Visualization According To Research Paper Keywords

Petra Isenberg, Tobias Isenberg, Michael SedImair, Jian Chen, Torsten Möller



What is Visualization?

What types of research are happening based on single research contributions?

We analyzed 1039 IEEE VisWeek/VIS papers from 2004–2013. These papers contained 2629 author-assigned keywords that we coded into 156 topics. From this data we contribute a co-word analysis graph of topics that are frequently mentioned together on papers and keyvis.org, a web-based search tool that makes the keyword metadata available to everyone.



This graph shows which keyword topics appeared frequently together on papers. The graph was created by calculating a topic-topic correlation matrix.

Circle areas correspond to number of occurrences of the keyword in the dataset, link width corresponds to correlation strength, and color distinguishes clusters of topics that often occurred together as a group.

The graph shows only topics with correlation strength \geq 0.11. We chose a link threshold based on visual inspection of the resulting graph to generate a manageable and readable layout. Isolated nodes were removed from the image.



<u>File Edit View History Bookmarks Tools H</u> elp		<u>File E</u> dit <u>V</u> iew History <u>B</u> ookmarks <u>T</u> ools <u>H</u> elp			<u>File Edit View History Bookmarks Tools H</u> elp			
KeyVis × +		KeyVis × +			Bang Bang - will.i.am - Go × KeyVis	× +		
keyvis.org/index.php?course=collaboration	🚺 🗸 🔄 📲 Google 🔎 🖊 🏫 🏠 🛍 🖲 🕶 🔶	keyvis.org/index.php?course=collab	🚺 🔻 🤁 😽 🔽 🐨 Google	오 🕹 🏠 🏚 🕲 🚥 🌩	Keyvis.org/expert.php	1	▼ C 😽 🔻 🗴 Google	오 🖡 🏠 🏚 🖲 🖝



Getting started Search Expert Clusters Visualization About

Search for VIS paper keywords

Submit

New keyword search:

collaboration

found in **9** papers co-occured with **43** author keywords

expert-clustered with **17** author keywords



collaboration found in 9 VIS Papers

Conf.	Year 🔺	Title		
InfoVis	2013	Hybrid-Image Visualization for Large Viewing Environments		
VAST	2013	Supporting Awareness through Collaborative Brushing and Linking of Tabular Data		
VAST	2010	A closer look at note taking in the co-located collaborative visual analytics process		
InfoVis	2009	Harnessing the Information Ecosystem with Wiki-based Visualization Dashboards		
InfoVis	2009	Lark: Coordinating Co-located Collaboration with Information Visualization		
VAST	2008	Entity-based collaboration tools for intelligence analysis		
InfoVis	2007	Interactive Tree Comparison for Co-located Collaborative Information Visualization		
VAST	2007	Design Considerations for Collaborative Visual Analytics		
VAST	2007	Us vs. Them: Understanding Social Dynamics in Wikipedia with Revert Graph Visualizations		
collabora	ation co-oc	ccurs with 43 other keywords:		

sualization 5x co-located work 2x information visualization 2x visual analytics 2x wiki 2x analysis 1x

search for an author keyword

O		
V		
KE	YV	15

Getting started Search Expert Clusters Visualization About

Search for VIS paper keywords

New keyword search: Submit |

collab

is included in:

collaboration collaborative visualization collaborative and distributed visualization collaborative learning

asynchronous collaboration synchronous situated collaboration indirect collaboration

All papers that include at least one of these keywords:

Year 🔺 Title Conf Hybrid-Image Visualization for Large Viewing Environments InfoVis 2013 VAST 2013 Supporting Awareness through Collaborative Brushing and Linking of Tabular Data InfoVis The DeepTree Exhibit: Visualizing the Tree of Life to Facilitate Informal Learning 2012 Supporting effective common ground construction in Asynchronous Collaborative Visual Analytics VAST 2011 TanGeoMS: Tangible Geospatial Modeling System SciVis 2010 VAST A closer look at note taking in the co-located collaborative visual analytics process 2010 VAST 2010 VizCept: Supporting synchronous collaboration for constructing visualizations in intelligence analysis Lark: Coordinating Co-located Collaboration with Information Visualization InfoVis 2009 InfoVis Harnessing the Information Ecosystem with Wiki-based Visualization Dashboards 2009 InfoVis 2009 The Benefits of Synchronous Collaborative Information Visualization: Evidence from an Experimental Evaluation Entity-based collaboration tools for intelligence analysis VAST 2008 InfoVis Interactive Tree Comparison for Co-located Collaborative Information Visualization 2007 VAST Design Considerations for Collaborative Visual Analytics 2007 VAST Us vs. Them: Understanding Social Dynamics in Wikipedia with Revert Graph Visualizations 2007 SciVis 2006 A Trajectory-Preserving Synchronization Method for Collaborative Visualization VAST 2006 Collaborative Visual Analytics: Inferring from the Spatial Organization and Collaborative Use of Information

search for parts of all author keywords

clustering		
clutter		
cognition		
collaboratio	n	
Expert clu collaborati	uster conta on 9x colla	borative visualization 3x coordination 3x co-located work 2x
collaborati	ve and distril	buted visualization 2x communication-minded visualization 2x asynchronous collaboration 1x
collaborati	ve learning 1	x collective intelligence 1x computer-supported cooperative work 1x consensus 1x group work 1x
indirect col	laboration 1	x many eyes 1x multi-user interaction 1x participatory visualization 1x
synchronou	us situated co	ollaboration 1x
All papers	s that inclu	Ide at least one of these keywords:
Conf.	Year 🔺	Title
InfoVis	2013	Hybrid-Image Visualization for Large Viewing Environments
VAST	2013	Supporting Awareness through Collaborative Brushing and Linking of Tabular Data

Inf

VA:

Inf

Sci

Sci

VA:

VA

Inf

VA:

Inf

Inf

oVis	2013	Hybrid-Image Visualization for Large Viewing Environments
ST	2013	Supporting Awareness through Collaborative Brushing and Linking of Tabular Data
oVis	2012	The DeepTree Exhibit: Visualizing the Tree of Life to Facilitate Informal Learning
ST	2011	Supporting effective common ground construction in Asynchronous Collaborative Visual Analytics
oVis	2010	ManiWordle: Providing Flexible Control over Wordle
Vis	2010	A Scalable Distributed Paradigm for Multi-User Interaction with Tiled Rear Projection Display Walls
Vis	2010	TanGeoMS: Tangible Geospatial Modeling System
ST	2010	A closer look at note taking in the co-located collaborative visual analytics process
ST	2010	VizCept: Supporting synchronous collaboration for constructing visualizations in intelligence analysis
oVis	2009	Harnessing the Information Ecosystem with Wiki-based Visualization Dashboards
oVis	2009	The Benefits of Synchronous Collaborative Information Visualization: Evidence from an Experimental
		Evaluation
oVis	2009	Lark: Coordinating Co-located Collaboration with Information Visualization
oVis	2008	The Word Tree, an Interactive Visual Concordance
oVis	2008	Stacked Graphs – Geometry & Aesthetics
ST	2008	Entity-based collaboration tools for intelligence analysis
oVis	2007	Interactive Tree Comparison for Co-located Collaborative Information Visualization
oVis	2007	ManyEyes: a Site for Visualization at Internet Scale

overview of a keyword topic (called expert cluster here)