

# Jigsaw — A Visual Analytics System that Puts the Pieces Together

# PRODUCT

## What Jigsaw Does

Jigsaw helps investigative analysts explore, analyze and make sense of unstructured and structured document collections, from articles and reports to spreadsheets, XML documents and blogs. By identifying and highlighting connections between entities — such as people, organizations and places — within the large set of data, Jigsaw provides a visual index to help guide the analyst toward relevant reports.

The process takes four steps:

1. Import document
2. Identify entities
3. Analyze computational text
4. Explore visualizations

Jigsaw has an easy-to-use, human-centered approach that puts the analyst in charge of the analysis instead of relying on algorithmic, automated techniques. Through visual representations of the information within textual documents, Jigsaw helps analysts better search, review and understand the reports.

With its rich interactive user interface, Jigsaw offers computational text analysis that includes document summarization, sentiment, similarity and clustering. It also supports the discovery of hidden and embedded relationships across the documents.

## Why it is Useful

While reading reports, analysts inherently form mental models of the people, places and events discussed in the information. But as these reports grow, it is increasingly more challenging to cipher through the relevant information, follow the connections between data and interpret the information. This is where Jigsaw comes in.

This system helps analysts reach more timely and accurate understandings of the larger stories and important concepts embedded throughout textual reports. Jigsaw is valuable for a variety of uses and fields, including:

- Law enforcement and intelligence community
- Fraud (finance, accounting, banking)
- Academic research
- Journalism and reporting
- Consumer research

## History/Background

The Jigsaw project began at Georgia Institute of Technology's School of Interactive Computing in 2005. In the summer of 2008, Jigsaw was made available via private URL and provided upon request with easy-to-track downloads. It was put online in August 2012 as a Java application for anyone to download.

Since its inception, Jigsaw has been downloaded 5,000 times. Organizations recently downloading the system include CDC, NSF, Deloitte, Netherlands Defence Academy, Washington, D.C., Public Schools, Oracle and Chick-fil-A. A team of researchers from Georgia Tech used the Jigsaw system to win the 2007 VAST (Visual Analytics Science and Technology) Contest.

▶ “Without the use of Jigsaw, examining reports would have been tedious and time consuming, and connections between entities may not have been seen. The local police department was very impressed with Jigsaw and stated that the program will become very useful in tracking criminal activity. Jigsaw is also used to analyze incidents relating to the security of the Washington State Ferry System, providing a searchable database and quick analytical tool for tracking potential threats to the largest ferry transportation system in the U.S.”

— *Chad R. Melton, Criminal Intelligence Analyst,  
Washington Joint Analytical Center WAJAC/FBI-FIG*

▶ “I think Jigsaw’s strength is its visual and investigative support. Analyzing our reports would have been impossible without that support. When I showed the results and connections to my colleagues, it was easy for them to understand how a certain person is connected to others.”

— *Damien Williams, Criminal Intelligence Analyst,  
Rock Hill, South Carolina, Police Department*



## Contact Us

Want to find out how VACCINE’s research can help your organization or group? Email [vaccine@purdue.edu](mailto:vaccine@purdue.edu) or visit [www.visualanalytics-CCI.org](http://www.visualanalytics-CCI.org).

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