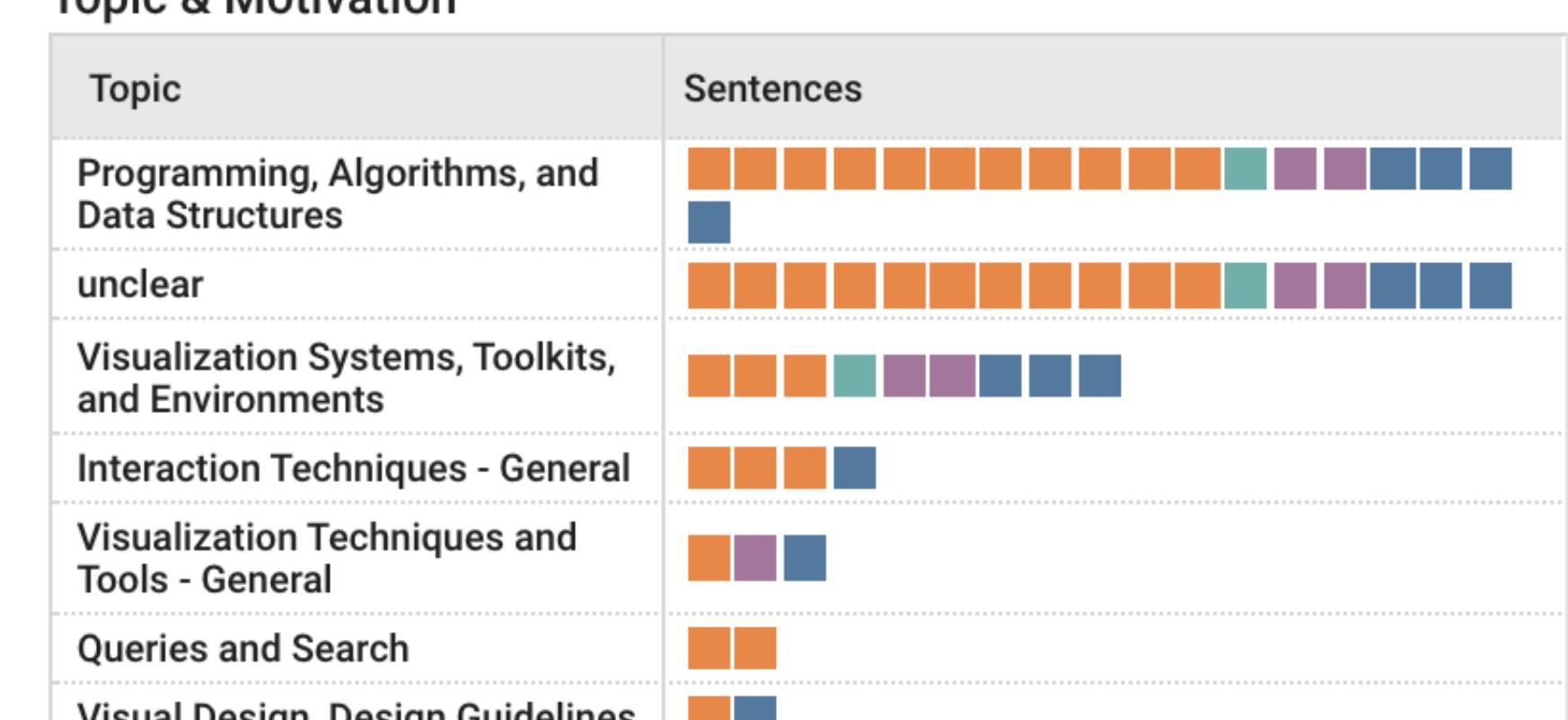
Neutrality
A paper that exists in the bibliography but does not appear in a substantial sentence. In other words, the related text information cannot be checked in the text.

Network view (Paper Mode) having D3(2011) paper as Seed Node / Topic & Motivation View (Sentence Mode):
Most of the paper citing D3(2011) deal mainly with research topics such as 'Programming, Algorithms and Data Structures', and can be seen that citation motives related with 'Technique' stands out.

Network view (Paper Mode) having ManyEyes(2007) paper as Seed Node / Topic & Motivation View (Sentence Mode):
Most of the paper citing ManyEyes(2007) deal mainly with research topics such as 'Visualization Systems, Toolkits and Environments', and can be seen that citation motives related with 'Background' stands out.