



Offshore Leaks: Graph Databases For Investigative Journalism

Panama Papers
Paradise Papers

Justin Fine
Las Vegas, NV
Feb 2019

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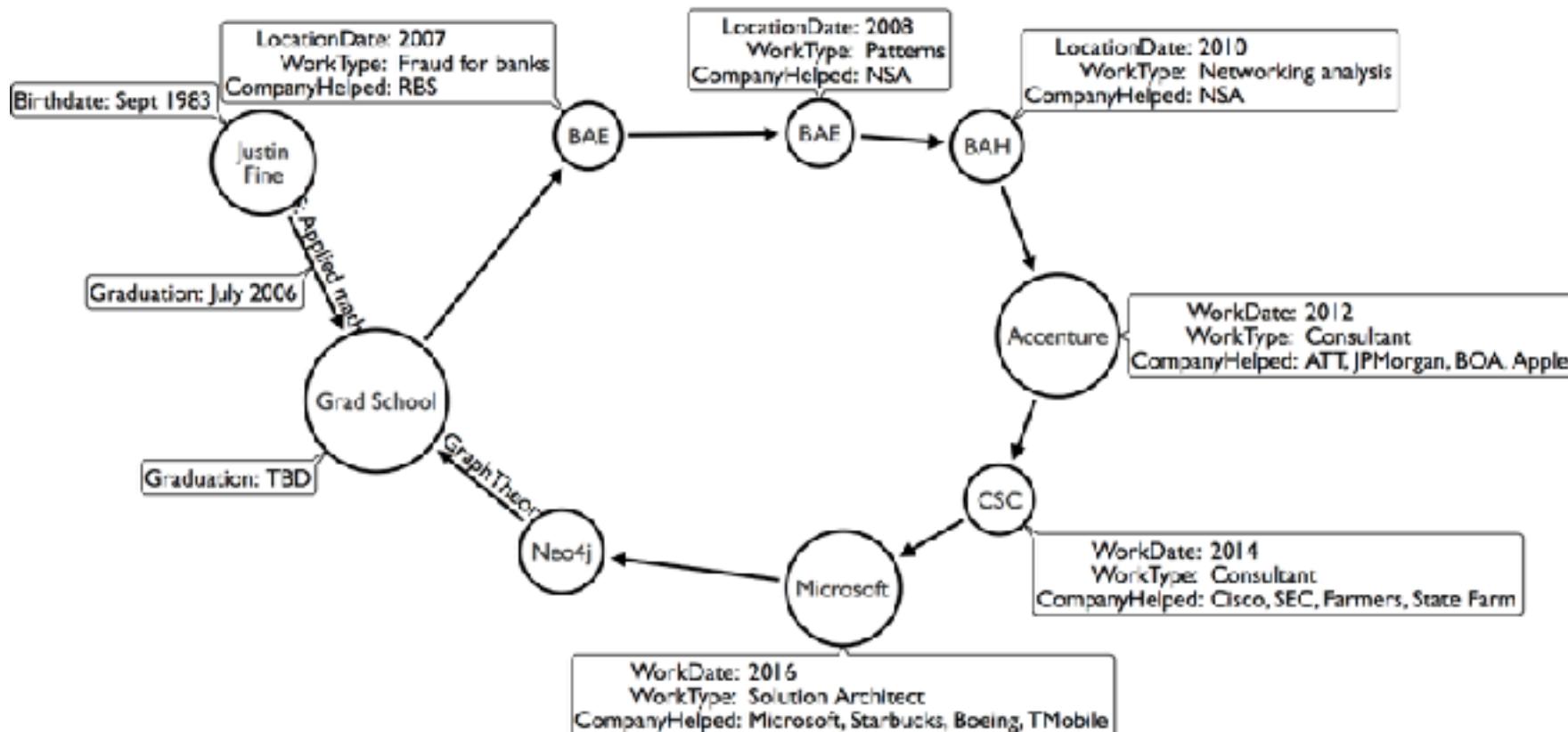
Field Engineer , Neo4j

Justin.Fine@neo4j.com

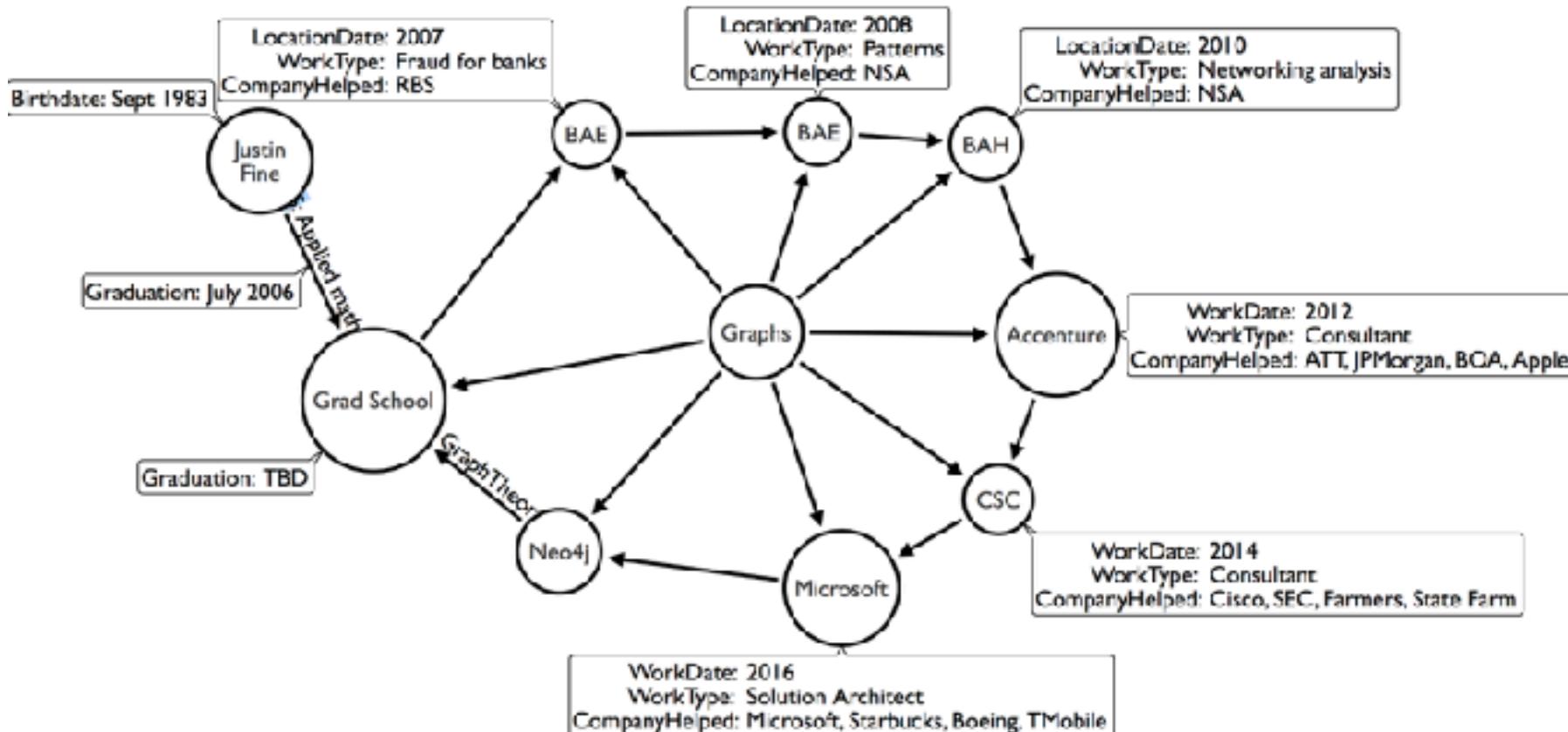
<https://www.linkedin.com/in/justin-fine-a7604523>



Justin's Graph



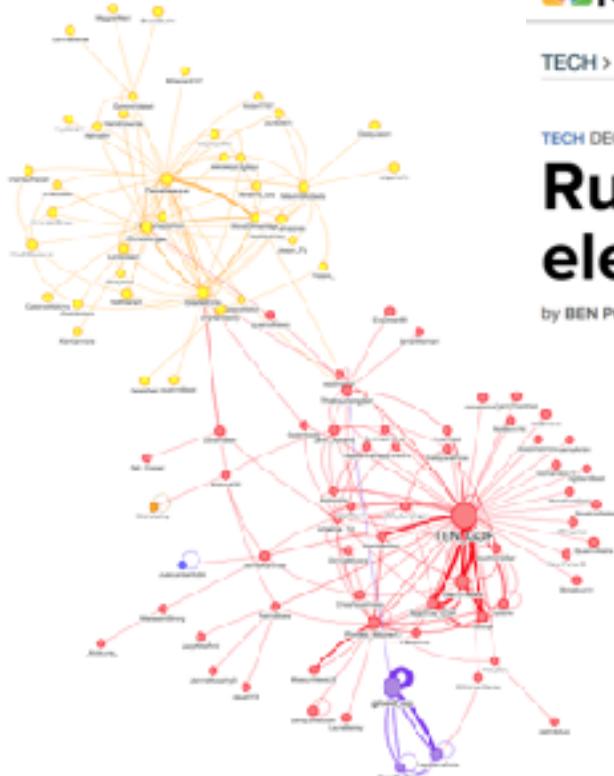
Justin's Graph



TECH DEC 20 2017, 11:11 AM ET

Russian trolls went on attack during key election moments

by BEN POPKEN



```
1 MATCH (tr:Troll)-[:POSTED]->(tw:Tweet) WITH tr, tw
2 OPTIONAL MATCH (tw)-[:RETWEETED]-(rt:Tweet)
3 OPTIONAL MATCH (tw)-[:IN_REPLY_TO]-(irp:Tweet)
4 RETURN distinct tr.screen_name as screen_name, count(tw) as totalTweets,
5 count(rt) as totalRetweets, count(irp) as totalReplies,
6 (count(tw) - (count(rt) + count(irp))) as originalContent
7 ORDER BY totalTweets DESC;
```

Russia Twitter Trolls



- 2752 Twitter accounts tied to Russia's Internet Research Agency
- Accounts suspended by Twitter
 - Data deleted
- What were they tweeting about?

https://democrats-intelligence.house.gov/uploadedfiles/exhibit_b.pdf

userId	handle
98564659056453790	18_LoriP
2628770290	1488masons
2526564756	1D_Nicole_
78783601	100LiberalsNDM
1804300774	1Erik_Lee
838742756515691041	1korenshaw1
2537864155	2KerriBishop
823484279787294720	2inHalfOnion
68712075	2silverbaker
68723575	30ToMenFandom
3644473336	400Usage
2261061128	4dinnerware
245870305280842158	4ever_1837
4836507432	48lySquad
713688742550845790	49RevereOgden
2534825934	60hr
3806730140	71ctajzmil1
2532198469	75Shawn
2616792237	_____Judith_D_
2656610923	_____Sophia_
2890468931	_____stefan
2644663206	_____Amy_Kocane_
2753002990	_____AnnsSwanson
28408916370	_____Felicity_Genev
2426927490	_____begley

Wayback API

user_id	handle
935674854055453199	10_grip
2328770999	1488users
253694700	1D_Nicole_
79753611	10iswarenTOM
1900308774	1Drik_Lee
830742791212031841	1kronolove1
2537194155	2stevebrown
82248427397294720	2ndHalfOreka
8072015	2stvbaseball
80723515	301JohnsFandom
3644473200	400Jtaggo
2961961128	400newname
248870205000047198	4new1802
4006507402	4tlyqued
7136857402500845799	600newyogies
2554875904	601ux
3006706140	710akamit
2932158949	720new
2615702207	__Adith__D_
2500916002	__0pmz__
2520448901	__dilane
2544803200	__Amy_Nicole_
2753302910	__AniaSvetlana
2543828510	__Becky_Genell
2420027400	__begley
2542626906	__Ben_Santos
2498860404	__Billy_Moyer_
2510302348	__Edward_Corcoran_
2544865369	__Gaelet_Page_
2602816810	__Gangajalmaata_
2486207434	__GregorVan
2820378817	__Howard_Good_



http://archive.org/wayback/available?url=http://twitter.com/TEN_GOP



```
{  
  url: "http://twitter.com/TEN_GOP",  
  - archived_snapshots :  
    - closest: {  
        status: "200",  
        available: true,  
        url: "https://web.archive.org/web/20170118055925/http://twitter.com/TEN_GOP",  
        timestamp: "20170118055920"  
      }  
}
```

<http://www.lyonwj.com/2017/11/12/scraping-russian-twitter-trolls-python-neo4j/>



Scraping Internet Archive...

A photograph of a beach scene in Sosin, showing people on the sand and buildings on a hillside.

```
    "suggestion_details":{},"text_tweet_id":  
    "892786102036804","scribe_colonator":"takel1"}]}>  
;before  
writer class="twtr js-stream-item js-actionable-tweet js-profile-  
page js-tweetable-dmable js-content  
original-tweet js-original-tweet  
  
     Tennessee has a content  
    < data-item-loc="892786102036804" data-item-id=  
    "892786102036804" data-open-link-prefs="TBS_HD_PREFERED"  
    data-item-type="takel1" data-item-obj="892786102036804"  
    data-tweet-source="692786102036804" data-tweet-id="892786102036804"  
    data-tweet-uid="692786102036804" data-tweet-created="2015-07-29T09:48:04Z"  
    data-tweet-fmt="TEN_CDP" data-screentime="TEN_CDP" data-name="Tennessee" data-  
    user-id="1024728991" data-user-follow="false" data-follows-you="false"  
    data-user-block="false" data-reply-to-user="1024728991"  
    data-repost-count="0" data-retweet="false" data-retweet-count="0"  
    data-retweet-id="892786102036804" data-retweet-time="2015-07-29T09:48:04Z" data-  
    user="Tennessee" data-mentioned_name="Tennessee" data-  
    mentioned_text="has a content" data-mentioned_time="2015-07-29T09:48:04Z" data-  
    mentioned_type="data-item-contents"> <br>  
    ;before  
    <div class="content"></div>  
    <div class="content">  
        <div class="stream-item-header"></div>  
        <div class="js-tweet-text-container">  
            <span class="TweetTextSize TweetTextSize--normal js-tweet-text  
            tweet-text" lang="en" data-wrapping="true" data-label="Label--part-0">  
                There is a week ago a kind of Maracossa issued on the  
                beach in Spain. This week a terror attack by a Renegades  
                is...  
            <a href="https://get.takel1.com/892786102036804" data-wrapping="true" data-label="Label--part-1">  
                a link to their website where you can see more about the attack  
            </a>  
        </div>  
    </div>
```

<http://www.Ivonwi.com/2017/11/12/scraping-russian-twitter-trolls-python-neo4j/>

Loading Tweets Into Neo4j



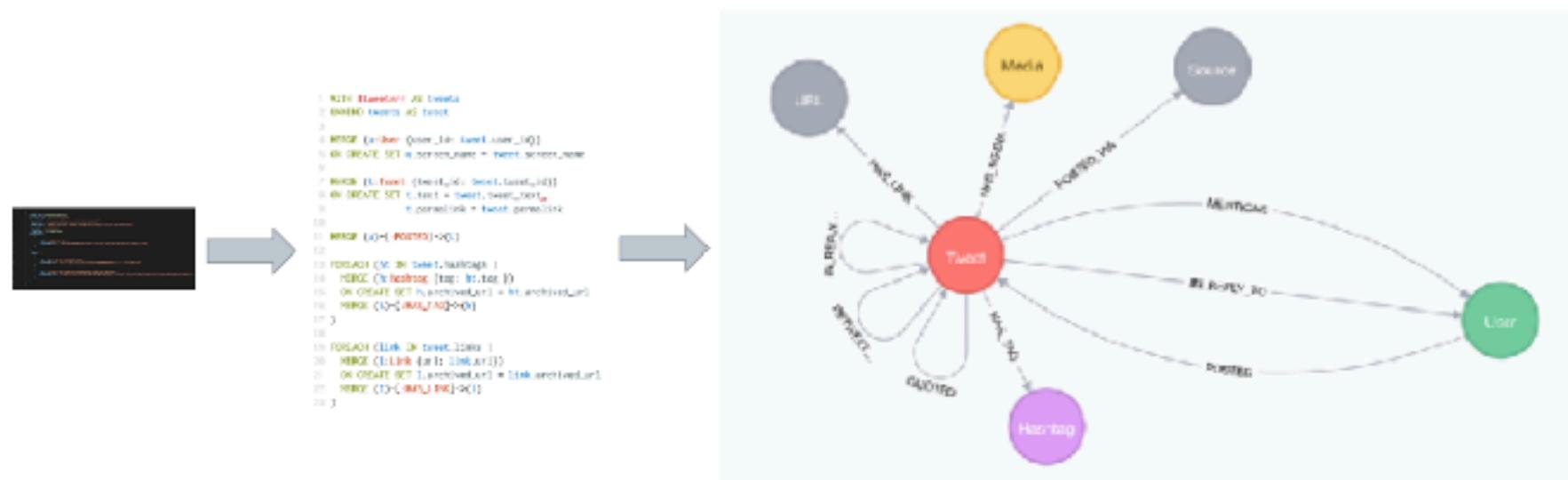
```
1 WITH $tweetArr AS tweets
2 UNWIND tweets AS tweet
3
4 MERGE (u:User {user_id: tweet.user_id})
5 ON CREATE SET u.screen_name = tweet.screen_name
6
7 MERGE (t:Tweet {tweet_id: tweet.tweet_id})
8 ON CREATE SET t.text = tweet.tweet_text,
9             t.permalink = tweet_permalink
10
11 MERGE (u)-[:POSTED]->(t)
12
13 FOREACH (ht IN tweet.hashtags |
14   MERGE (h:Hashtag {tag: ht.tag })
15   ON CREATE SET h.archived_url = ht.archived_url
16   MERGE (t)-[:HAS_TAG]->(h)
17 )
18
19 FOREACH (link IN tweet.links |
20   MERGE (l:Link {url: link.url})
21   ON CREATE SET l.archived_url = link.archived_url
22   MERGE (t)-[:HAS_LINK]->(l)
23 )
```

<http://www.lyonwj.com/2017/11/12/scraping-russian-twitter-trolls-python-neo4j/>



Success!

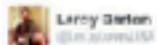
345k Tweets, 41k Users (454 Russian Trolls)



<http://www.lyonwj.com/2017/11/12/scraping-russian-twitter-trolls-python-neo4j/>



Extending Neo4j with Natural Language Processing



Larry Sutton
@lms.suttonUSA

See Profile

We hung out a huge banner right on the Arlington Memorial Bridge. Goodbye to murderer @BarackObama #ThanksObama



Use NLP to extract
Hashtags
from Tweet

Basic Tweet

Tweet Plus HashTags

How to combine open source NLP tools w/ Neo4j?



GraphAware Natural Language Processing

build passing This [Neo4j](#) plugin offers Graph Based Natural Language Processing capabilities.

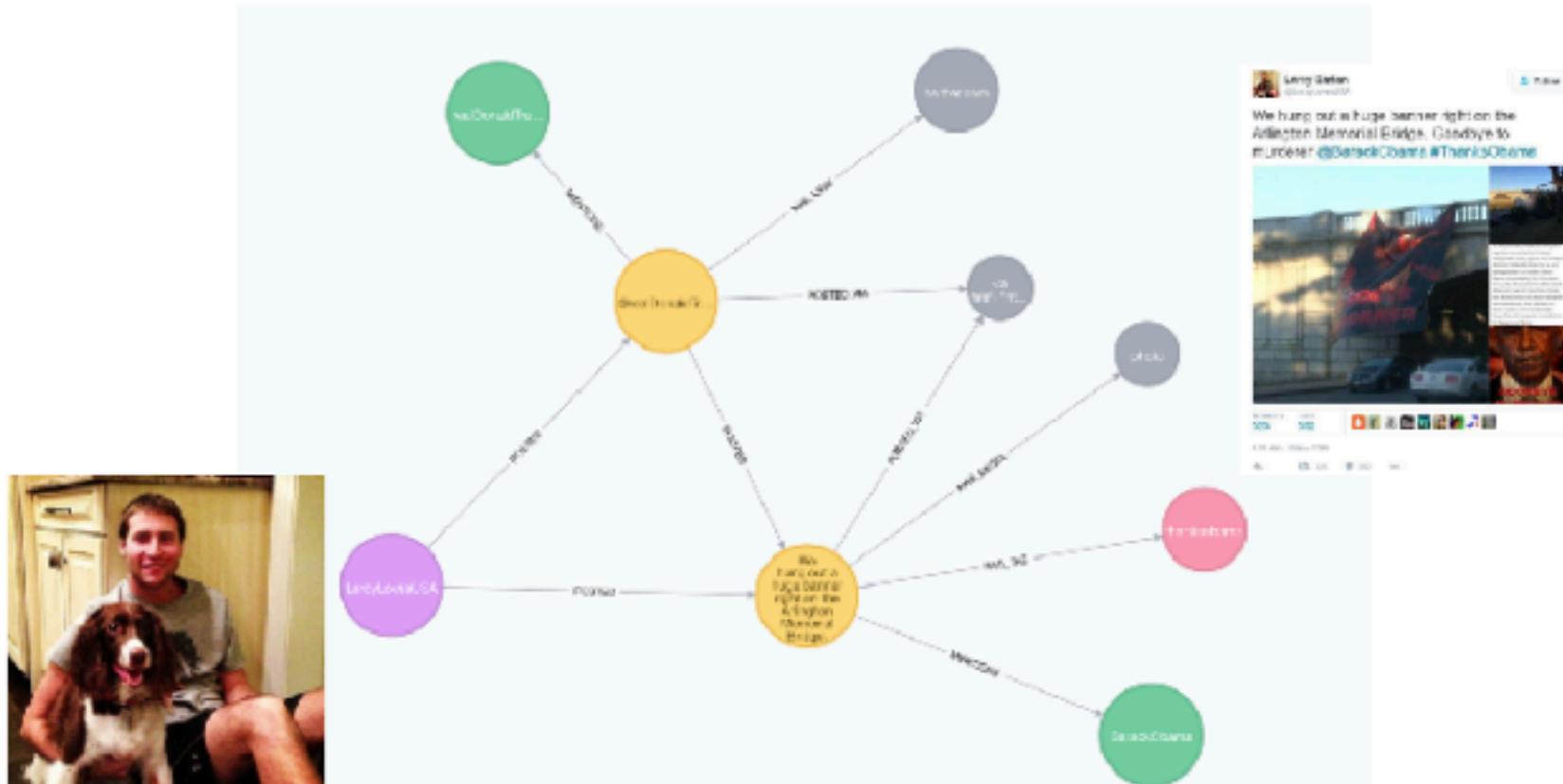


```
1 MATCH (tw:Tweet {lang: "en"})
2 CALL ga.nlp.annotate({text: tw.text, id: id(tw)})
3 YIELD result
4 MERGE (tw)-[:HAS_ANNOTATED_TEXT]->(result)
5 RETURN count(result)
```

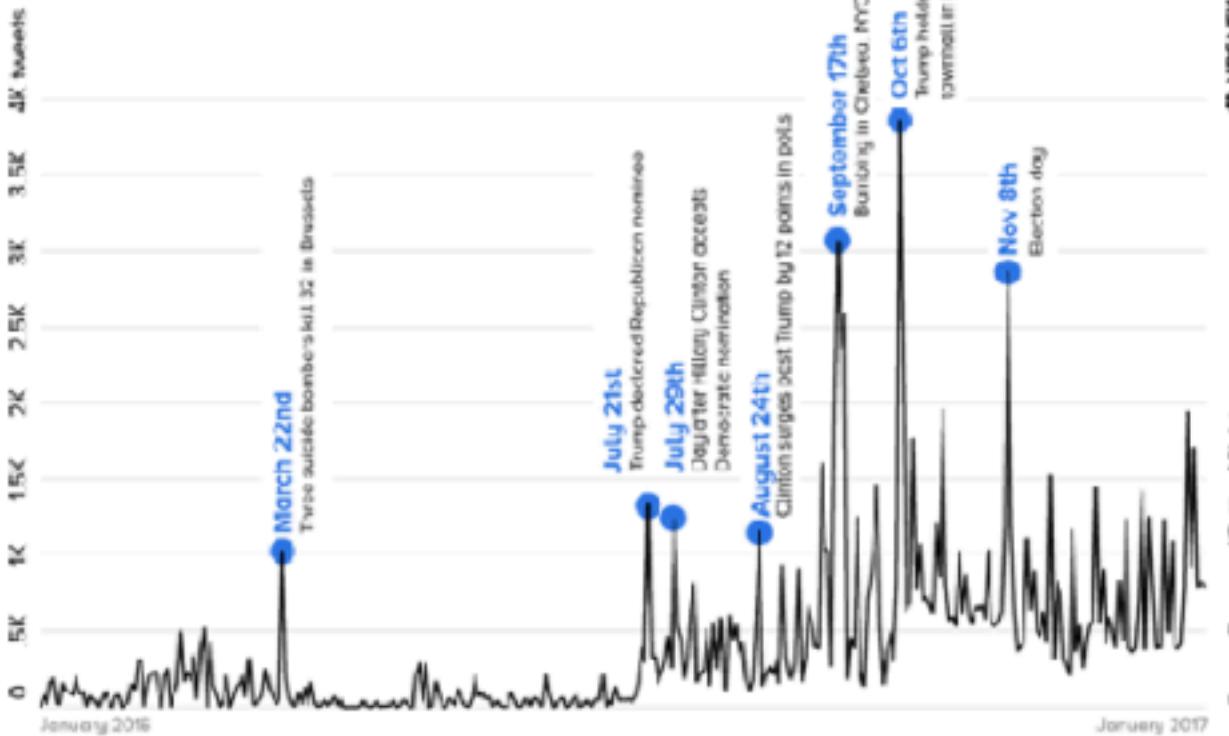
<https://github.com/graphaware/neo4j-nlp>



```
1 MATCH
2 (u:User {screen_name: "LeroyLovesUSA"})-[:POSTED]->(t:Tweet)-[:HAS_TAG]->(ht:Hashtag {key: "thanksobama"})
3 RETURN *
```



Russian Troll Volume Spiked During 2016 Campaign Events



<https://www.nbcnews.com/tech/social-media/russian-trolls-went-attack-during-key-election-moments-n827176>

Your typical American Citizen?



@ZeroLoveUSA

Cleveland Online

@OnlineCleveland

Breaking news, weather, traffic
and more for Cleveland. DM us
anytime. RTs not endorsements

City of Cleveland, USA

@ClevelandOnline

Your typical Local Political Party?

Russian

Your typical Local News Publication?

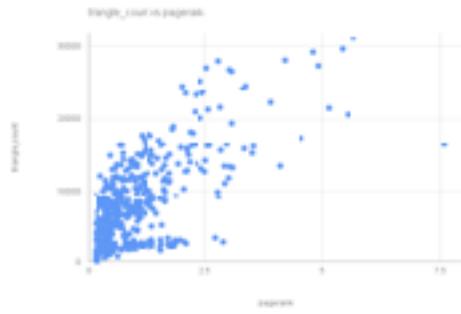
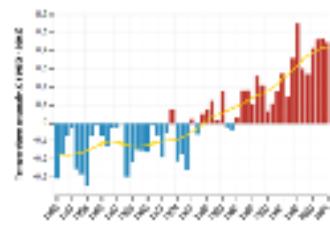
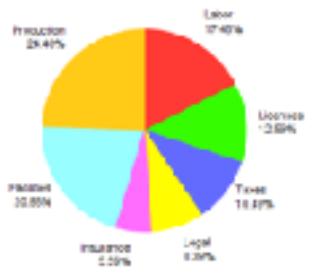


@TEN_GOP

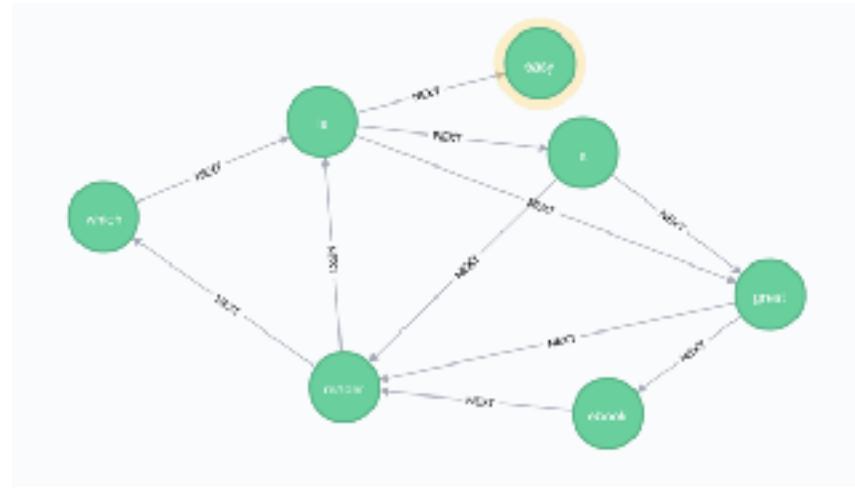
What's a Graph Database???



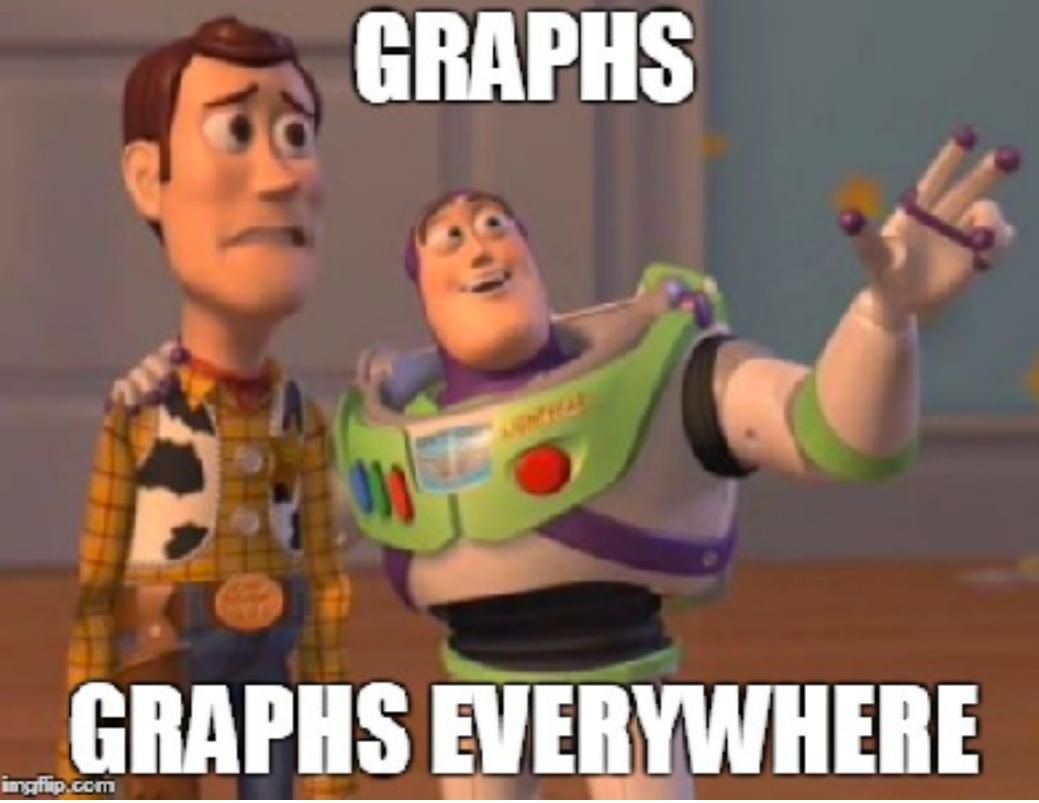
Chart



Graph

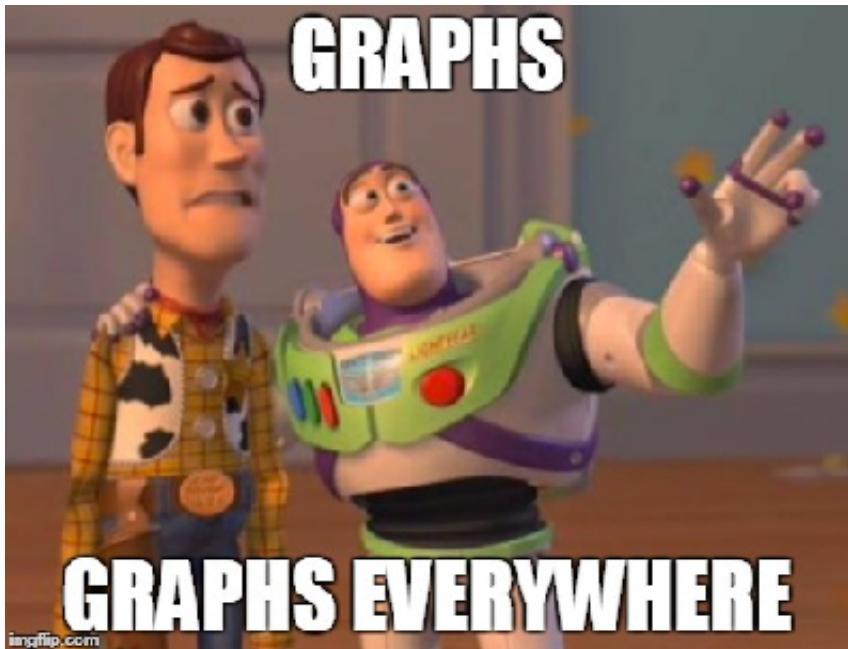


GRAPHS

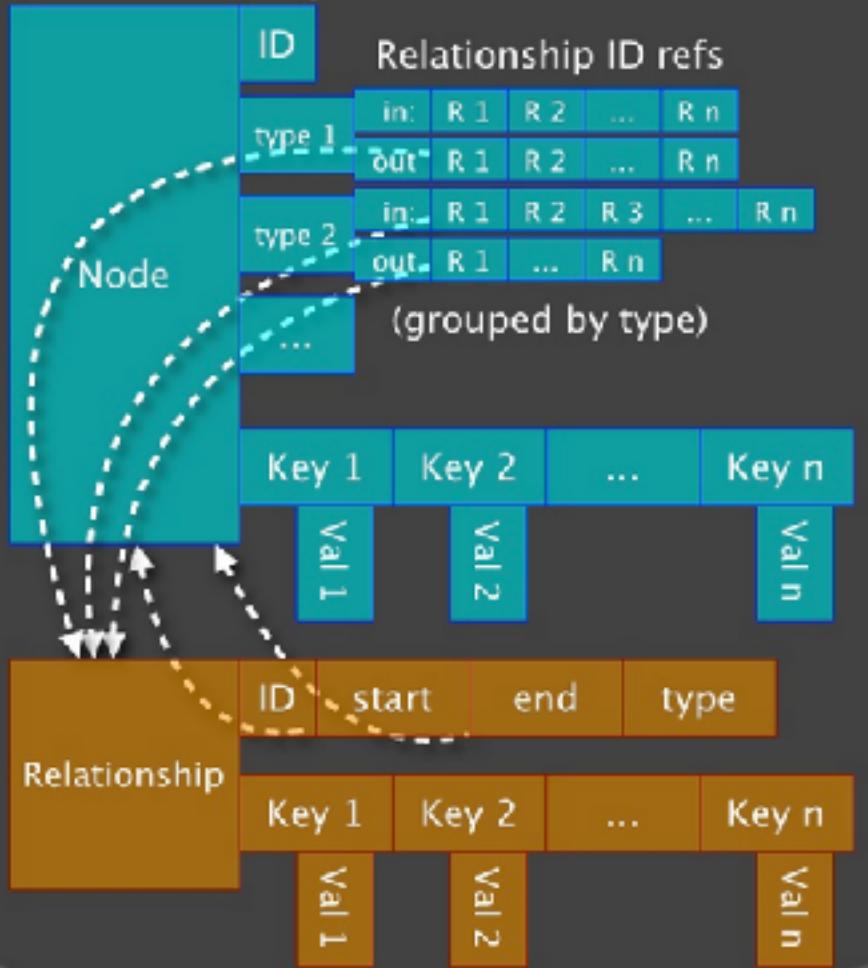


Common Use Case

- Real time recommendations
- Fraud Detection
- Network & IT Management
- Social Networks
- Bill of Materials
- Knowledge Graphs
- Master Data Management
- Access Management
- Microservices Analysis
- IoT
- ...



What we put in cache



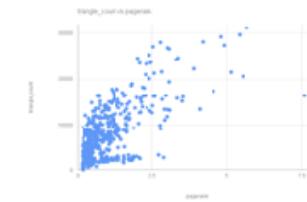
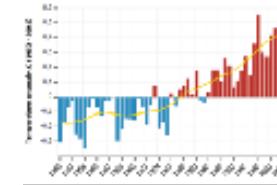
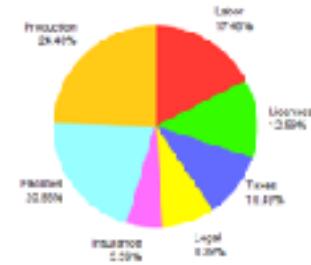
Neo4j Secret Sauce

- 1** Pointers instead of Lookups
- 2** Fixed Sized Records
- 3** “Joins” on Creation
- 4** Spin Spin Spin through this data structure

Neo4j Mission Statement

To help the world make sense of data

1 last_name,first_name,birthday,gender,type,state,district,party,url,address,phone,contact_form,rss_url,twitter,facebook,facebook_id,youtube,youtube_id,l
2 Brown,Sherrod,1952-11-09,M,sen,OH,,Democrat,<http://www.brown.senate.gov>,713 Hart Senate Office Building Washington DC 20510,202-224-2315,<http://www.bn>
3 Cantwell,Maria,1958-10-13,F,sen,WA,,Democrat,<http://www.cantwell.senate.gov>,511 Hart Senate Office Building Washington DC 20510,202-224-3441,<http://www.ca>
4 Cardin,Benjamin,1943-10-05,M,sen,MD,,Democrat,<http://www.cardin.senate.gov>,589 Hart Senate Office Building Washington DC 20510,202-224-4524,<http://www.ca>
5 Carper,Thomas,1947-01-23,M,sen,DE,,Democrat,<http://www.carper.senate.gov>,513 Hart Senate Office Building Washington DC 20510,202-224-2441,<http://www.ca>
6 Casey,Robert,1960-04-13,M,sen,PA,,Democrat,<http://www.casey.senate.gov>,393 Russell Senate Office Building Washington DC 20510,202-224-6324,<http://www.ca>
7 Corker,Bob,1952-06-24,M,sen,TN,,Republican,<http://www.corker.senate.gov>,425 Dirksen Senate Office Building Washington DC 20510,202-224-3344,<http://www.ca>
8 Feinstein,Dianne,1933-06-22,F,sen,CA,,Democrat,<http://www.feinstein.senate.gov>,331 Hart Senate Office Building Washington DC 20510,202-224-3841,<https://>
9 Hatch, Orrin,1934-08-22,M,sen,UT,,Republican,<https://www.hatch.senate.gov>,104 Hart Senate Office Building Washington DC 20510,202-224-5251,<http://www.ha>
10 Klobuchar,Amy,1960-05-25,F,sen,MN,,Democrat,<http://www.klobuchar.senate.gov>,302 Hart Senate Office Building Washington DC 20510,202-224-3244,<http://www.ca>
11 McCaskill,Claire,1953-07-24,F,sen,MU,,Democrat,<http://www.mccaskill.senate.gov>,738 Hart Senate Office Building Washington DC 20510,202-224-6154,<http://w>
12 Menéndez,Robert,1954-01-01,M,sen,NJ,,Democrat,<http://www.menendez.senate.gov>,528 Hart Senate Office Building Washington DC 20510,202-224-4744,<http://w>
13 Nelson,Bill,1942-09-29,M,sen,FL,,Democrat,<http://www.billnelson.senate.gov>,716 Hart Senate Office Building Washington DC 20510,202-224-5274,<http://www.ca>
14 Sanders,Bernard,1941-09-08,M,sen,VT,,Independent,<http://www.sanders.senate.gov>,332 Dirksen Senate Office Building Washington DC 20510,202-224-5141,<http://w>
15 Stabenow,Debbie,1956-04-29,F,sen,MI,,Democrat,<http://www.stabenow.senate.gov>,731 Hart Senate Office Building Washington DC 20510,202-224-4822,<http://w>
16 Tester,Jon,1950-06-21,M,sen,MT,,Democrat,<http://www.tester.senate.gov>,311 Hart Senate Office Building Washington DC 20510,202-224-2644,<http://www.test>
17 Whitehouse,Sheldon,1955-10-20,M,sen,RI,,Democrat,<http://www.whitehouse.senate.gov>,530 Hart Senate Office Building Washington DC 20510,202-224-2921,<http://w>
18 Barrasso,John,1952-07-21,M,sen,WY,,Republican,<http://www.barrasso.senate.gov>,307 Dirksen Senate Office Building Washington DC 20510,202-224-6441,<http://w>
19 Wicker,Roger,1951-07-05,M,sen,MS,,Republican,<http://www.wicker.senate.gov>,555 Dirksen Senate Office Building Washington DC 20510,202-224-6253,<http://w>
20 Alexander,Lamar,1946-07-03,M,sen,TN,,Republican,<http://www.alexander.senate.gov>,455 Dirksen Senate Office Building Washington DC 20510,202-224-4944,<ht>
21 Cochran,Thad,1937-12-07,M,sen,MS,,Republican,<http://www.cochran.senate.gov>,113 Dirksen Senate Office Building Washington DC 20510,202-224-5054,<http://w>
22 Collins,Susan,1952-12-07,F,sen,ME,,Republican,<http://www.collins.senate.gov>,413 Dirksen Senate Office Building Washington DC 20510,202-224-2523,<http://w>
23 Cornyn,John,1952-02-02,M,sen,TX,,Republican,<http://www.cornyn.senate.gov>,517 Hart Senate Office Building Washington DC 20510,202-224-2934,<http://www.co>
24 Durbin,Richard,1944-11-21,M,sen,IL,,Democrat,<http://www.durbin.senate.gov>,711 Hart Senate Office Building Washington DC 20510,202-224-2152,<http://www.du>
25 Enzi,Michael,1944-02-01,M,sen,WY,,Republican,<https://www.enzi.senate.gov>,379A Russell Senate Office Building Washington DC 20510,202-224-3424,<http://ww>
26 Graham,Lindsey,1955-07-09,M,sen,SC,,Republican,<http://www.lgraham.senate.gov>,299 Russell Senate Office Building Washington DC 20510,202-224-5972,<http://w>
27 Inhofe,James,1934-11-17,M,sen,OK,,Republican,<http://www.inhofe.senate.gov>,286 Russell Senate Office Building Washington DC 20510,202-224-4721,<http://w>
28 McConnell,Mitch,1942-02-28,M,sen,KY,,Republican,<http://www.mcconnell.senate.gov>,317 Russell Senate Office Building Washington DC 20510,202-224-2541,<ht>
29 Merkley,Jeff,1950-10-24,M,sen,OR,,Democrat,<http://www.merkley.senate.gov>,313 Hart Senate Office Building Washington DC 20510,202-224-3753,<http://www.m>
30 Reed,John,1949-11-12,M,sen,RI,,Democrat,<http://www.reed.senate.gov>,728 Hart Senate Office Building Washington DC 20510,202-224-4842,<http://www.reed.sen>
31 Risch,James,1943-05-03,M,sen,ID,,Republican,<http://www.risch.senate.gov>,403 Russell Senate Office Building Washington DC 20510,202-224-2752,<http://w>
32 Roberts,Pat,1936-04-28,M,sen,KS,,Republican,<http://www.roberts.senate.gov>,189 Hart Senate Office Building Washington DC 20510,202-224-4774,<http://w>
33 Sessions,Jefferson,1948-12-24,M,sen,AL,,Republican,<http://www.sessions.senate.gov>,326 Russell Senate Office Building Washington DC 20510,202-224-4124,I
34 Shaheen,Jeanne,1947-01-20,F,sen,NH,,Democrat,<http://www.shaheen.senate.gov>,505 Hart Senate Office Building Washington DC 20510,202-224-2841,<http://w>
35 Udall,Tom,1948-05-18,M,sen,NM,,Democrat,<http://www.tomudall.senate.gov>,531 Hart Senate Office Building Washington DC 20510,202-224-6821,<http://www.tu>
36 Warner,Merk,1954-12-15,M,sen,VA,,Democrat,<http://www.warner.senate.gov>,475 Russell Senate Office Building Washington DC 20510,202-224-2023,<http://w>
37 Gillibrand,Kirsten,1960-12-09,F,sen,NY,,Democrat,<http://www.gillibrand.senate.gov>,478 Russell Senate Office Building Washington DC 20510,202-224-4451,I
38 Franken,Alan,1951-06-21,M,sen,MN,,Democrat,<http://www.franken.senate.gov>,389 Hart Senate Office Building Washington DC 20510,202-224-5541,<http://w>
39 Coons,Chris,1953-09-09,M,sen,DE,,Democrat,<http://www.coons.senate.gov>,1274 Russell Senate Office Building Washington DC 20510,202-224-5042,<http://w>
40 Manchin,Joe,1947-08-24,M,sen,WV,,Democrat,<http://www.manchin.senate.gov>,386 Hart Senate Office Building Washington DC 20510,202-224-3954,<http://w>
41 Aderholt,Robert,1955-07-22,M,rep,AL,4,Republican,<https://aderholt.house.gov>,235 Cannon HOB; Washington DC 20515-0104,202-225-4876,<http://aderholt.house.gov>
42 Amash,Justin,1960-04-10,M,rep,MI,3,Republican,<http://amash.house.gov>,114 Cannon HOB; Washington DC 20515-2203,202-225-3001,<https://amash.house.gov/con>



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44. [Redacted]

votes.csv

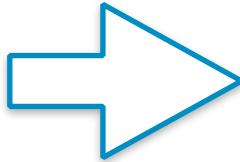
1,000,000+ rows of data, one row for each vote cast in Congress. This includes votes on bills, resolutions, and other legislative actions, as well as committee actions such as committee reports and floor votes.

committees.cs

V
Committee Data: This dataset contains information about the committees in Congress, including their names, abbreviations, and chairpersons. It also includes details about the bills and resolutions introduced by each committee.

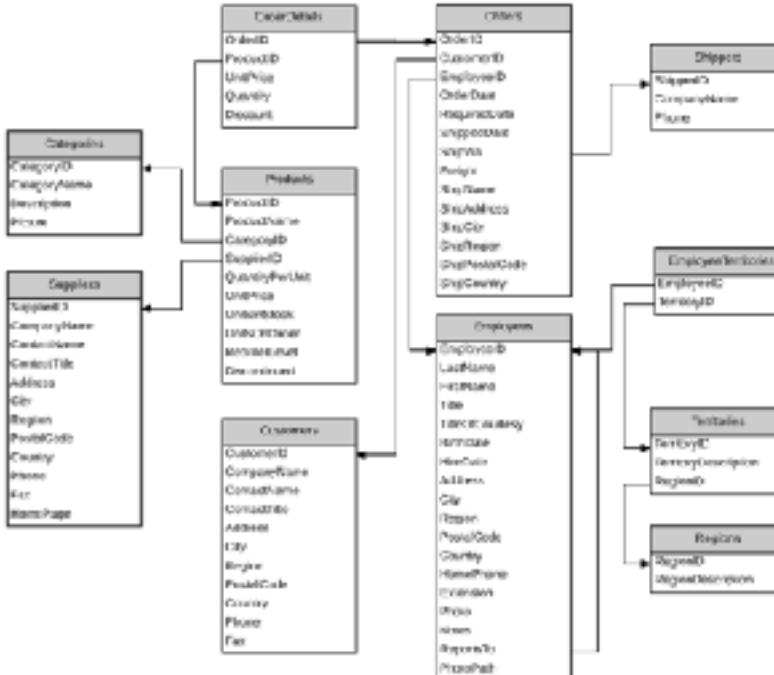
bills.cs

V
Bills Data: This dataset contains information about bills introduced in Congress, including their titles, sponsors, and status. It also includes details about the committees to which bills were referred and the bills' legislative history.



ER Diagrams

SQL



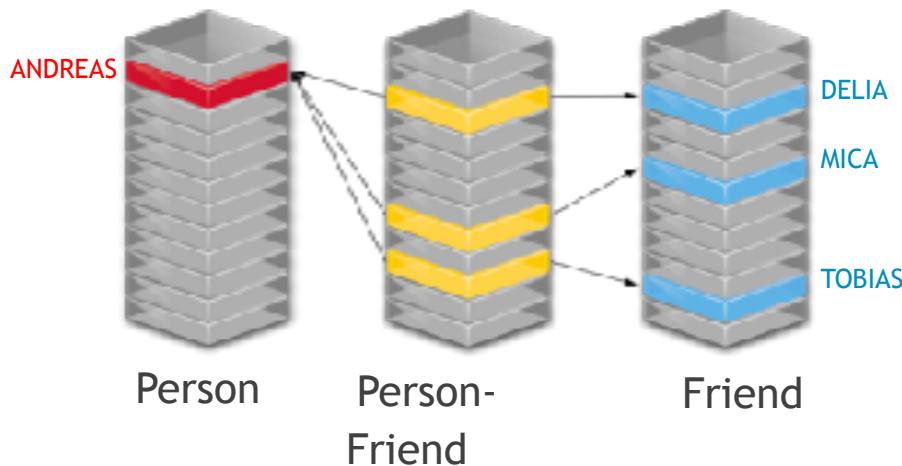
```

SELECT 1 AS directReports, sum(T.count) AS count
FROM (
SELECT management AS directReports, 1 AS count
FROM person_repos AS manager
WHERE manager.name IN (SELECT id FROM person WHERE name = "Name Name")
) AS T
UNION
SELECT manager AS directReports, count(manager.directReports) AS count
FROM person_repos AS manager
WHERE manager.name IN (SELECT id FROM person WHERE name = "Name Name")
) GROUP BY directReports
UNION
SELECT management AS directReports, count(person_repos.management) AS count
FROM person_repos AS manager
WHERE manager.directReports = manager.id
WHERE manager.name IN (SELECT id FROM person WHERE name = "Name Name")
) AS T
UNION
SELECT management AS directReports, count(1) AS count
FROM person_repos AS manager
WHERE manager.name IN (SELECT id FROM person WHERE name = "Name Name")
) AS T
UNION
SELECT management AS directReports, sum(T.count) AS count
FROM (
SELECT management AS directReports, 1 AS count
FROM person_repos AS manager
WHERE manager.name IN (SELECT id FROM person WHERE name = "Name Name")
) AS T
UNION
SELECT manager AS directReports, count(manager.directReports) AS count
FROM person_repos AS manager
WHERE manager.name IN (SELECT id FROM person WHERE name = "Name Name")
) GROUP BY directReports
UNION
SELECT management AS directReports, count(person_repos.management) AS count
FROM person_repos AS manager
WHERE manager.directReports = manager.id
WHERE manager.name IN (SELECT id FROM person WHERE name = "Name Name")
) AS T
UNION
SELECT management AS directReports, count(1) AS count
FROM person_repos AS manager
WHERE manager.name IN (SELECT id FROM person WHERE name = "Name Name")
) AS T

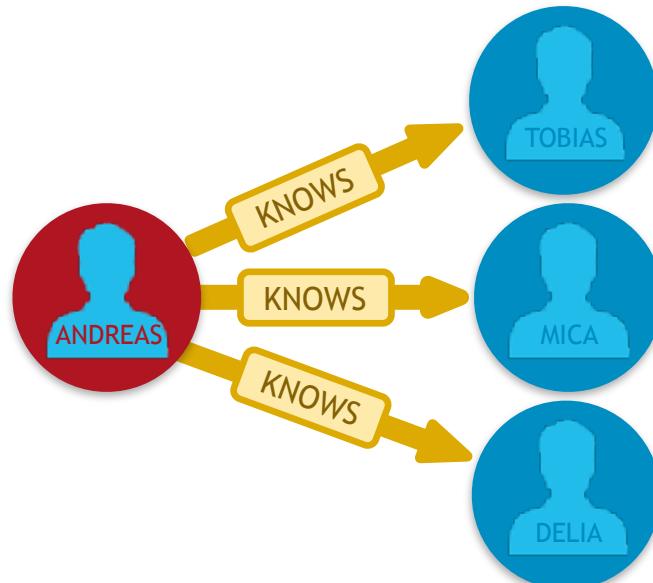
```

Relational Versus Graph Models

Relational Model



Graph Model



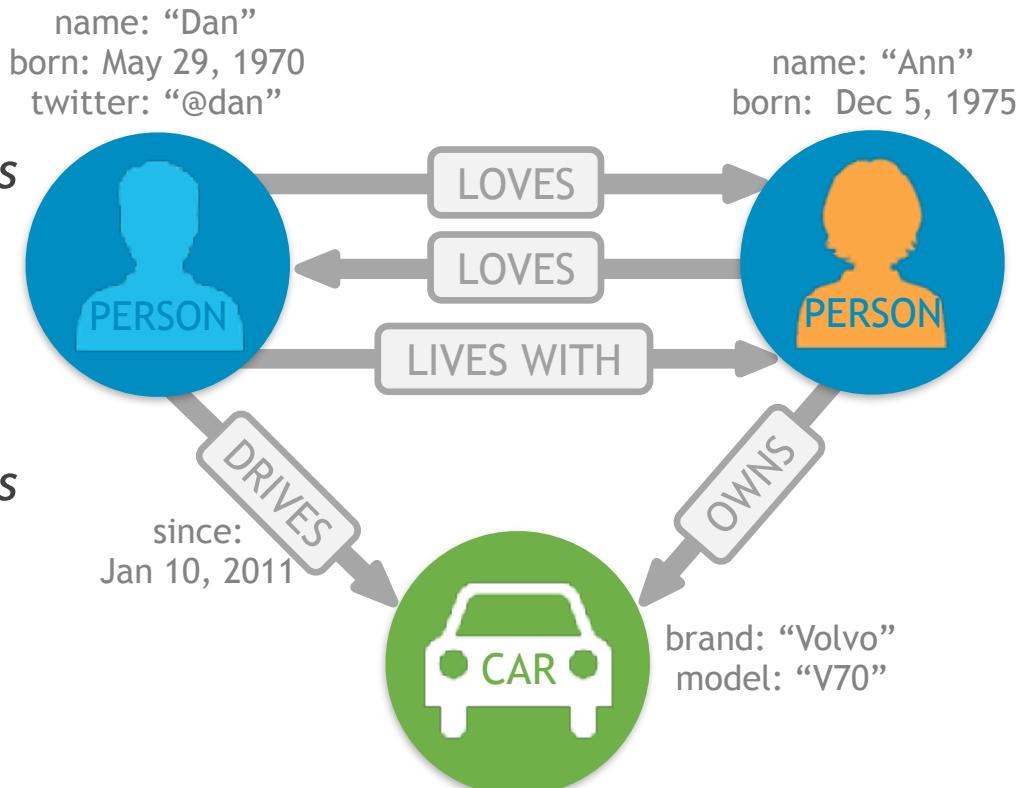
Property Graph Model Components

Nodes

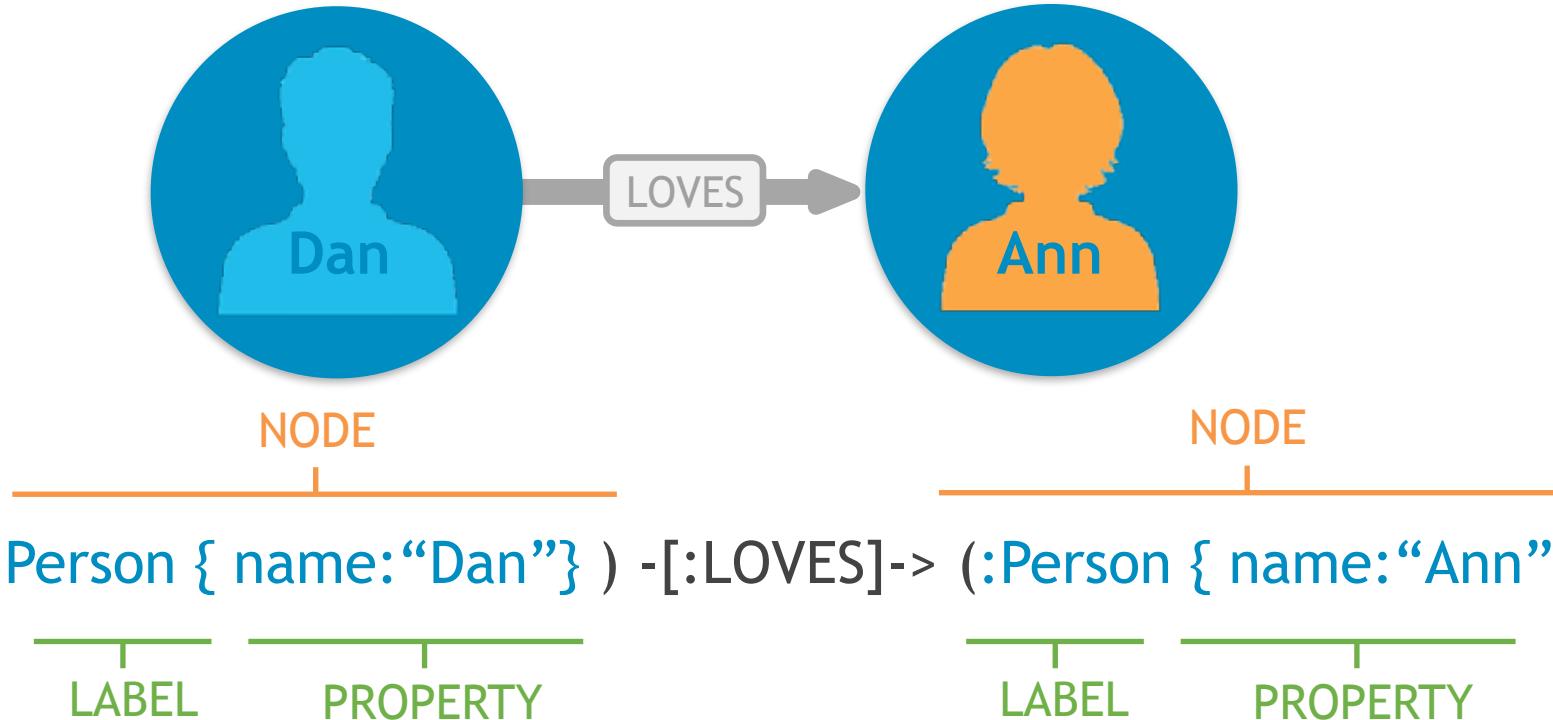
- The objects in the graph
- Can have name-value *properties*
- Can be *labeled*

Relationships

- Relate nodes by type and direction
- Can have name-value *properties*



Cypher: Powerful and Expressive Query Language



Cypher Query Language

SQL for graphs

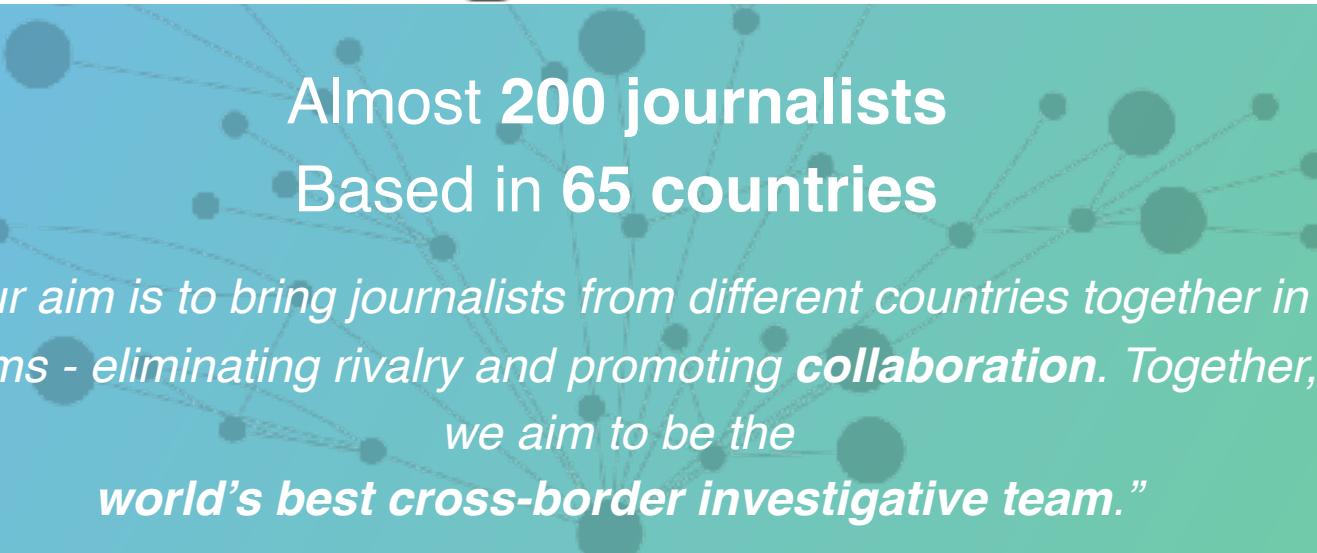
THE PANAMA PAPERS

Politicians, Criminals and the Rogue Industry That Hides Their Cash





The International Consortium of Investigative Journalists



A network diagram composed of numerous small, semi-transparent circles of varying sizes and shades of blue and grey, connected by thin grey lines that form a complex web. This graphic serves as a background for the text in the center of the slide.
**Almost 200 journalists
Based in 65 countries**

*“Our aim is to bring journalists from different countries together in teams - eliminating rivalry and promoting **collaboration**. Together, we aim to be the **world’s best cross-border investigative team.**”*

icij.org/about

Exposure of hidden Secrets



Exposed the offshore holdings of 12 current and former world leaders.

And dealings of 128 more politicians and public officials around the world.

The scale of the leak

Volume of data compared to previous leaks

1,7 GB

Cablegate/Wikileaks (2010)



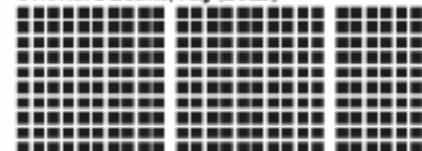
≈ 2,6 TB

Panama Papers/ICIJ (2016)

■ = 1GB

260 GB

Offshore Leaks/ICIJ (2013)



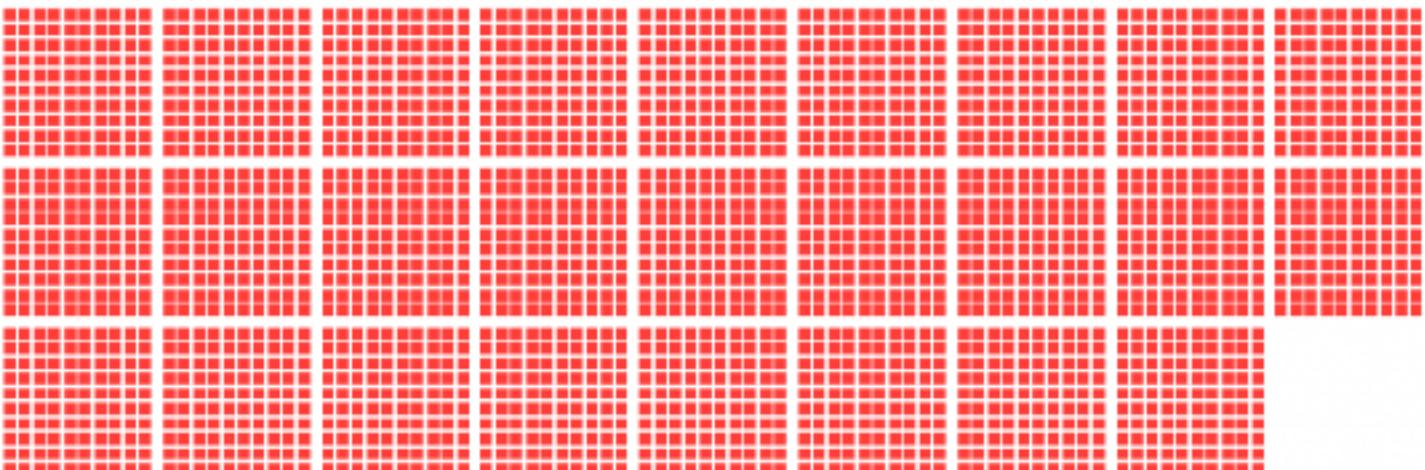
4 GB

Luxemburg Leaks/ICIJ (2014)



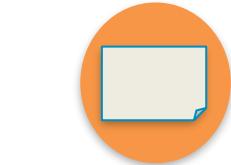
3,3 GB

Swiss Leaks/ICIJ (2015)





Context is King



name:
"Alice"
last: „Smith“
role:
„Advisor“



name: "John"
last: „Miller“
role:
„Negotiator“



name: "Jose"
last: "Pereia"
position:
"Governor"

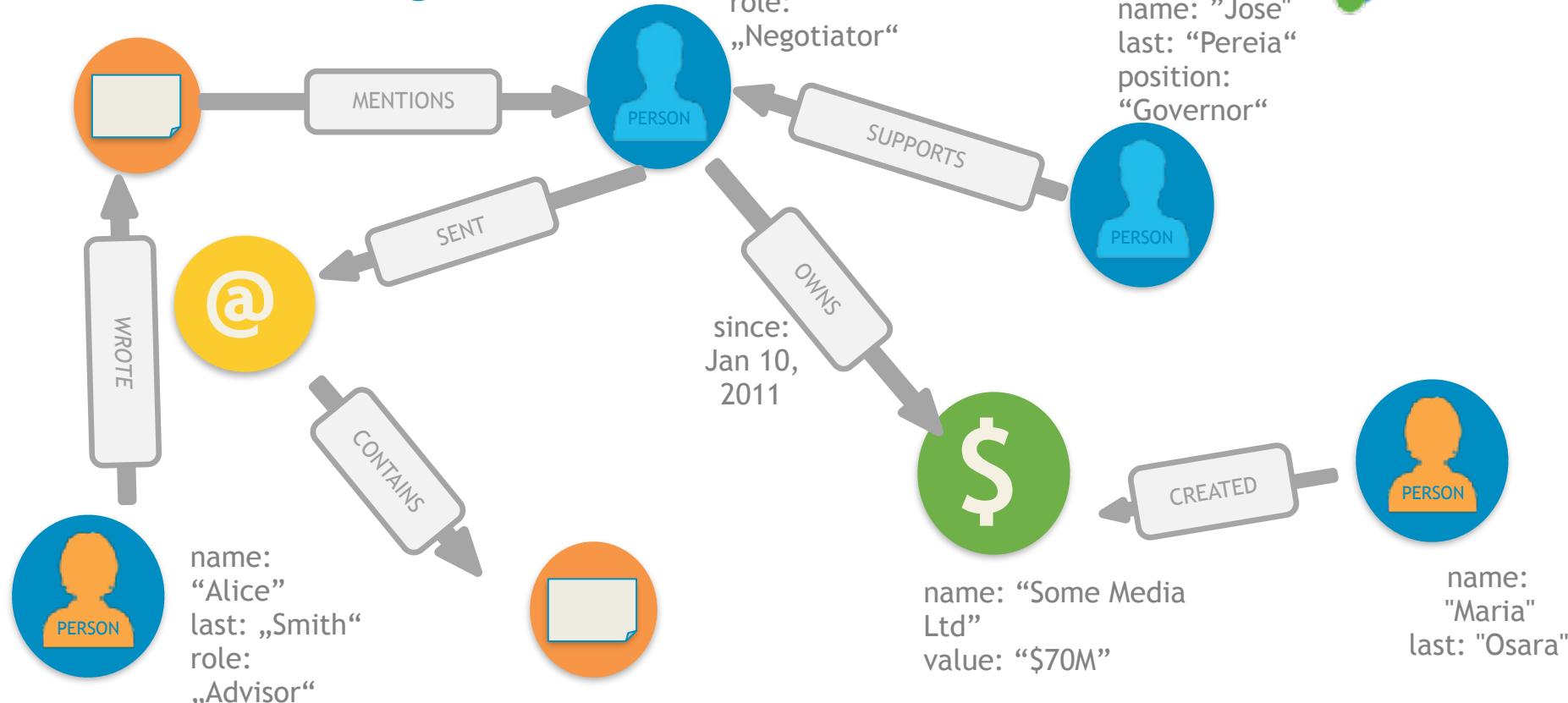


name:
"Maria"
last: "Osara"



name: "Some Media
Ltd"
value: "\$70M"

Context is King



We need a data model

Either based on our use cases & questions
On the entities present in our meta-data and data.

Meta Data Entities

- Document, Email, Contract, DB-Record
- Meta: Author, Date, Source, Keywords
- Conversation: Sender, Receiver, Topic
- Money Flows

Actual Entities

- Person
- Representative (Officer)
- Address
- Client
- Company
- Account

Data model - relationships

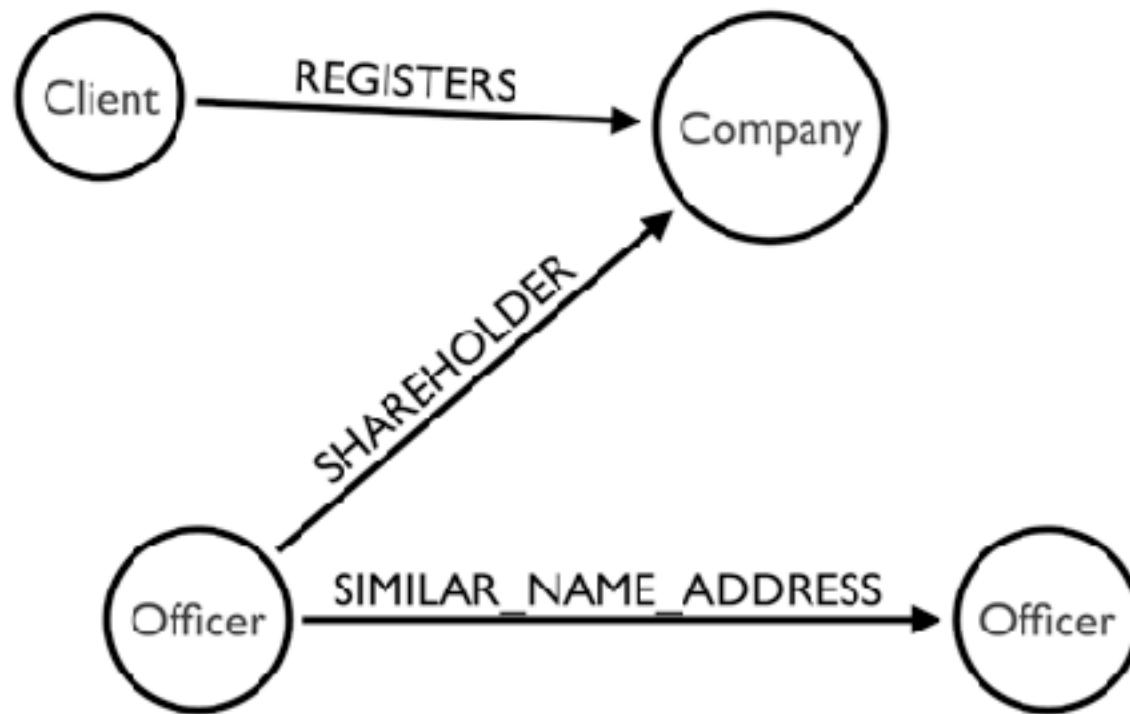
Meta-Data

- sent, received, cc'ed
- mentioned, topic-of
- created, signed
- attached
- roles
- family relationships

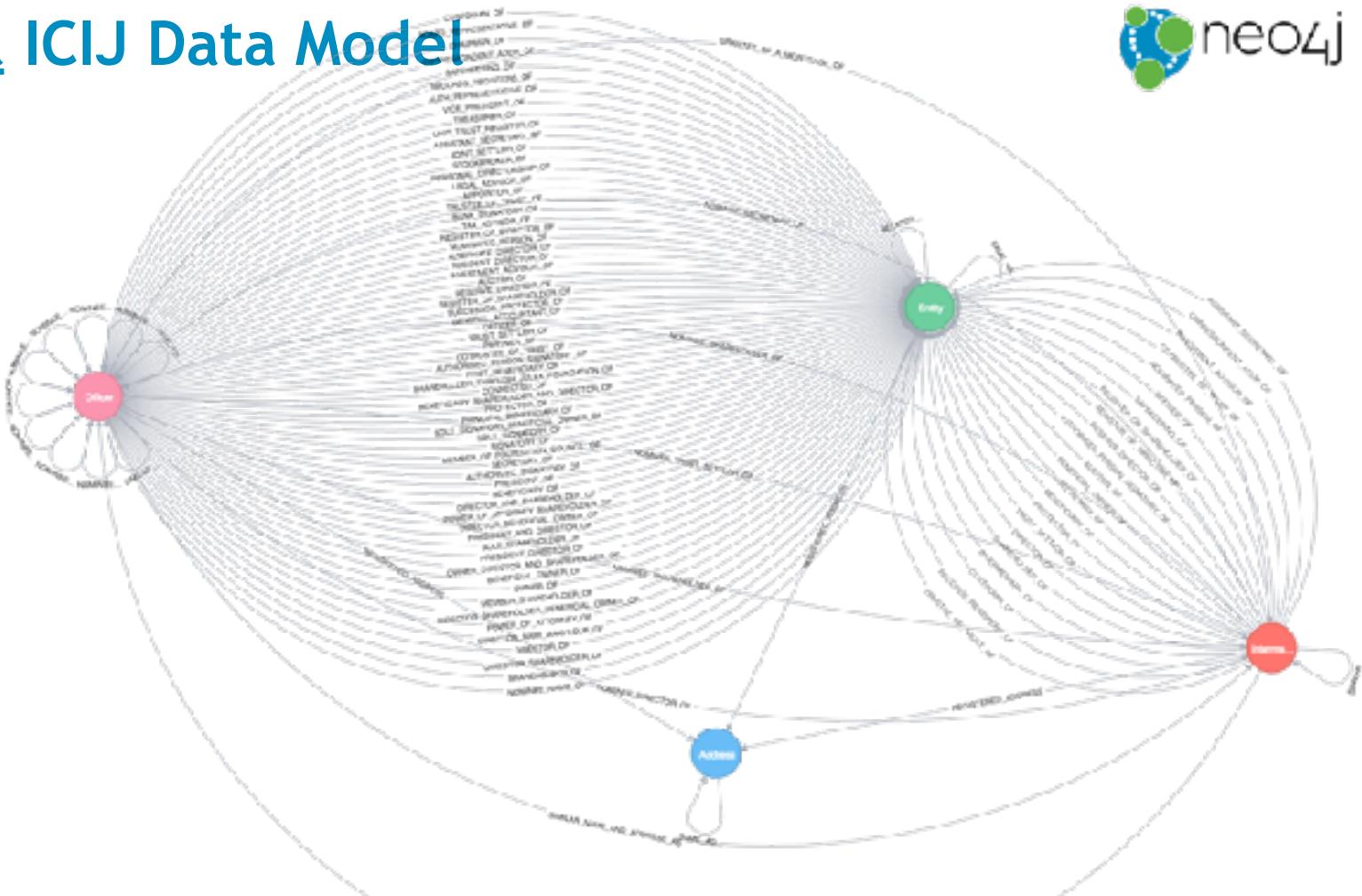
Activities

- open account
- manage
- has shares
- registered address
- money flow

The Basic ICIJ Data Model



The Real ICIJ Data Model



The Predictions

Country leaders Politicians/public officials Filters Region v Country v

A grid of 15 political portraits from various countries, arranged in three rows. The top row contains six portraits: President of Argentina, Former prime minister of Georgia, Iceland's prime minister, Ex-prime minister of Iraq, Former prime minister of Jordan, and Former prime minister of Qatar. The middle row contains six portraits: Former Emir of Qatar, King of Saudi Arabia, Former president of Sudan, UAE President, Abu Dhabi emir, Convicted former Ukraine prime minister, and President of Ukraine. The bottom row contains two portraits: Former prime minister of Australia and Australia's prime minister.

President of Argentina	Former prime minister of Georgia	Iceland's prime minister	Ex-prime minister of Iraq	Former prime minister of Jordan	Former prime minister of Qatar
Former Emir of Qatar	King of Saudi Arabia	Former president of Sudan	UAE President, Abu Dhabi emir	Convicted former Ukraine prime minister	President of Ukraine

Former prime minister of Australia Australia's prime minister

Actually found because of Neo4j



Paradise Papers: Commerce chief Wilbur Ross's links with sanctioned Russians

By Paradise Papers reporting team
BBC Panorama

© 5 November 2017

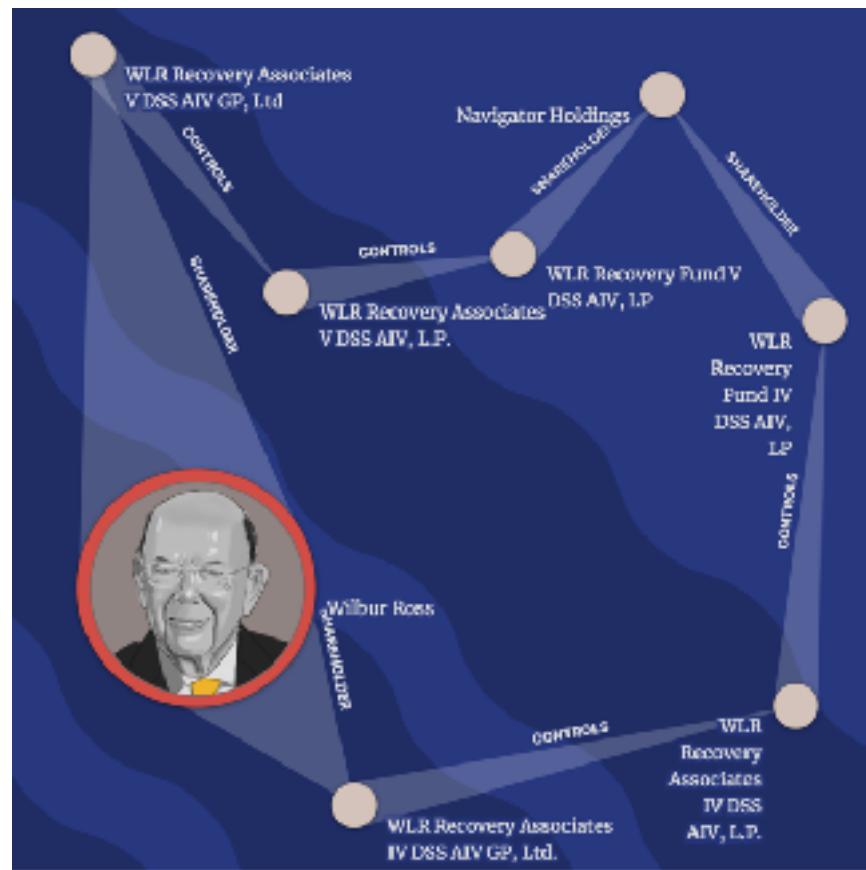
    Share



Wilbur Ross has played a key part in Donald Trump's business and political careers

A top member of Donald Trump's administration has business links with Russian allies of President Vladimir Putin who are under US sanctions, the Paradise Papers have revealed.

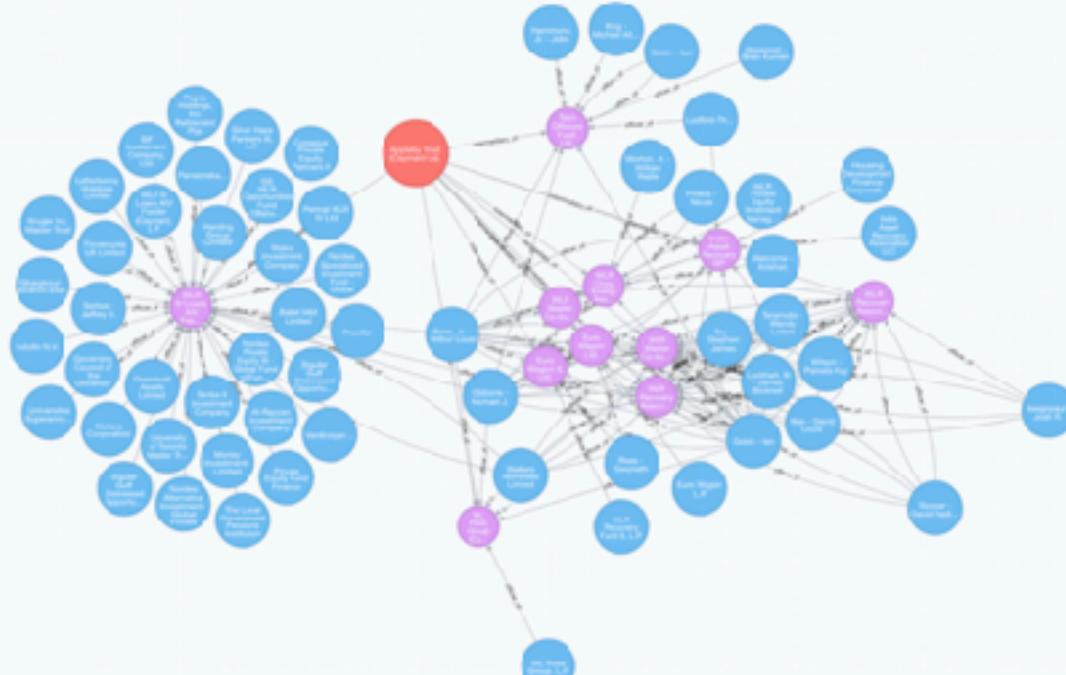
<http://www.bbc.com/news/world-us-canada-41876939>



<https://www.icij.org/investigations/paradise-papers/us-president-donald-trumps-influencers/>

Bit more connected though

```
// Wilbur Ross's connections in the Paradise Papers
MATCH (o:Officer)-->(e:Entity)-[:intermediary_of]-(i:Intermediary)
WHERE o.name CONTAINS "Ross"
MATCH (e)--(o2:Officer)
RETURN *
```



Make Sense Of Data

The screenshot shows the Neo4j Sandbox landing page with a grid of service cards:

- Input Service**: Jupyter service. Launch Service.
- Feedback Papers by ICN**: The Paradise Papers classification guide from the International Consortium members. Launch Service.
- Paradise Papers by ICN**: The Paradise Papers dataset, derived from customized documents from the International Consortium members (ICN). Launch Service.
- NeuroML Java**: Generate personalized real-time neuroinformatics - long distance research. Launch Service.
- Hosted AWS Lambda Functions**: Deploy analytical code snippets — no need to install or manage. Launch Service.
- Log4J**: Log4J Configuration generator. Launch Service.
- Markov Model**: Build Markov Models. Launch Service.
- Standardized DPLP**: Use our services from Oracle Business Objects. Launch Service.
- Twitter**: Explore trending Twitter topics, analyze sentiment, and extract entities. Launch Service.
- OpenCyber**: OpenCyber is a cloud-based platform for managing open data resources. Launch Service.

<https://neo4j.com/sandbox-v2/>

The screenshot shows the Neo4j Sandbox dashboard for the "Paradise Papers by ICN" service. The top navigation bar includes "Logout". The main area displays a greeting and service details:

Greetings William Lyon
Welcome to the Neo4j Sandbox. If you have any questions or problems, feel free to reach out to us at davro@neo4j.com.

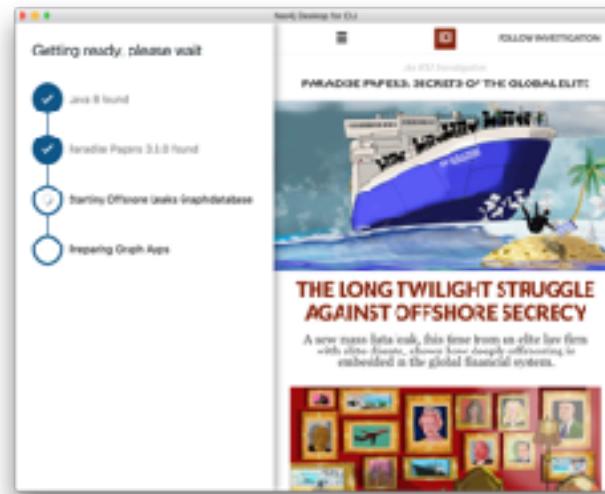
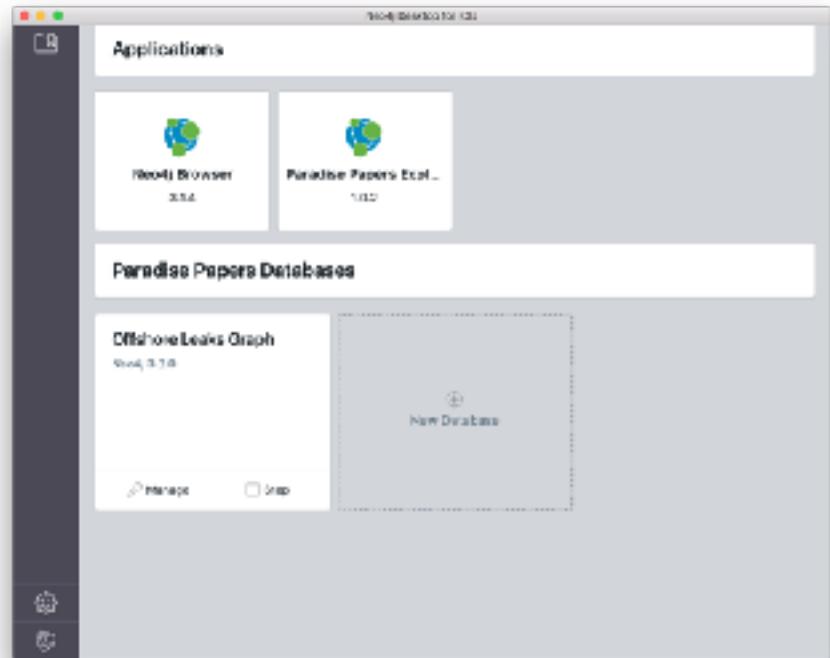
Your Current Sandboxes

Name	Service Type	Status	Actions
Paradise Papers by ICN	Graph Database	Running	Get Started, Details, Data Mode, Code, Advanced

Paradise Papers by ICN (Running)

Neo4j Browser: <https://192-168-1-201-205/neo4j/sandbox.com/>
Direct Neo4j HTTP: <http://192.168.1.205:32875/browser/>
Username: neo4j
Password: cointinences-loaned-john
IP Address: 192.168.1.205
HTTP Port: 30575
Bolt Port: 30574
Expires: 2 days, 23 hours, 59 minutes

Neo4j Desktop For ICIJ



<https://offshoreleaks.icij.org/pages/database>

<https://www.eventbrite.com/e/introduction-to-neo4j-las-vegas-nv-tickets-56521691902>



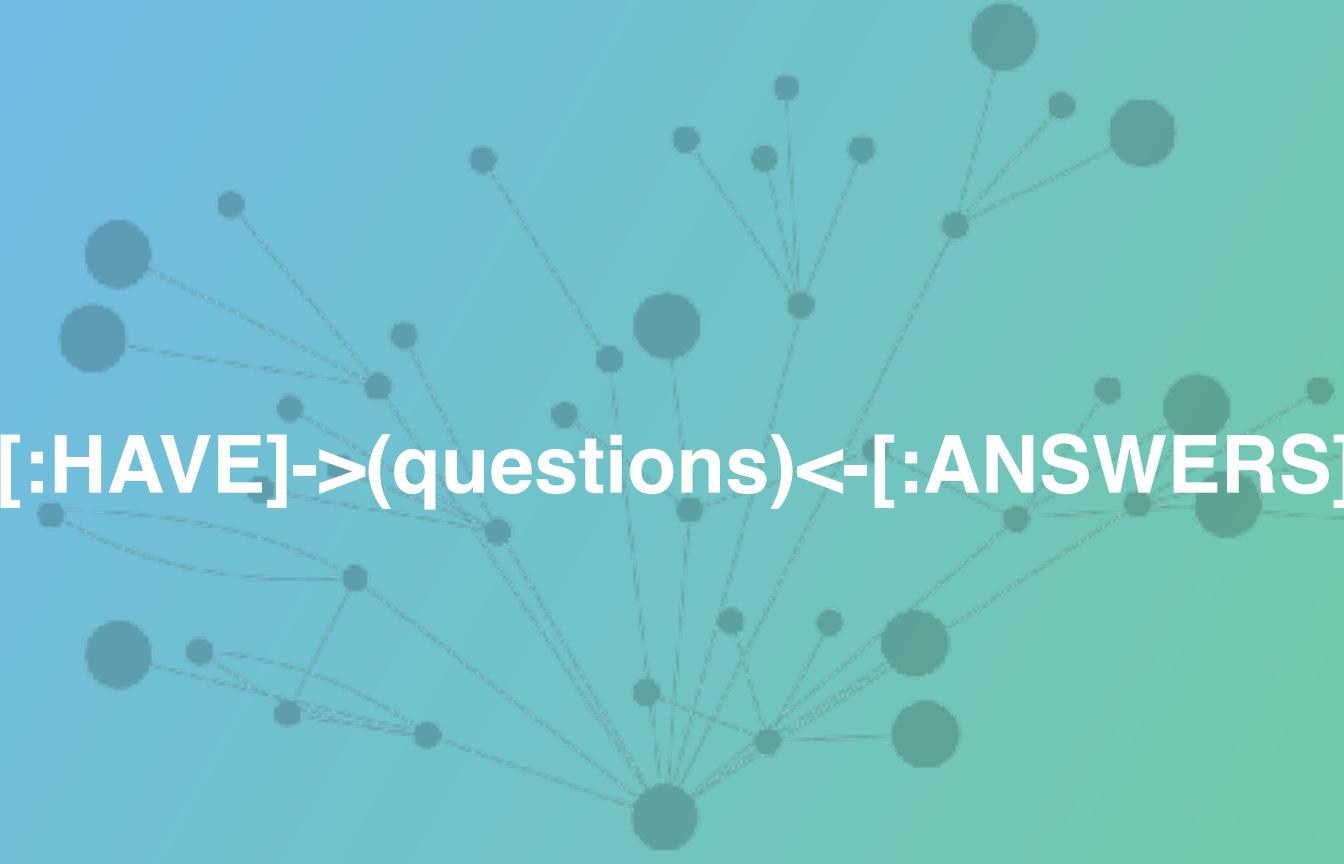
Introduction to Neo4j - Las Vegas, NV
by Neo4j
\$149 - \$299
[Tickets](#)

[Description](#)
Introduction to Neo4j
Duration: 0-hours/1 day
Skill Level: Beginner
Audience for this course: Developers, Architects, Administrators, Data Scientists, Data Analysts
Course Description
The course provides an introduction to Neo4j, a graph database management system. It covers the basics of graph databases, including what they are, how they differ from traditional relational databases, and how they can be used to solve complex real-world problems. Participants will learn how to use the Neo4j browser to query and visualize data, as well as how to use Cypher, the declarative query language for graph databases. The course also covers basic concepts such as nodes, relationships, and properties, and how to use them to model data. By the end of the course, participants will have a solid understanding of Neo4j and its capabilities, and will be able to apply this knowledge to their own projects.

[Date And Time](#)
Tue, March 12, 2019
0:00 AM – 6:00 PM PDT
[Add to Calendar](#)

[Location](#)
New Horizons



A network graph visualization consisting of numerous small, semi-transparent teal-colored circles of varying sizes scattered across the frame. These nodes are interconnected by a dense web of thin, light-gray lines, forming a complex web-like structure. In the center, there is a larger, solid black circle, which appears to be a hub node connected to many other nodes.

(you)-[:HAVE]->(questions)<-[:ANSWERS]-(neo)