

Find **Better** Answers

Top 5 Search & Big Data Analytics Use Cases

Gary Holloway

Operations Manager

31 May 2017

"THE AVERAGE PERSON TODAY PROCESSES MORE DATA IN A SINGLE DAY THAN A PERSON IN THE 1500'S DID IN AN ENTIRE LIFETIME."

Big Data for Search

How can Big Data technologies help us to create better search systems?

Search for Big Data

How can search help to democratize traditional Big Data?

Search Technologies Background

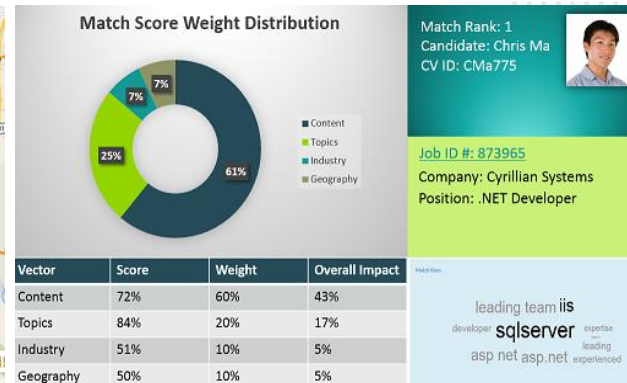


- Founded 2005
- 200+ employees
- 800+ customers worldwide
- Deep search and big data expertise
- Consistent revenue growth
- Consistent profitability



Recruiting – Search and Match

Search + Analytics = New User Paradigm



Query

“List all Java programmer CVs”

Navigate

“Show all Java programmers within 10 miles the job location”

Analyze

“How good a fit is this candidate?”

Automated Recommendation

This is the best candidate



Machine
Learning



E-Commerce – Log Analytics

The screenshot shows the Amazon.co.uk homepage. The browser's address bar displays the URL <https://www.amazon.co.uk>. The top navigation bar includes the Amazon Prime logo, a 'Shop by Department' dropdown, and a search bar. The search bar contains the letter 'i', and a dropdown menu of search suggestions is visible. The suggestions include 'iphone 6 case in All Departments', 'iphone 6 case in Electronics & Photo', 'iphone 6 case in Amazon Warehouse Deals', 'iphone 5s case', 'iphone 6s case', 'iphone 6s', 'iphone 6', 'iphone 5s', 'iphone 5c case', and 'iphone charger'. Below the search bar, there is a banner for 'Luxury Men's Grooming Best Sellers from Jack Black' with a 'See more' link. The banner features images of various Jack Black grooming products, including a tube of Lip Balm, a bottle of Performance Remedy, and a tube of Seek Finish Texture Cream.

amazon.co.uk
Prime

Shop by Department ▾

Philip's

All ▾ i

Search suggestions

- iphone 6 case in All Departments
- iphone 6 case in Electronics & Photo
- iphone 6 case in Amazon Warehouse Deals
- iphone 5s case
- iphone 6s case
- iphone 6s
- iphone 6
- iphone 5s
- iphone 5c case
- iphone charger

Luxury Men's Grooming Best Sellers from Jack Black [See more](#)

Jack Black Lip Balm

Jack Black Performance Remedy

Jack Black Seek Finish Texture Cream

Amazon.co.uk: Low Prices

https://www.amazon.co.uk

Apps Aspire Javadoc OpenAir NZBindex.in Europe - All Documents homework wiki Phil's Outlook @ ST Mechela Restaurante

amazon.co.uk Prime

All en

Search suggestions

- england football shirt in All Departments
- england football shirt in Clothing
- england football shirt in Sports & Outdoors
- england football shirt 2016
- england flag
- england shirt
- engagement rings
- england
- engagement gifts
- england bunting

Shop by Department

Philip's

fireTV stick from £34.99

Hello, Philip Your Account

Your Prime

Your Lists

Basket

20% selected e-

kindle paperwhite £109.99 £87.99

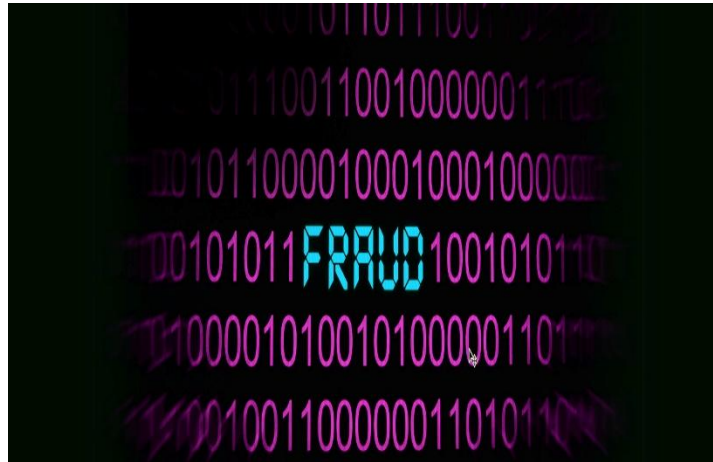
kindle voyage £169.99 £135.99

Luxury Men's Grooming Best Sellers from Jack Black See more

Amazon uses cookies. What are cookies?

Prime music

Enjoy over a million songs Included with



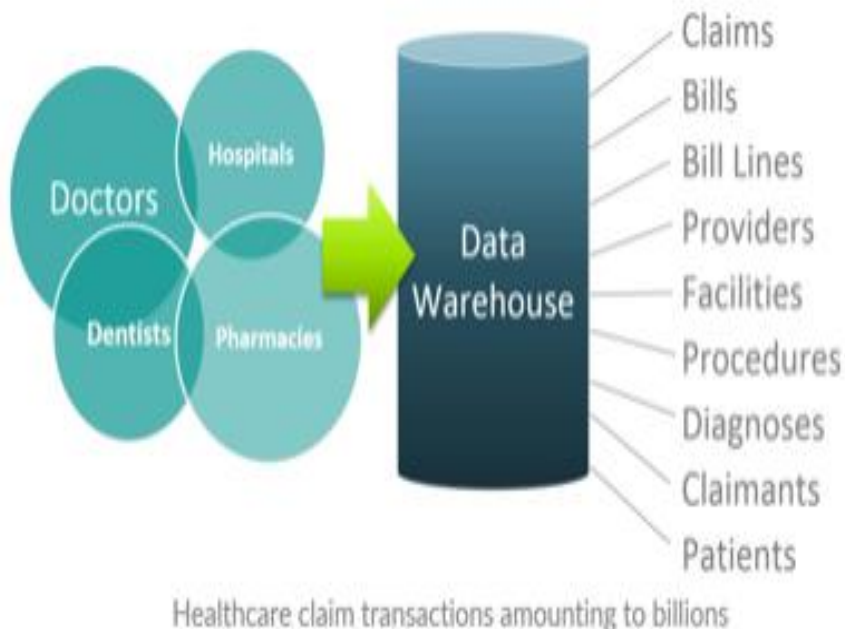
Fraud Detection

Health Insurance Company

- 130,000 policy holders
- Fraud Investigator's Workbench
- Claimant Fraud, Provider Fraud, Vendor Fraud
- Real-time analytics comparison, trends, graphs, exports
 - Build a case for trial

Search & Big Data Used For:

- Massive content merge & de-normalization
- To create "Red flag" data sets for suspicious activity
- Compute key fraud indicator statistics





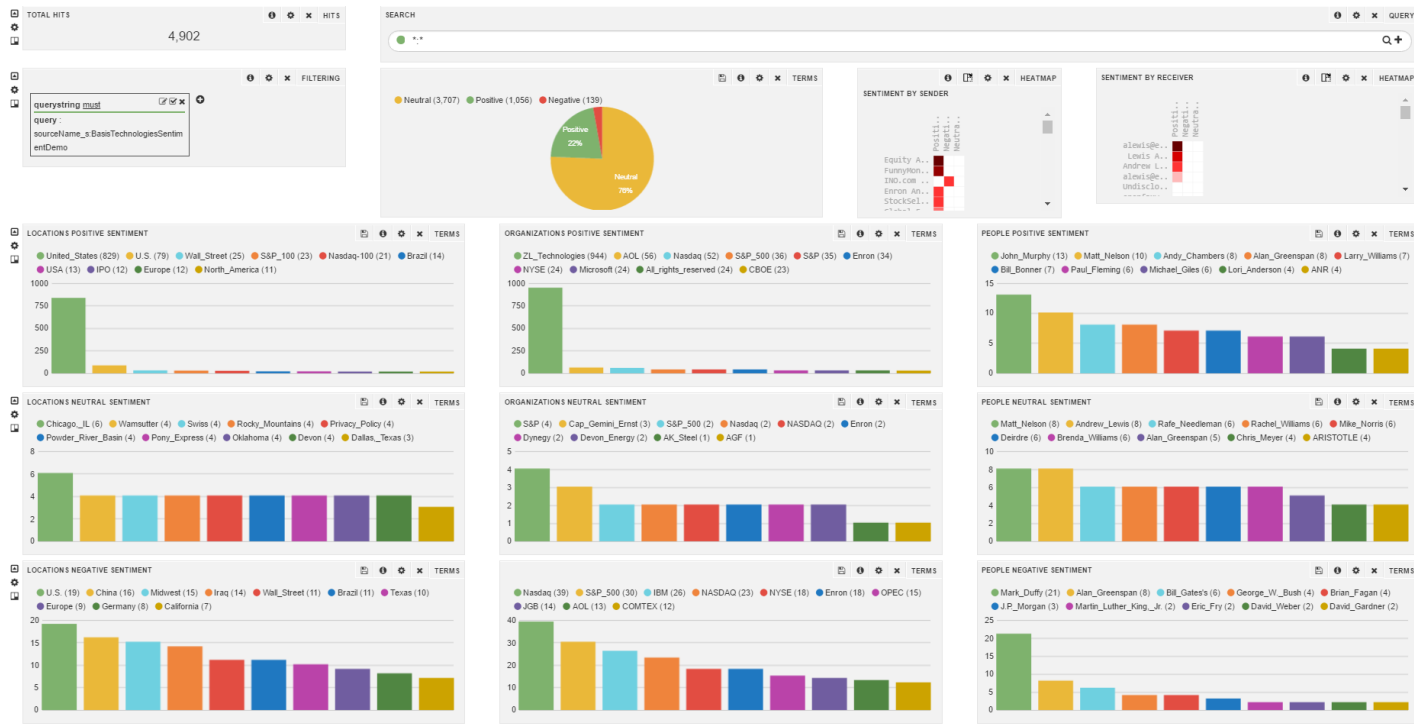
Insider Threat Detection

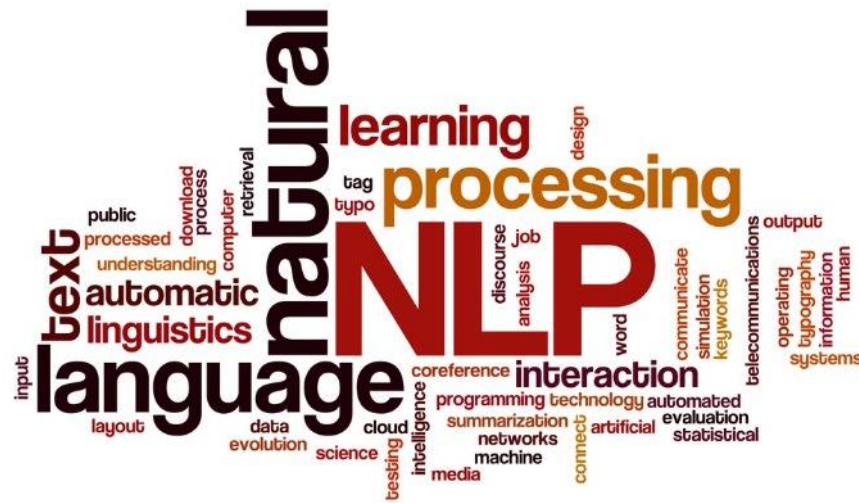
Insider Threat Detection

- Insider trading
 - Non-compliance in Financial services sector
 - Leaks of trade secrets
 - Customer / patient data breaches
 - Leaks of highly sensitive government intelligence
- 



Sentiment Dashboard – with Sentiment Analysis





Customer Data Analytics - Financial Services

European Bank

- Large European bank - 12 million customers, 3.6bn Euro revenue in 2016
- NLP required for a number of dialects
- Available to staff and customers across Products, Email, Transactions and Customer data
- Pattern matching and entity extraction over a high number of cases to determine the intention of the query
- Determine priority in the search (messages, transactions, ...)
- Interpret dates, names, and other entities
- Guide the user to relevant pages
- Highly efficient and scalable

Search and Big Data – Natural Language Processing



The image shows a Google search interface. The search bar contains the text "who was the us president when the angels won the world series". Below the search bar, the "All" tab is selected. The search results show "About 51,900,000 results (1.39 seconds)". A privacy reminder banner from Google is displayed, with "REMIND ME LATER" and "REVIEW" buttons. The main result is for "United States of America / President (2002)", featuring the name "George W. Bush" and a portrait of him. A "Quotes and overview" link is visible at the bottom of the result card, along with a "Feedback" link.

Google

who was the us president when the angels won the world series

All Images Videos Shopping News More Settings Tools

About 51,900,000 results (1.39 seconds)

A privacy reminder from Google

REMIND ME LATER REVIEW

United States of America / President (2002)

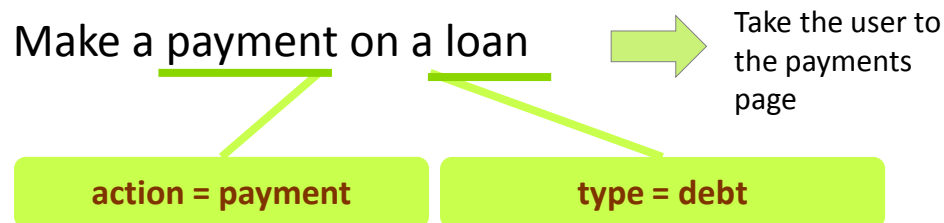
George W. Bush

Quotes and overview

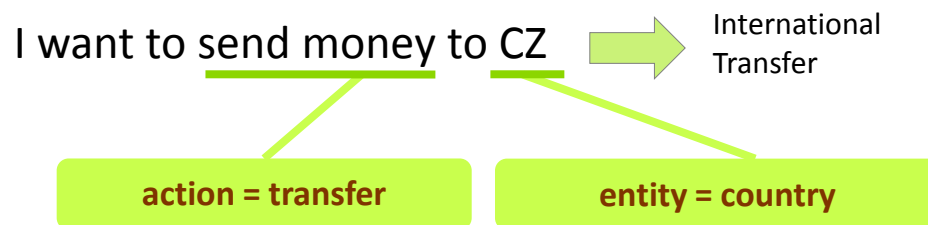
Feedback

Natural Language Processing – Finance Sector Customer

- Understanding queries



“How much did I spend in X restaurant last month?”



“Compare my debits in May to debits in June”