



FinanViz: Visualizing Emerging Topics in Financial News



Presenter

- Dr. Tommy Dang
Assistant Professor, Texas Tech University

PhD Students

- Ngan V. T. Nguyen
- Vinh Nguyen
- Vung Pham

Outline



1. Introduction
2. Background and related work
3. Visualization architecture
4. Case study
5. Conclusion and Future work

Introduction



Social media

- Financial news
- potential customers
- market demands



- ✓ generate new products
- ✓ evaluate **financial risks**



REUTERS

website



Social network

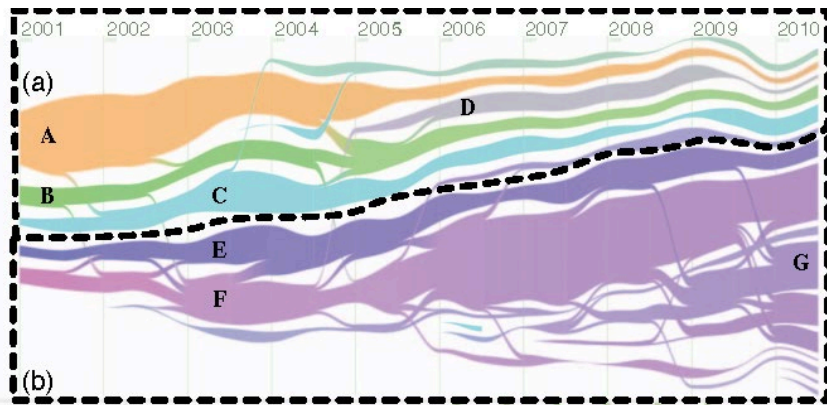
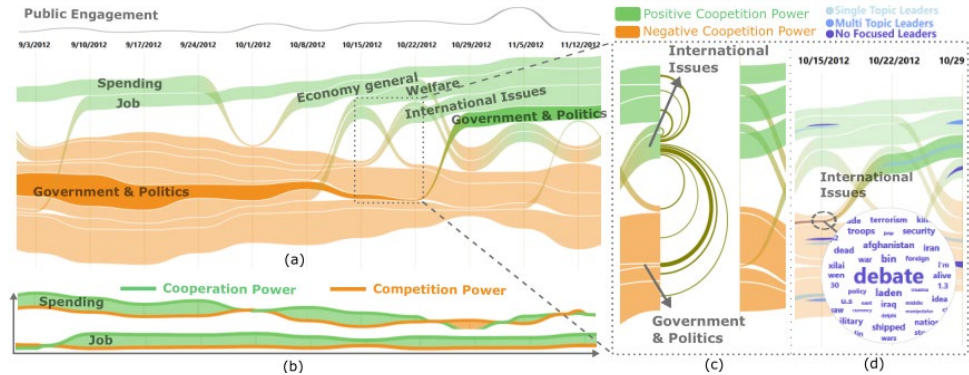
Related work



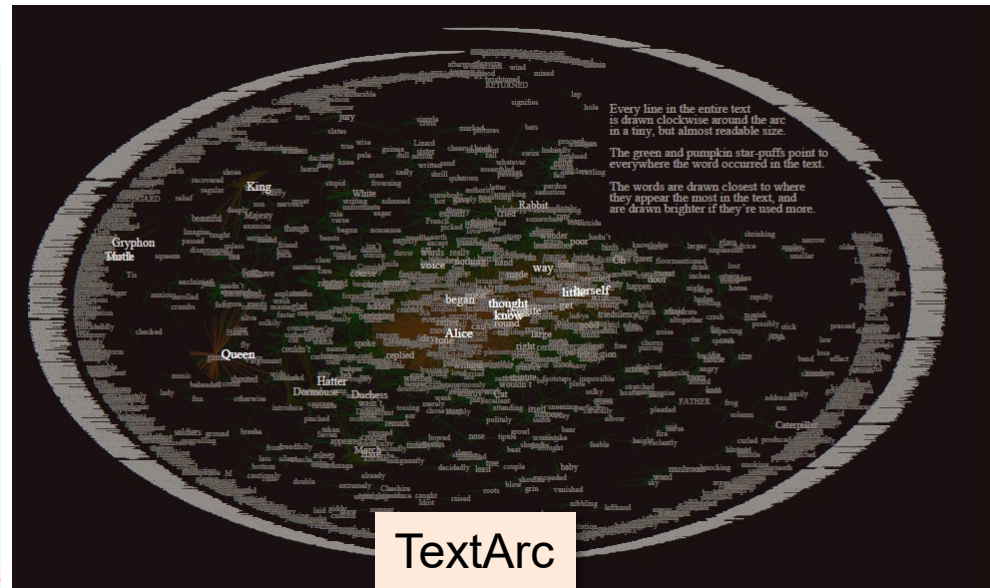
Text visualization

- + focus on topic evolution
- not their correlations

EvoRiver separate the negative and positive threads



TextFlow



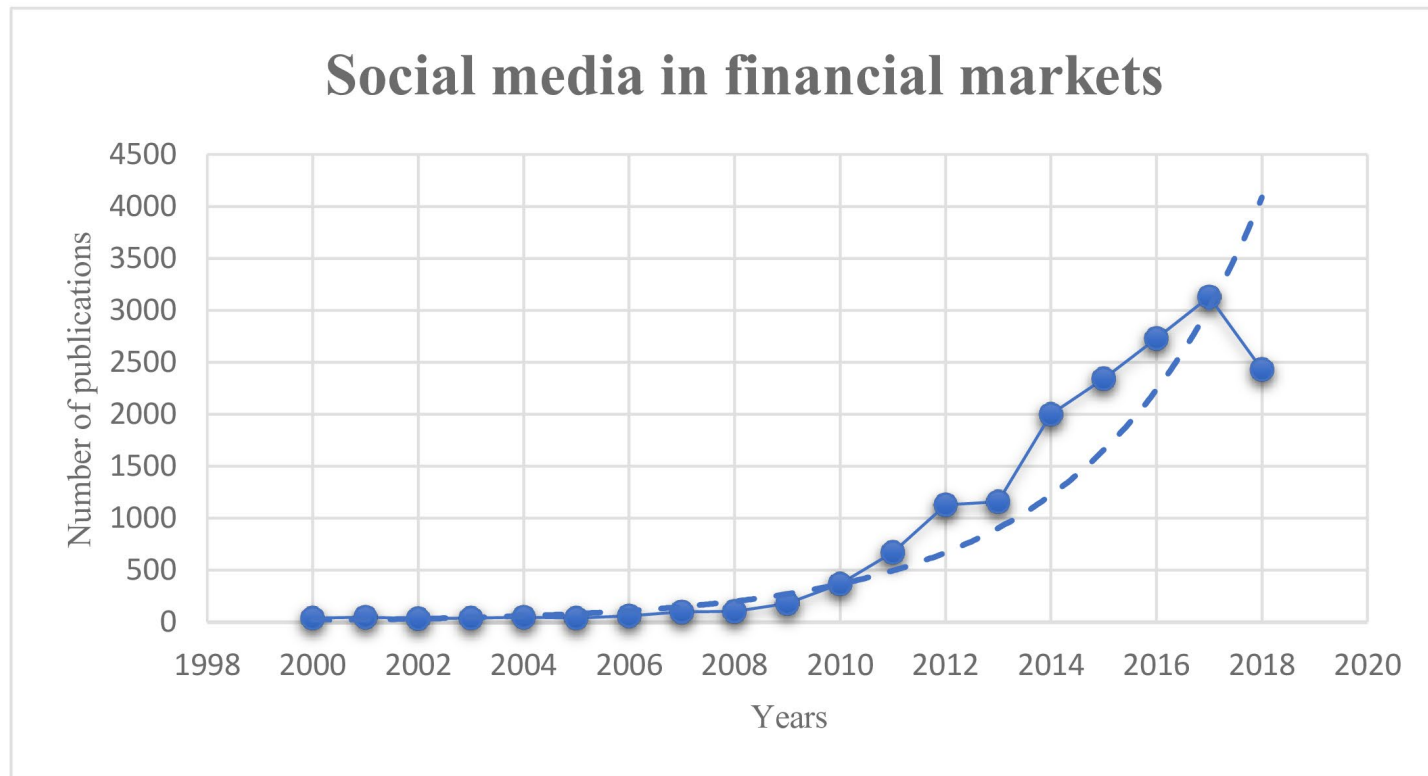
TextArc

Related work



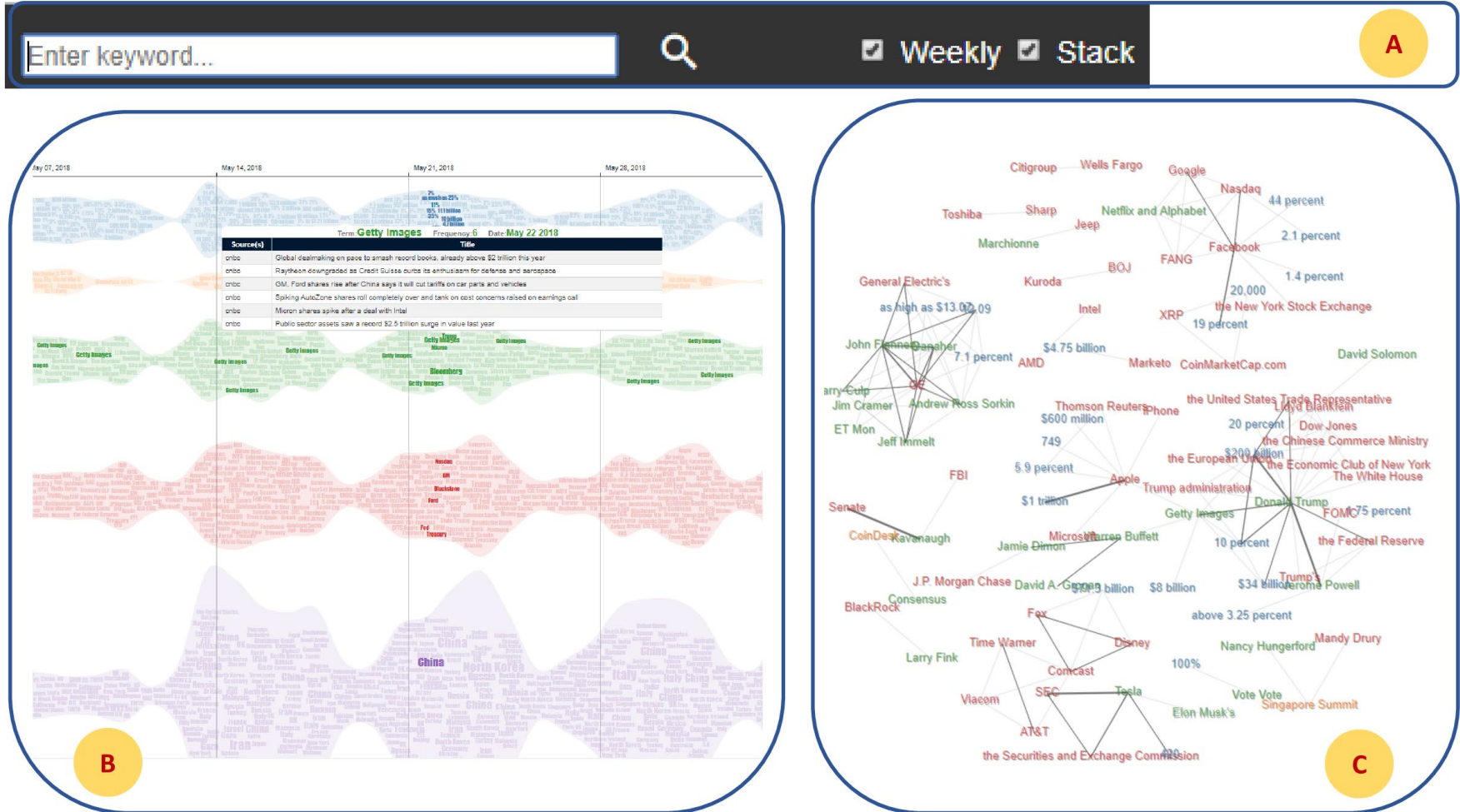
Financial analysis from social media

Goal: the interesting insights from social media data



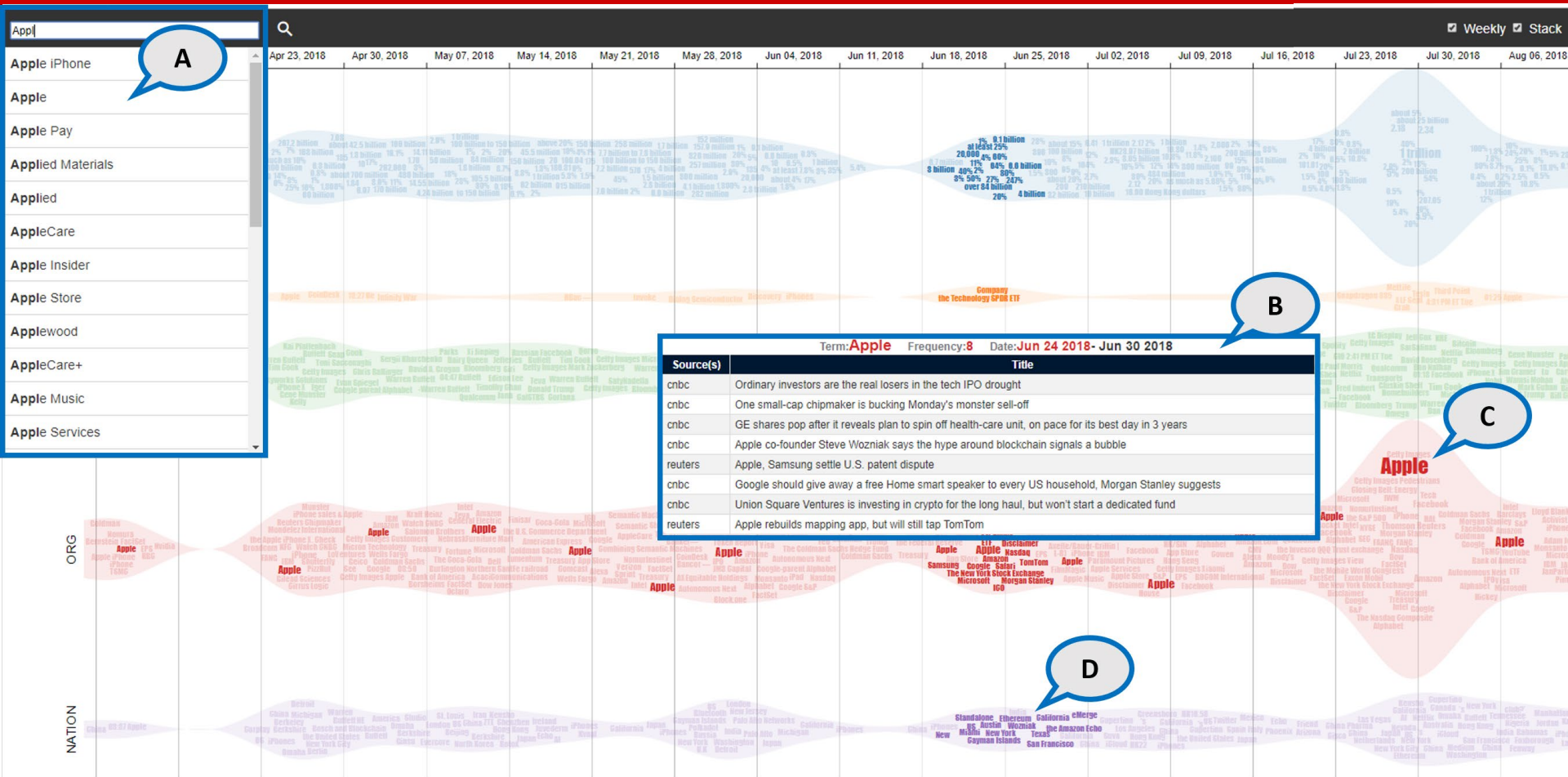
Number of publications on social media in financial markets from Google Scholar

Visualization architecture



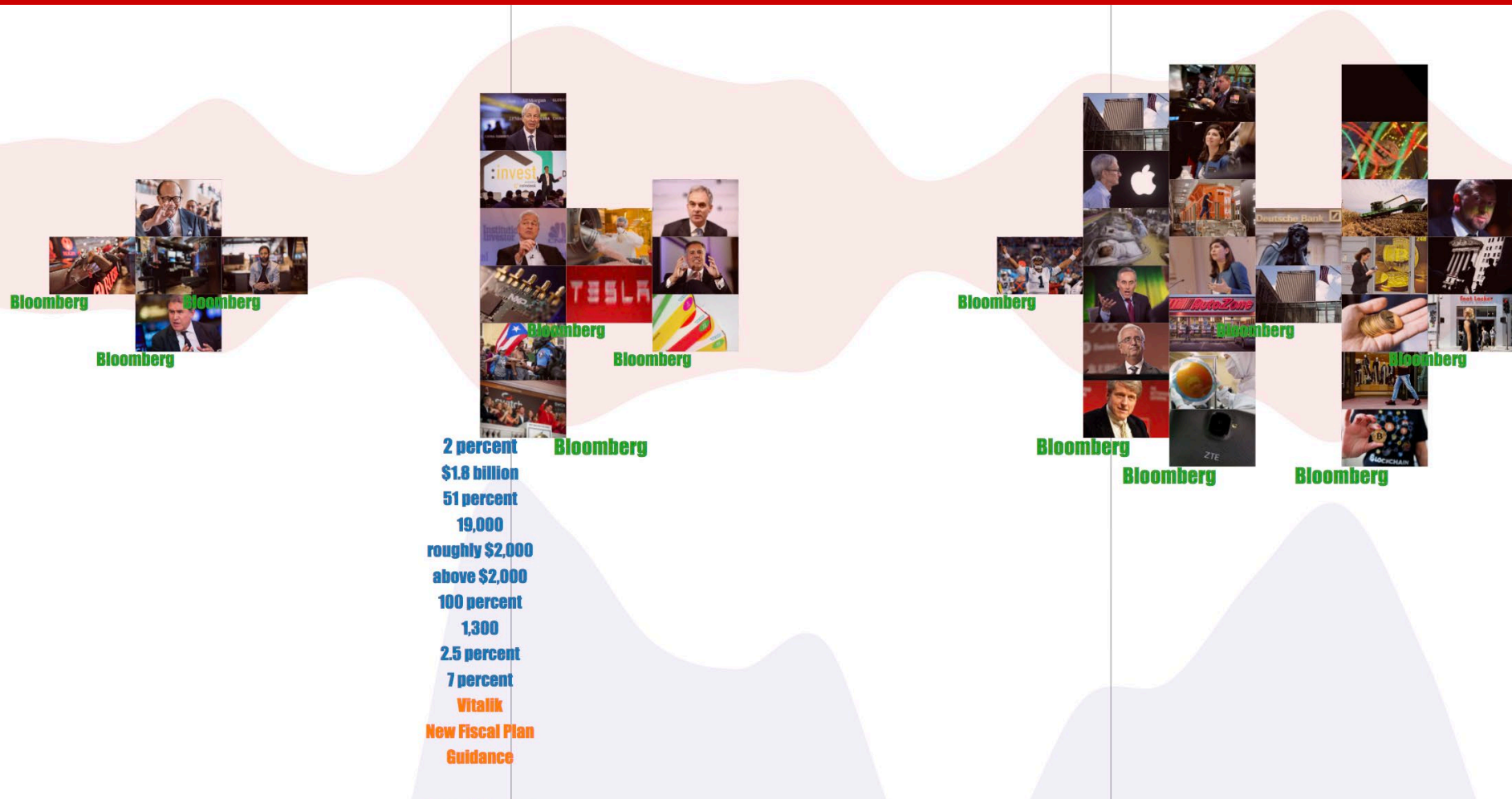
- A) Utility component
- B) Topics stream component
- C) Dynamic network component

User interactions



- Search box** with “auto complete” widget
- Detail of current term** with **mouse over**
- Appearance of the terms** over time
- Other terms** related to current search word at the same time

User interactions (cont.)



Mouse click allows users to:

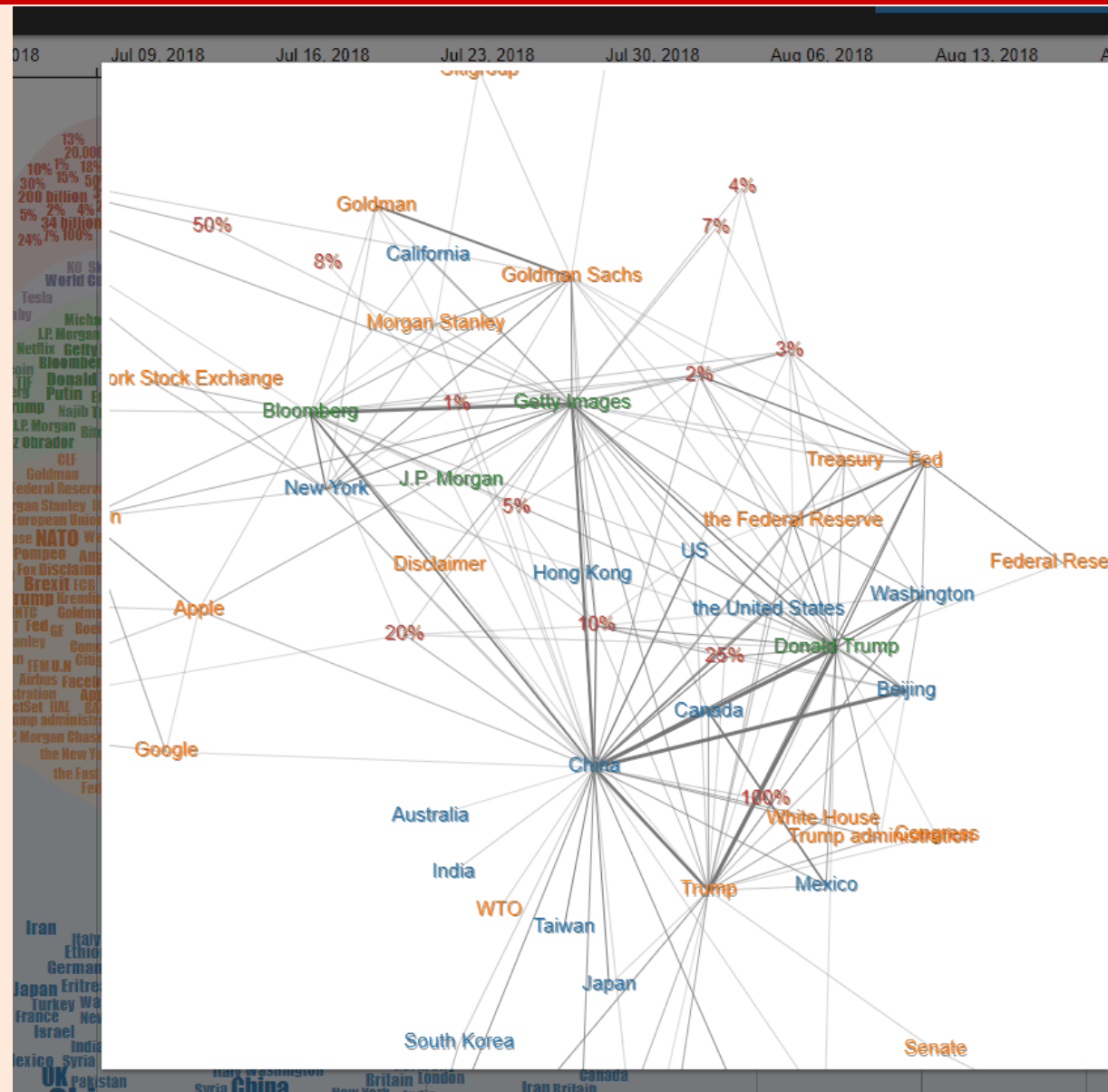
- glance over a thumbnail of article's image over a period.
- navigate to webpage of the article.

User interactions (cont.)

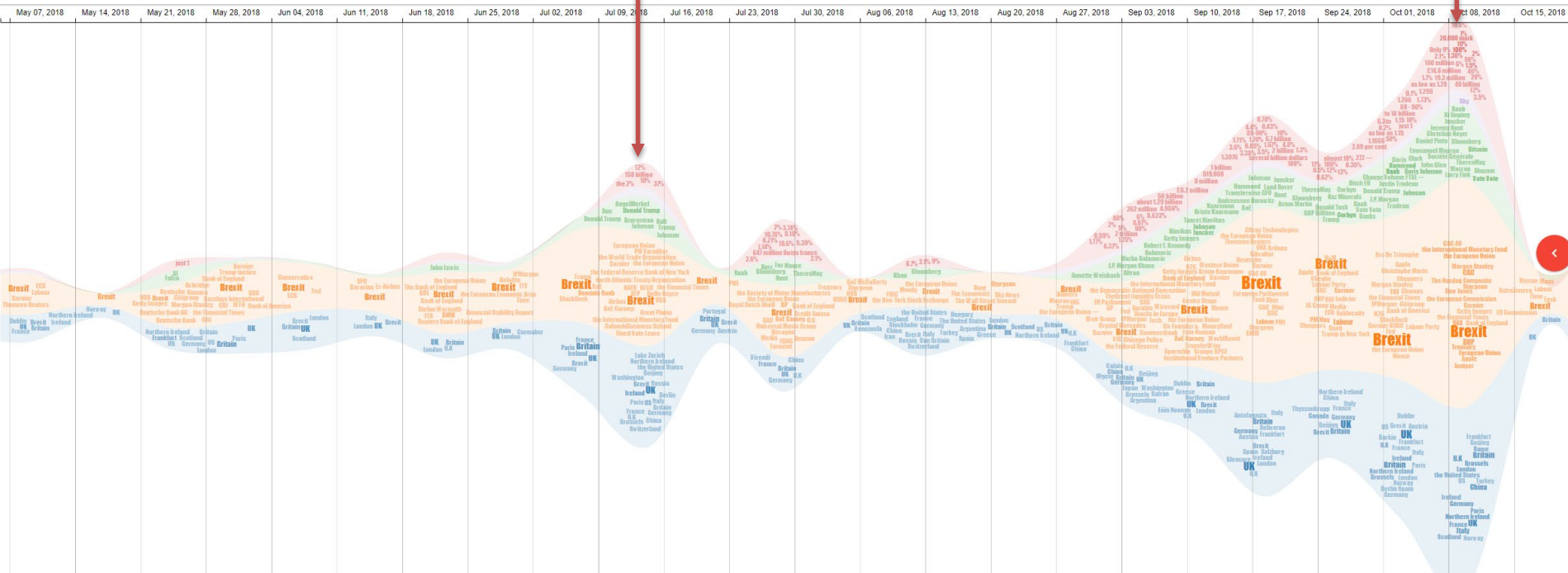


Mouse event:

- Drag and drop
- Zoom
- Right click to search term in application



“Brexit” and financial issues in the last quarter of 2018



Case study



Jun 19 2018

Financial issue related to China and \$200 billion

Term: 200 billion Frequency: 8 Date: Jun 19 2018

Source(s)	Title
cnn	Chip stocks dive on trade war fears as industry gets a majority of its revenue from China
cnn	In the short history of Trump trade conflicts, it has paid to buy the market dip
cnn	There's one Dow stock having a great day — Verizon
cnn	Goldman Sachs CEO says the US and China are not in a 'suicide pact' on trade
cnn	How the US ended up in an escalating trade dispute with China
cnn	Economy still strong despite trade war fears: Analysts
cnn	There is a 'much bigger issue' for the market than trade: Analyst
cnn	Big investors — including Buffett and Tudor Jones — aren't worried about a trade war with China

TRADE

Chip stocks dive on trade war fears as industry gets a majority of its revenue from China

- Among U.S. industries, semiconductor and semiconductor equipment companies have the highest revenue exposure to China at 52 percent, Morgan Stanley equity strategists say.
- Shares of major chipmakers tumble in early trading Tuesday after a renewed war of words on tariffs between U.S. and China.

Evelyn Cheng | @chengevelyn

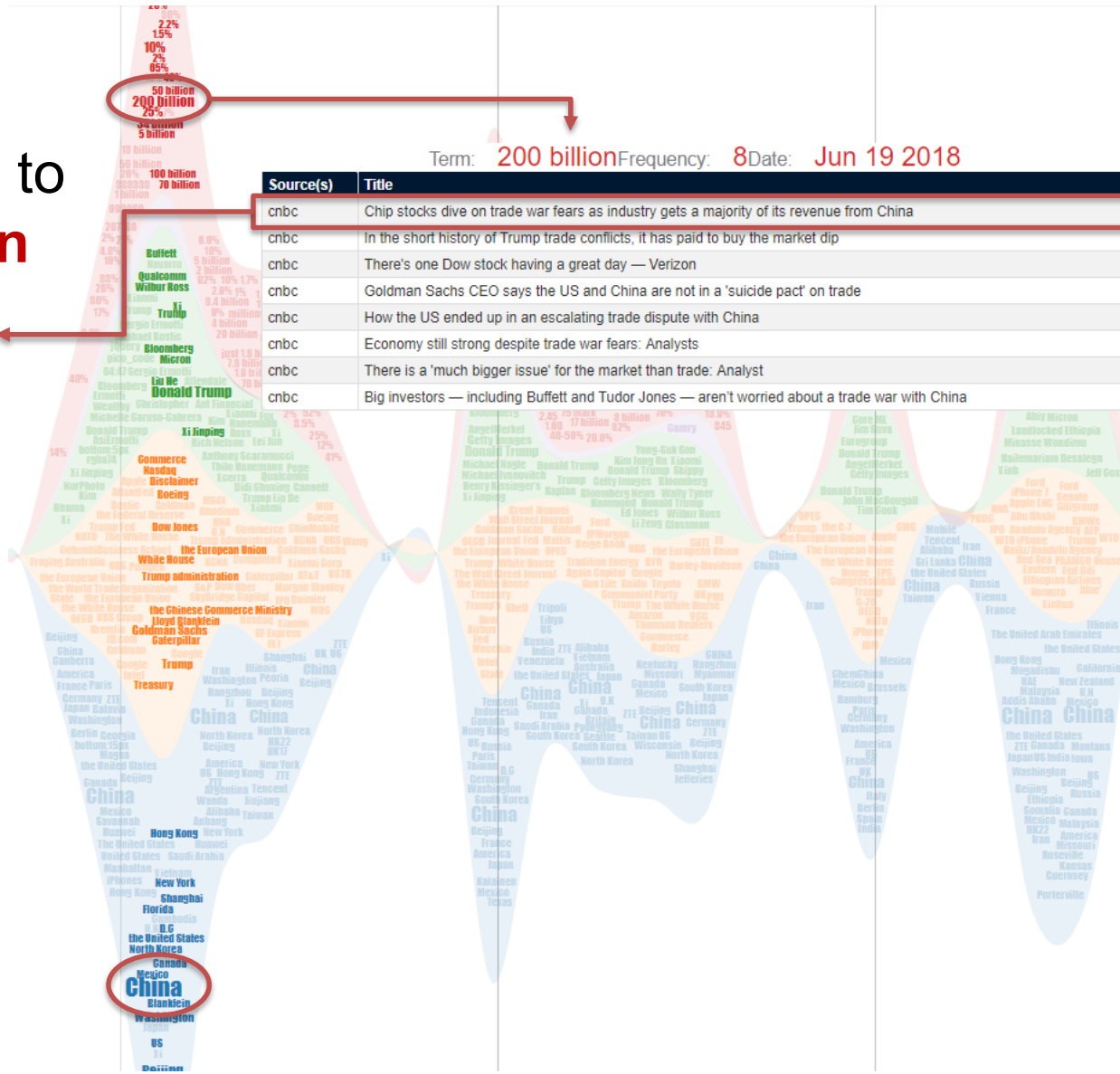
Published 8:37 AM ET Tue, 19 June 2018 | Updated 10:27 AM ET Tue, 19 June 2018



David Paul Morris | Bloomberg | Getty Images

Brian Krzanich, chief executive officer of Intel Corp., holds up a 49-qubit superconducting quantum test chip named 'Tangle Lake' while speaking during a keynote address at the 2018 Consumer Electronics Show (CES) in Las Vegas, Nevada, U.S., on Monday, Jan. 8, 2018.

By revenue, chipmakers face the greatest risks in escalating trade tensions with Beijing.



Conclusion and Future work



We:

- Introduced FinanViz - a graphical tool analysis emerging trends from financial news based on the **co-occurrence** of related **terms** within a **topic** or across multiple topics over time, and the relationship **sudden change** of trending terms spanning multiple years

Future work:

- collaborating with experts in financial department to improve the FinanViz
- extract, interpret terms in a more meaningful manner

Questions?



Email: Tommy.Dang@ttu.edu

