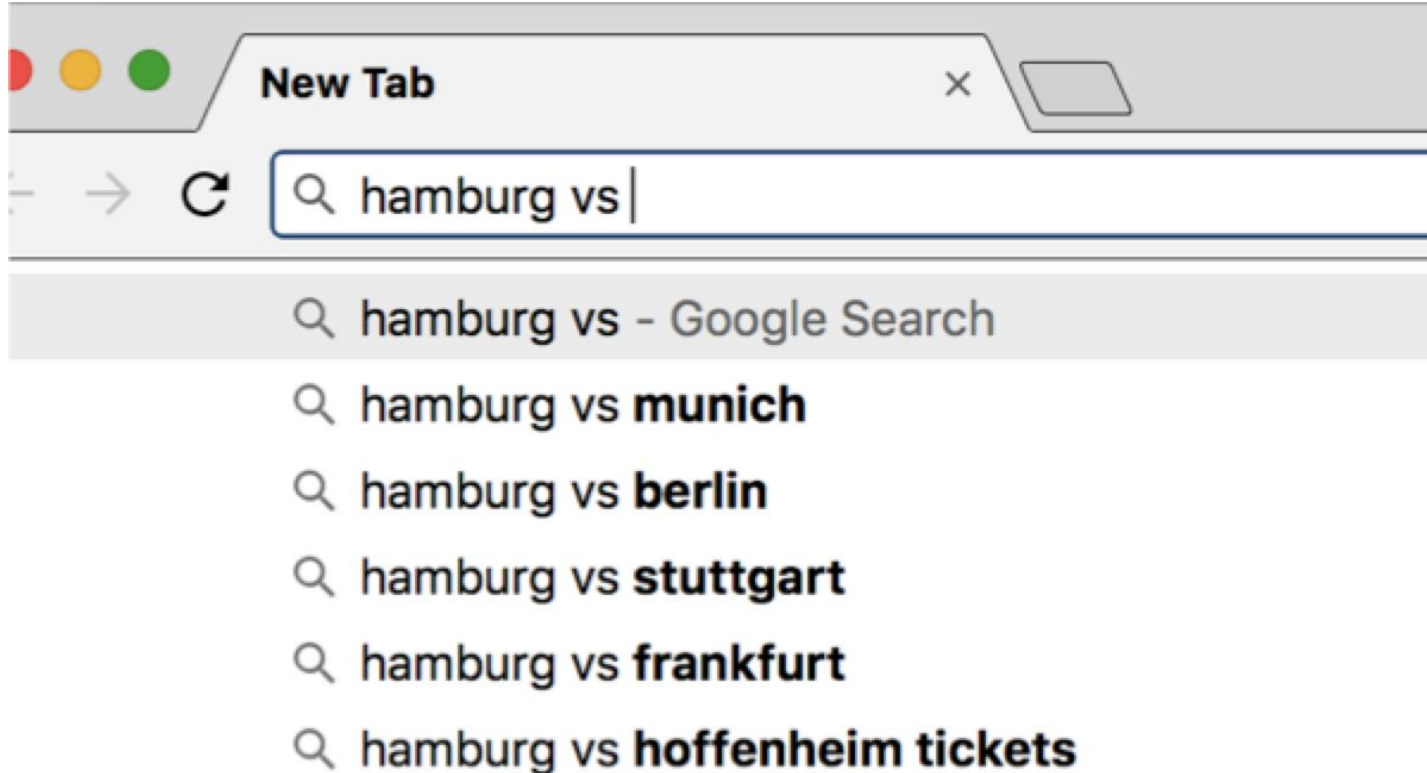







Building from scratch a comparative argumentative machine

Alexander Panchenko, University of Hamburg

People like to compare stuff



People like to compare stuff

					
	This item Apple MQAD22D/A iPhone X 14,7 cm (5,8 Zoll), 64GB, 12MP Kamera, Auflösung 2436 x 1125 Pixel Silber	Apple MQJ8L22D/A iPhone 8 Plus 13,94 cm (5,5 Zoll), 64GB, 12MP Kamera, Auflösung 1920 x 1080 Pixel Space Grau	Apple MQG4H22D/A iPhone 8 11,94 cm (4,7 Zoll), 64GB ROM, 12MP Kamera Silber	Apple MQJMH22D/A iPhone 8 Plus 13,94 cm (5,5 Zoll), 64GB, 12MP Kamera, Auflösung 1920 x 1080 Pixel Silber	Apple MQJN22D/A iPhone 8 Plus 13,94 cm (5,5 Zoll), 64GB, 12MP Kamera, Auflösung 1920 x 1080 Pixel Gold
	Add to Basket	Add to Basket	Add to Basket	Add to Basket	Add to Basket
Customer Rating	★★★★☆ (71)	★★★★☆ (98)	★★★★☆ (52)	★★★★★ (8)	★★★★☆ (3)
Price	EUR 947.00	EUR 794.00	EUR 696.00	EUR 797.00	EUR 817.00
Shipping	EUR 11.98	EUR 11.98	FREE Shipping	EUR 11.98	FREE Shipping
Sold By	Bonnes Electroniques	Bonnes Electroniques	Turbado Deutschland	Bonnes Electroniques	Turbado Deutschland
durchschnittliche Gesprächsdauer	21 hours	21 hours	14 hours	21 hours	21 hours
Battery Cell Composition	Lithium-Ionen	Lithium-Ionen	Lithium-Ionen	Lithium-Ionen	Lithium-Ionen
Colour	Silver	Space Grey	Silver	Silver	Gold
Connectivity Technology	Bluetooth, WLAN, Infrarot	Bluetooth, WLAN, Infrarot	Bluetooth, WLAN, Infrarot	Bluetooth, WLAN, Infrarot	Bluetooth, WLAN, Infrarot
Display Resolution Max	2436x1125	1080p Full HD	1334x750	1920x1080	1920x1080
Display Size	5.8 inches	5.5 inches	4.7 inches	5.5 inches	5.5 inches
Display Technology	OLED	IPS	IPS	IPS	IPS
Item Dimensions	7.09 x 14.36 x 0.77 cm	7.81 x 15.84 x 0.75 cm	6.73 x 13.84 x 0.73 cm	7.81 x 15.84 x 0.75 cm	7.81 x 15.84 x 0.75 cm
Item Weight	174 grams	202 grams	390 grams	202 grams	202 grams
Lithium Battery Energy Content	4,000 Watt Hours	4,000 Watt Hours	4,000 Watt Hours	4,000 Watt Hours	4,000 Watt Hours
Verpackung Lithium-Akku	Batterien/Akkus enthalten	Batterien/Akkus enthalten	Batterien/Akkus enthalten	Batterien/Akkus enthalten	Batterien/Akkus enthalten
Memory Storage Capacity	64 GB	64 GB	64 GB	64 GB	64 GB
Model Year	2017	2017	2017	2017	2017
Operating System	ios	ios	ios	ios	ios
Optical Sensor Resolution	12 Megapixel	12 Megapixel	12 Megapixel	12 Megapixel	12 Megapixel

People like to compare stuff

Ruby programs versus Python 3

all other Ruby programs & measurements

by benchmark task performance

binary-trees

source	secs	mem	gz	cpu	cpu load			
<u>Ruby</u>	47.66	511,724	1083	137.38	66%	90%	70%	63%
<u>Python 3</u>	93.55	280,624	589	337.74	92%	89%	87%	93%

spectral-norm

source	secs	mem	gz	cpu	cpu load			
<u>Ruby</u>	119.33	49,312	835	461.61	97%	97%	97%	97%
<u>Python 3</u>	180.97	15.876	443	720.51	100%	100%	100%	100%

Example of a user interaction with a comparative argument machine (CAM)

User's question:

“Which programming language should I use for scientific computing: Python or MATLAB? I work in a start-up, where we need to deploy our classifiers as web services. We are a young company and try to cut costs to a minimum.”

CAM's answer:

“In your case, I would suggest Python, as it is open-source. While both languages can be used for scientific computing, Python is much better suited for web development as different frameworks, such as Django, are available.”

Answer can be represented in simpler forms

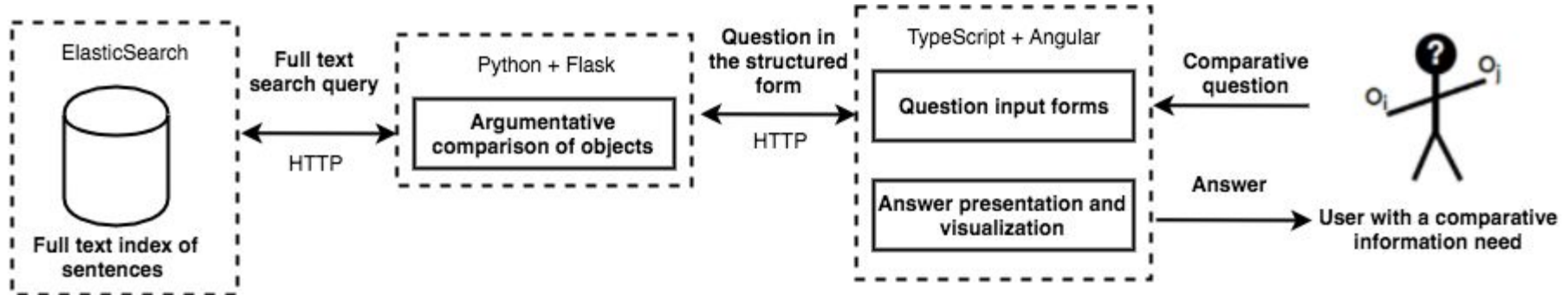
e.g. in a form of a table with pros and cons ...

Python (language)	MATLAB
1. The language is open source.	1. Commercial support is available.
2. Better support of web development: 12 frameworks are available compared to none for MATLAB.	2. Better support of aerospace domain: Matlab is the de-facto standard in this field.
...	...

Your goal will be to develop a simple version of a CAM focusing on the human-computer interaction part (GUI, ...).

Building from scratch a simple yet functional comparative argumentative machine

Structure of the system you need to develop:



Technologies overview

- **Frontend:** Angular 4.0 + TypeScript language
 - Mostly on your own to study
- **Backend:** Python 3.7 + ElasticSearch
 - Can provide support here
 - Flask
 - Requests
- **Git + GitHub.com**
 - Questions only via issues, not email
 - Communications via the bug-tracker
- If you do not have your favourite environment, we suggest to use Microsoft **Visual Studio Code** (not to be confused with the “big” Visual Studio).

Input user interface

Comparative Argumentative Machine

Contacts

Publications

Structured Input

First object

Enter the first object here, e.g. Windows

vs

Second object

Enter the second object here, e.g. Linux

Aspect

Enter aspect here, e.g. Price

Importance of the aspect

★☆☆☆☆

Aspect

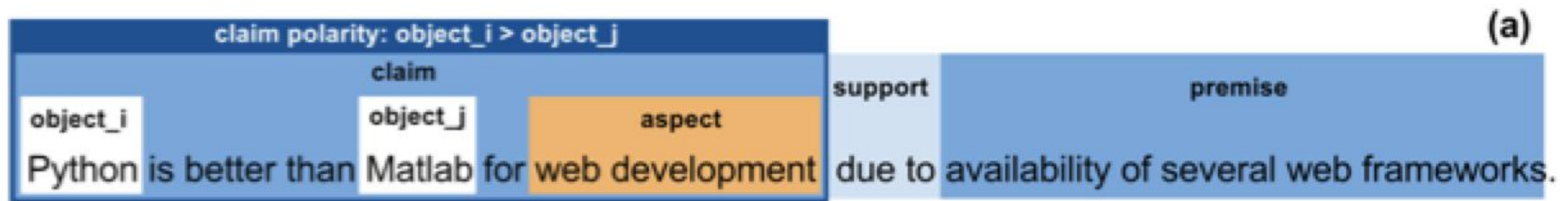
Enter aspect here, e.g. open source

★★★★☆

Compare!

Comparing the objects

Just use a full text index to find co-occurrences of the objects ...



Thank you!
Questions?