

HOME > SPEAKERS > LAZARINA STOY

Lazarina Stoy

Organic Search & Data Consultant, Freelance



When to use Machine Learning Models in SEO and which ones to use

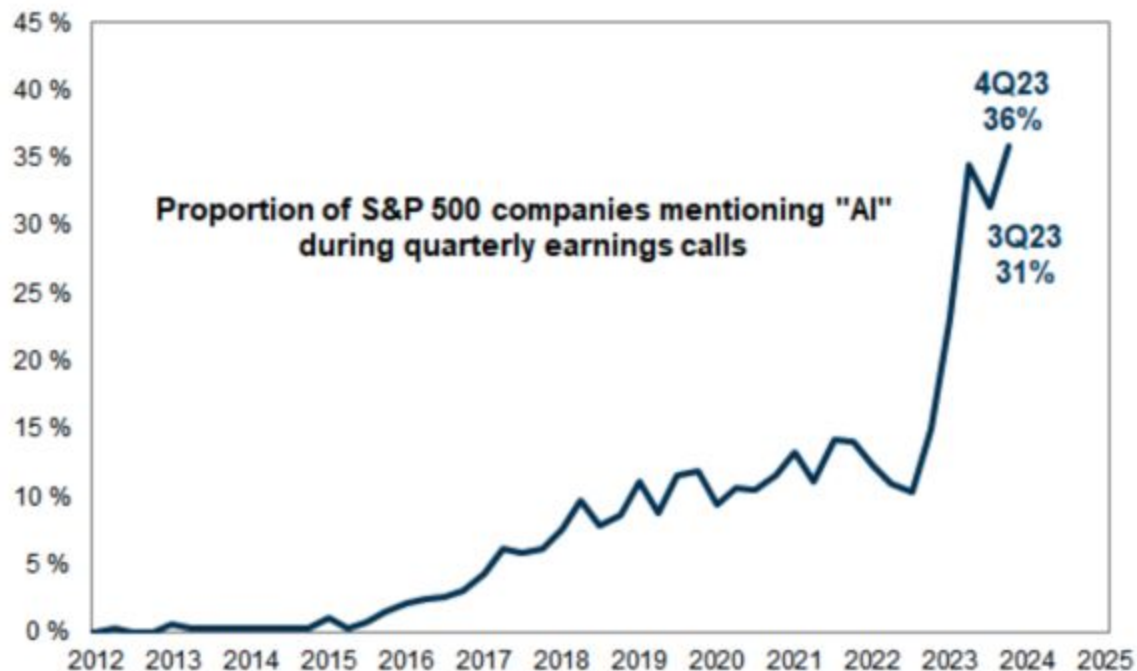


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MLFORSEO
machine learning for SEO

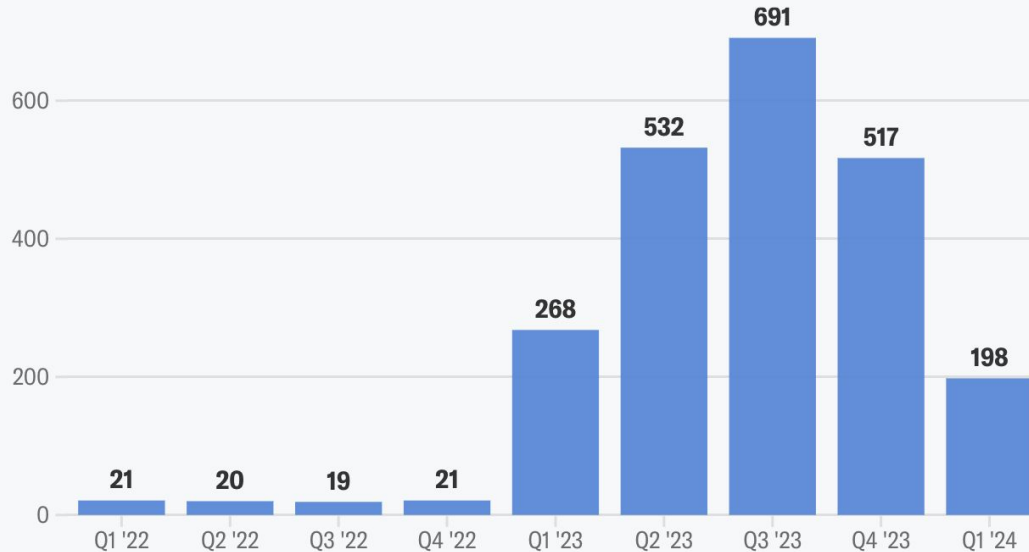
Exhibit 2: Mentions of AI on S&P 500 quarterly earnings calls



Source: Goldman Sachs Global Investment Research

AI IS BEING MENTIONED LESS

Number of times "AI," "machine learning," or "generative AI" were mentioned on quarterly corporate earnings calls



SOURCE: BLOOMBERG, APOLLO CHIEF ECONOMIST TORSTEN SLØK •
(DISCLOSURE: YAHOO IS OWNED BY APOLLO GLOBAL MANAGEMENT.)

yahoo!finance







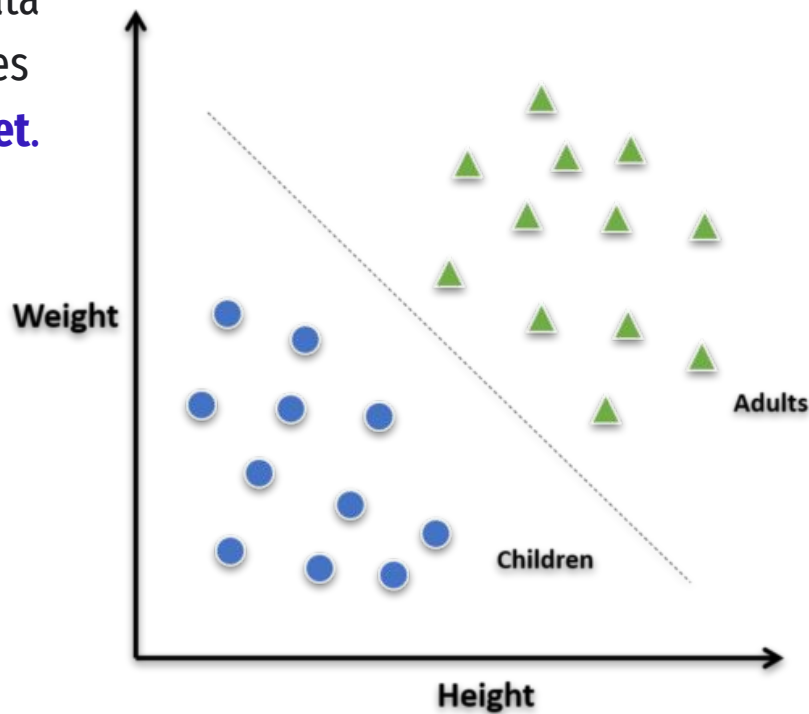


How well do you know what your content is about?

let's talk about

clustering and classification

Classification sorts data into specific categories using a labeled dataset.

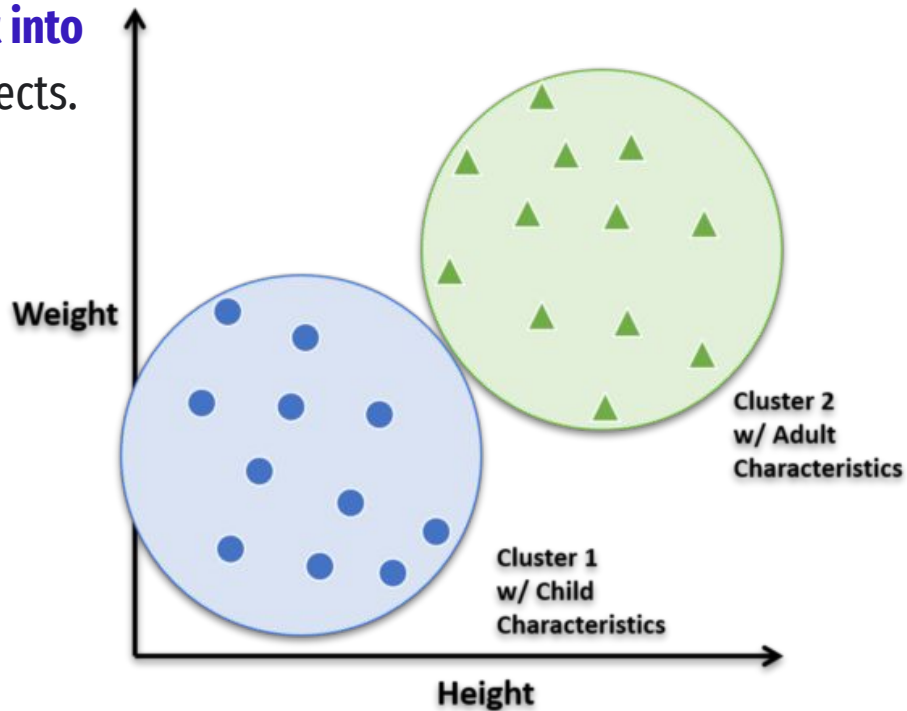


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Clustering is partitioning an **unlabeled dataset into groups** of similar objects.

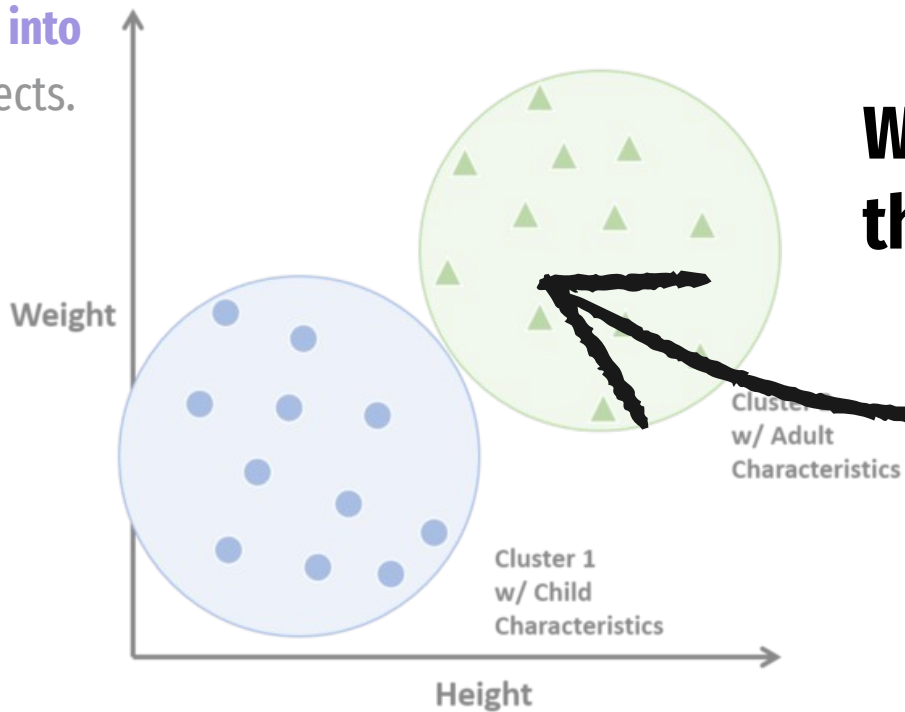


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Clustering is partitioning an **unlabeled dataset into groups** of similar objects.



We'll go back to this in a moment.

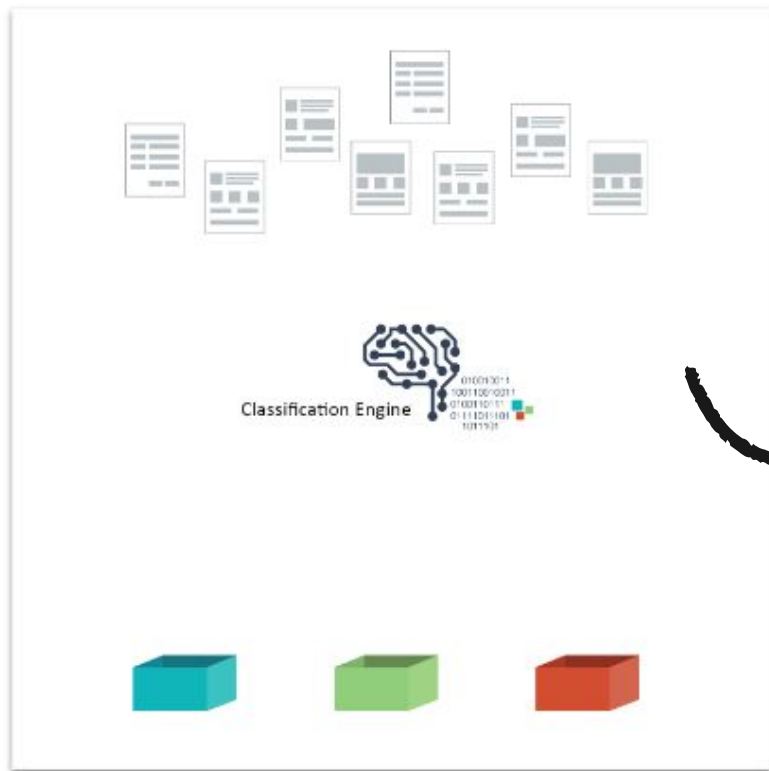


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How important is classification, *really*?



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With Google's Natural Language API, you can **classify** documents in **1,300+** predefined categories



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Text Classification

How to do Text Classification with Google's Natural Language API in Google Sheets (Apps Script)

Lazarina Stoy. · Mar 27, 2024

Process will take no more than 20 minutes



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Text Classification in Google Sheets with Google Cloud Natural Language API - By Lazarina Stoy f...

File Edit View Insert Format Data Tools Extensions Help



100%



123

Arial



10



2:999

https://www.bbc.com/news/world-europe-68376700

A

B

C

1

URL

Content

Classification Label

Confidence

2

https://www.bbc.com/news/world-europe-68376700

The blind Ukrainian amputee whose wife's voice kept him alivePublished11 h

3

https://www.bbc.com/news/world-europe-68255490

Exhausted Ukraine struggles to find new men for front linePublished12 Febr

4

https://www.bbc.com/news/world-us-canada-68395414

South Carolina primary: Donald Trump easily defeats Nikki Haley in her hom

5

https://www.bbc.com/news/entertainment-arts-68362810

Kim Petras on sexual liberation and fighting TikTokPublished10 hours agoSh

6

https://www.bbc.com/news/entertainment-arts-68395354

SAG Awards red carpet 2024: From Margot Robbie to Emma StonePublishe

7

https://www.bbc.com/news/entertainment-arts-68395355

SAG Awards 2024: Oppenheimer dominates ahead of OscarsPublished8 ho

8

https://www.bbc.com/news/world-middle-east-68395173

US and UK carry out fresh strikes on Houthi targets in YemenPublished12 ho

9

https://www.bbc.com/news/uk-scotland-glasgow-west-67980670

Inside the long-abandoned tunnel beneath the ClydePublished2 hours agoSi

10

https://www.bbc.com/news/world-europe-68322527

Ukraine war: Is Avdiivka's fall a sign Russia is turning the tide?Published17 f

11

https://www.bbc.com/news/uk-wales-68210255

Travel: How a £525 bet gave birth to your morning commutePublished10 h

12

https://www.bbc.com/news/world-europe-68384341

Two years into Russia's invasion, exhausted Ukrainians refuse to give upPubl

13

https://www.bbc.com/news/world-europe-68393412

Anthill resident"I'm no politician," confesses Valeriy, a man in his 80s perche

14

https://www.bbc.com/news/entertainment-arts-68391330

Authorities return body of Alexei Navalny to mother 8 days after death Publish

15

https://www.bbc.com/news/world-asia-68378651

Wendy Williams thanks fans for support after dementia and aphasia diagnos

16

https://www.bbc.com/news/world-europe-68395030

Japan naked festival: Women join Hadaka Matsuri for first timePublished10

17

https://www.bbc.com/news/world-europe-68359252

Alexei Navalny: Dissent is dangerous in Russia, but activists refuse to give u

18

https://www.bbc.com/news/world-europe-68359252

Rosenberg: How two years of war in Ukraine changed RussiaPublished3 da

19

https://www.bbc.com/news/entertainment-arts-68395352

SAG Award winners 2024: The full list of nominees and winsPublished13 ho

20

https://www.bbc.com/news/entertainment-arts-68362811

Stray Kids: How K-Pop took over the global charts in 2023Published3 days a

21

https://www.bbc.com/news/entertainment-arts-68317736

Gareth Edwards: The Creator director on shaking up Hollywood's visual effe

22

https://www.bbc.com/news/newsbeat-68382142

Chuckie: 1Xtra presenter feels R&B has special year aheadPublished1 day a

https://www.bbc.com/news/entertainment-arts-68338730

Alia Bhatt: The young Bollywood star taking on HollywoodPublished2 days a



Working Sheet

Related resources and How-to guide

Count: 254



Enter your URLs
and content



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C10

=analyzeTextClassification(B10)

	A	B	C	D	E
1	URL	Content	Classification Label	Confidence	
2	https://www.bbc.com/news/world-europe-68376700	The blind Ukrainian amputee whose wife's voice kept him alivePublished11 h	/Sensitive Subjects/War & Conflict	0.94400823	
3	https://www.bbc.com/news/world-europe-68255490	Exhausted Ukraine struggles to find new men for front linePublished12 Febru	/Sensitive Subjects/War & Conflict	0.9567586	
4	https://www.bbc.com/news/world-us-canada-68395414	South Carolina primary: Donald Trump easily defeats Nikki Haley in her home	/News/Politics/Campaigns & Elections	0.97098255	
5	https://www.bbc.com/news/entertainment-arts-68362810	Kim Petras on sexual liberation and fighting TikTokPublished10 hours agoSh	/Arts & Entertainment/Celebrities & Entertainment News	0.73509616	
6	https://www.bbc.com/news/entertainment-arts-68362810	SAG Award winners 2024: The full list of nominees and winsPublished3 days	/Arts & Entertainment/Celebrities & Entertainment News	0.96840936	
7	https://www.bbc.com/news/entertainment-arts-68362810	SAG Award winners 2024: The full list of nominees and winsPublished3 days	/Arts & Entertainment/Entertainment Industry/Film & TV Industry	1	
8	https://www.bbc.com/news/world-middle-east-68395414	US and UK carry out fresh strikes on Houthi targets in YemenPublished12 h	/Sensitive Subjects/War & Conflict	1	
9	https://www.bbc.com/news/uk-scotland-glasgow-west-679806	Inside the long-abandoned tunnel beneath the ClydePublished2 hours agoSt	/Reference/Humanities/History	0.46487474	
10	https://www.bbc.com/news/world-europe-68322522	Ukraine war: Is Avdiivka's fall a sign Russia is turning the tide?Published17 F	/Sensitive Subjects/War & Conflict	0.97672516	
11	https://www.bbc.com/news/world-europe-68322522	Ukraine war: Is Avdiivka's fall a sign Russia is turning the tide?Published17 F	/Travel & Transportation/Transportation/Long Distance Bus & Rail	0.824742	
12	https://www.bbc.com/news/world-europe-68384341	Anthill resident "I'm no politician," confesses Valeri, a man in his 80s perched	/Sensitive Subjects/War & Conflict	0.96695495	
13	https://www.bbc.com/news/world-europe-68393412	Authorities return body of Alexei Navalny to mother 8 days after deathPublish	/News/Politics/Other	0.8510177	
14	https://www.bbc.com/news/entertainment-arts-68391330	Wentz Williams thanks fans for support after dementia and aphasia diagnosi	/Arts & Entertainment/Celebrities & Entertainment News	0.9236957	
15	https://www.bbc.com/news/world-asia-68391330	Ukraine war: Is Avdiivka's fall a sign Russia is turning the tide?Published17 F	/People & Society/Religion & Belief	0.95823807	
16	https://www.bbc.com/news/world-europe-68391330	Ukraine war: Is Avdiivka's fall a sign Russia is turning the tide?Published17 F	/News/Politics/Other	1	
17	https://www.bbc.com/news/world-europe-68359252	Rosenberg: How two years of war in Ukraine changed RussiaPublished3 days	/Sensitive Subjects/War & Conflict	0.95304227	
18	https://www.bbc.com/news/entertainment-arts-68395352	SAG Award winners 2024: The full list of nominees and winsPublished3 days	/Arts & Entertainment/Entertainment Industry/Film & TV Industry	1	
19	https://www.bbc.com/news/entertainment-arts-68362811	Stray Kids: How K-Pop took over the global charts in 2024Published3 days	/Arts & Entertainment/Music & Audio/World Music	0.99367684	
20	https://www.bbc.com/news/entertainment-arts-68317736	Gareth Edwards: The Creator director on shaking up Hollywood's visual fic	/Arts & Entertainment/Movies/Science Fiction & Fantasy Films	0.9095848	
21	https://www.bbc.com/news/newsbeat-68382142	Chuckle: 1Xtra presenter feels R&B has special year aheadPublished1 day	/Arts & Entertainment/Music & Audio/Urban & Hip-Hop	0.8976116	
22	https://www.bbc.com/news/entertainment-arts-68338730	Alia Bhatt: The young Bollywood star taking on HollywoodPublished2 days	/Arts & Entertainment/Movies/Bollywood & South Asian Film	0.98757404	



Working Sheet

Related resources and How-to guide



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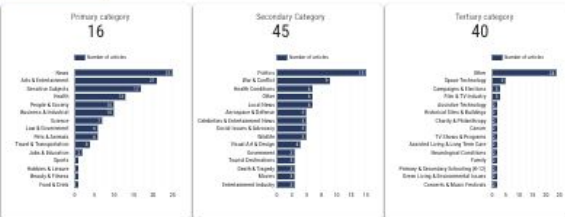
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at a glance

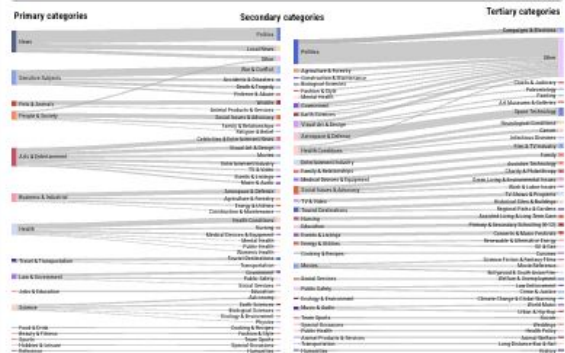
Executive Summary

At MFORSEO 120 articles are contained in the interface. There are 16 unique primary categories, 45 unique secondary categories, 40 unique tertiary categories, and 2 unique quaternary categories.



playground

Click on any of the primary secondary or tertiary categories to filter the charts on the page, and understand the structure of content categories, and related categories.



Use the filters to identify content groups per URL, or pages that contain a certain keyword. You can also filter the page per classification label, using REGEX to view multiple content groups, or filter out low confidence categories.

URL	Classification Label	Confidence	Primary category	Secondary category	Tertiary category	Quaternary category
https://www.mforseo.com/seo/seo-optimization/	News/Politics/Campaigns & Events	87%	News	Politics	Campaigns & Events	not
https://www.mforseo.com/seo/seo-optimization/	News/Politics/Other	88%	News	Politics	Other	not
https://www.mforseo.com/seo/seo-optimization/	News/Politics/Campaigns & Events	90%	News	Politics	Campaigns & Events	not
https://www.mforseo.com/seo/seo-optimization/	DevOps Subjects/Blue & Confid	100%	DevOps Subjects	Blue & Confid	not	not
https://www.mforseo.com/seo/seo-optimization/	Jobs & Employment/Visual for A.S.	92%	Jobs & Employment	Visual A.S. & Design	Feeling	not
https://www.mforseo.com/seo/seo-optimization/	News/Politics/Other	100%	News	Politics	Other	not
https://www.mforseo.com/seo/seo-optimization/	News/Politics/Other	80%	News	Politics	Other	not
https://www.mforseo.com/seo/seo-optimization/	DevOps Subjects/Blue & Confid	91%	DevOps Subjects	Blue & Confid	not	not
https://www.mforseo.com/seo/seo-optimization/	DevOps Subjects/Blue & Confid	90%	DevOps Subjects	Blue & Confid	not	not
https://www.mforseo.com/seo/seo-optimization/	DevOps Subjects/Blue & Confid	90%	DevOps Subjects	Blue & Confid	not	not

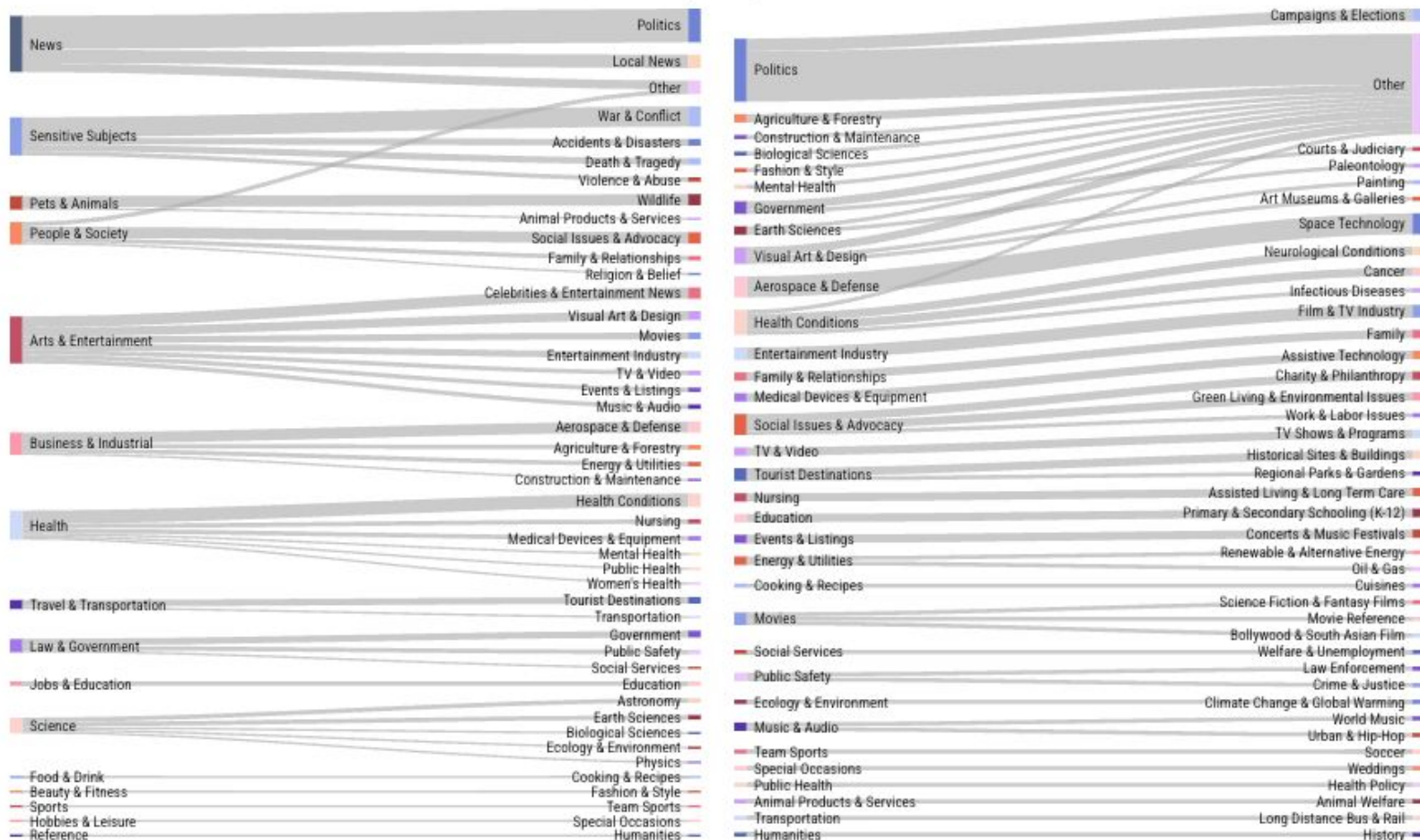
Plug-and-play template in Looker Studio



Primary categories

Secondary categories

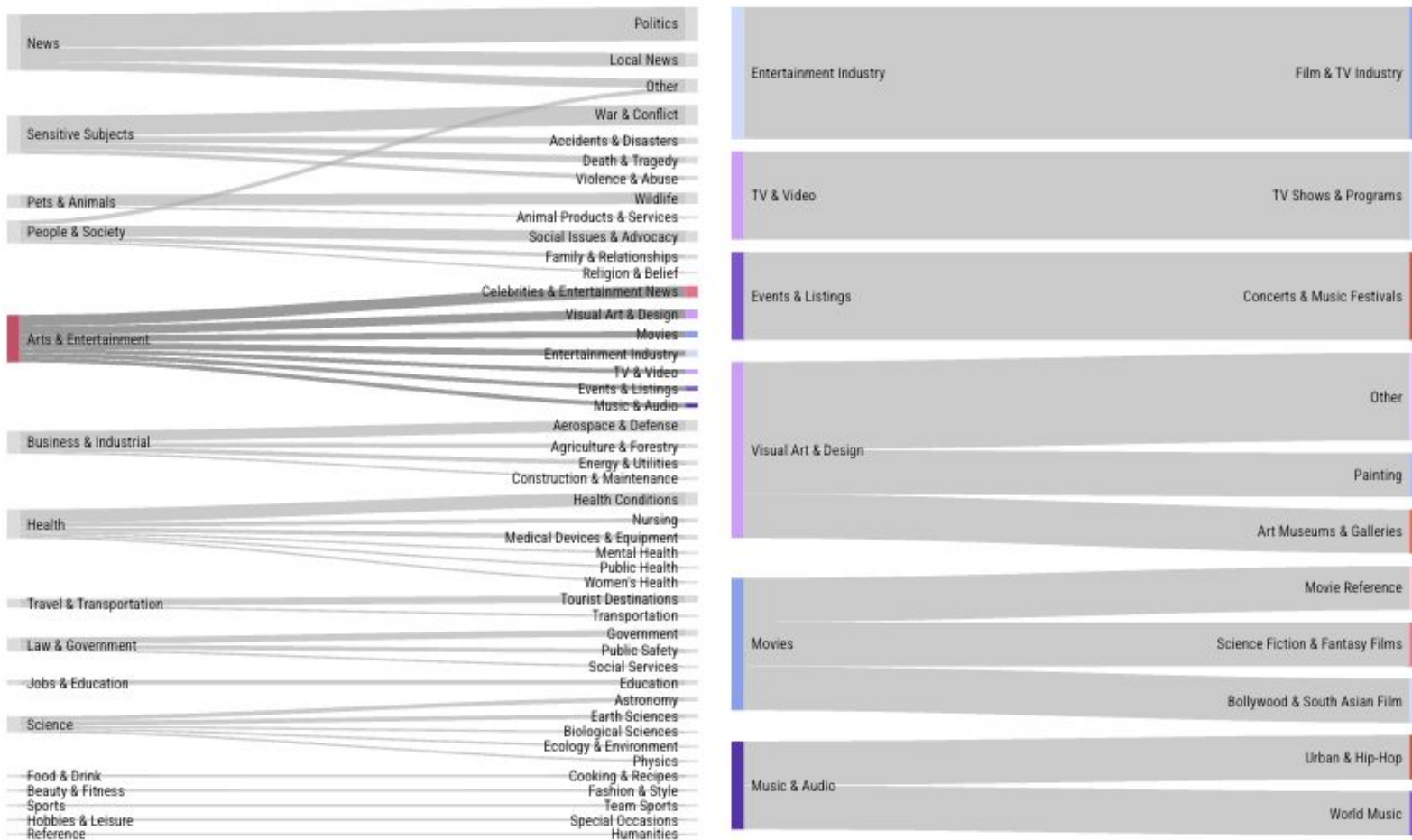
Tertiary categories



Primary categories

Secondary categories

Tertiary categories



🔍 Use the filters to identify content groups per URL, or pages that contain a certain keyword. You can also filter the page per classification label, using REGEX to view multiple content groups, or filter out low-confidence categories.

URL

Equals



Enter a value

Content

Equals



Enter a value

Classification Label

Equals



Enter a value

Confidence

40%



100%

URL ▾	Classification Label	Confidence	Primary category	Secondary Category	Tertiary category	Quaternary category
https://www.bbc.com/news/world-us-canada-68395414	/News/Politics/Campaigns & Electio..	97%	News	Politics	Campaigns & Elections	null
https://www.bbc.com/news/world-us-canada-68388154	/News/Politics/Other	88%	News	Politics	Other	null
https://www.bbc.com/news/world-us-canada-68387546	/News/Politics/Campaigns & Electio..	96%	News	Politics	Campaigns & Elections	null
https://www.bbc.com/news/world-middle-east-68395173	/Sensitive Subjects/War & Conflict	100%	Sensitive Subjects	War & Conflict	null	null
https://www.bbc.com/news/world-europe-guernsey-68380482	/Arts & Entertainment/Visual Art & D..	62%	Arts & Entertainment	Visual Art & Design	Painting	null
https://www.bbc.com/news/world-europe-68395030	/News/Politics/Other	100%	News	Politics	Other	null
https://www.bbc.com/news/world-europe-68393412	/News/Politics/Other	85%	News	Politics	Other	null
https://www.bbc.com/news/world-europe-68384341	/Sensitive Subjects/War & Conflict	97%	Sensitive Subjects	War & Conflict	null	null
https://www.bbc.com/news/world-europe-68359252	/Sensitive Subjects/War & Conflict	95%	Sensitive Subjects	War & Conflict	null	null
https://www.bbc.com/news/world-europe-68322527	/Sensitive Subjects/War & Conflict	98%	Sensitive Subjects	War & Conflict	null	null
https://www.bbc.com/news/world-europe-68248740	/News/Politics/Other	100%	News	Politics	Other	null



With Open AI's GPT4 or ChatGPT, **results are a hit or miss.**



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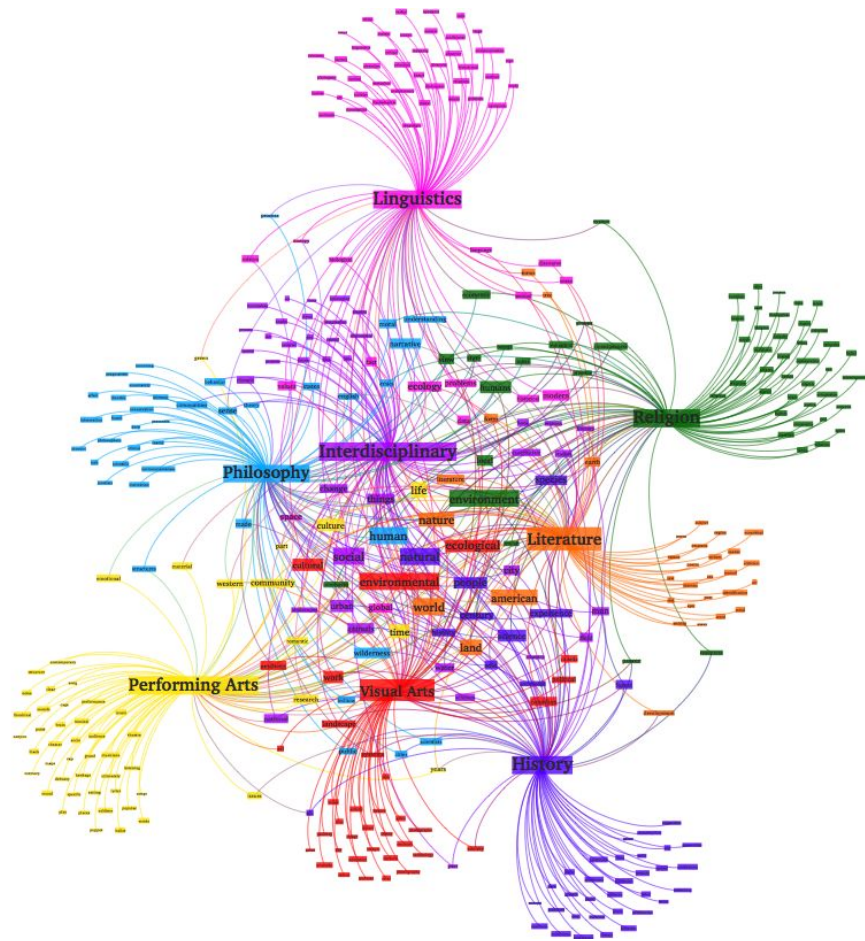
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Model	Benefits	Limitations
Google Cloud Natural Language API	<ul style="list-style-type: none"> • Classify documents in 700+ predefined categories out-of-the-box • Predictable categories • Controlled training of model • Accuracy indicated • Great for scale and benchmarking • Can be custom-trained on a dataset for better accuracy • Great for large datasets of long documents 	<ul style="list-style-type: none"> • Can't be used for uses outside of the main task, so no clustering only classification • Can't be given custom class lists (unless you use AutoML) • Requires time and data for custom training models with AutoML
GPT-4	<ul style="list-style-type: none"> • Can map the information to a label or assign a plausible such, provided it has this information in its training set – meaning can (in theory) be used for both clustering and classification • Great for small projects, one-offs in controlled environments – e.g., assisting in task completion 	<ul style="list-style-type: none"> • Scalability issues • Not suitable for large datasets or long documents • Non-predictable results • Direction might not followed when it comes to classification if you provide specific labels • Not trained for the task, meaning not as good at it • Limited knowledge, making it unsuitable for niche industries • Results worsen on bigger datasets • Prone to hallucinations



Do you *need* content clustering?



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LDA is great (even though it's a bit old)



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Topics

gene 0.04
dna 0.02
genetic 0.01
...

life 0.02
evolve 0.01
organism 0.01
...

brain 0.04
neuron 0.02
nerve 0.01
...

data 0.02
number 0.02
computer 0.01
...

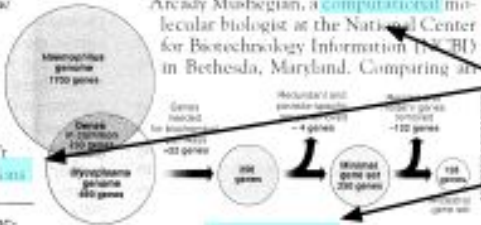
Documents

Seeking Life's Bare (Genetic) Necessities

COLD SPRING HARBOR, NEW YORK—How many **genes** does an **organism** need to **survive**? Last week at the genome meeting here,* two genome researchers with radically different approaches presented complementary views of the basic genes needed for **life**. One research team, using **computer** analyses to compare known **genomes**, concluded that today's **organisms** can be sustained with just 250 genes, and that the earliest life forms required a mere 128 **genes**. The other researcher mapped genes in a simple parasite and estimated that for this organism, 800 genes are plenty to do the job—but that anything short of 100 wouldn't be enough.

Although the numbers don't match precisely, those **predictions**

"are not all that far apart," especially in comparison to the 75,000 **genes** in the human genome, notes Siv Andersson of Uppsala University in Sweden. But arriving at the 800 number. But coming up with a consensus answer may be more than just a **simple numbers** matter, particularly as more and more **genomes** are completely mapped and sequenced. "It may be a way of organizing any newly **sequenced genome**," explains Arcady Mushegian, a **computational** molecular biologist at the National Center for Biotechnology Information (NCBI) in Bethesda, Maryland. Comparing an

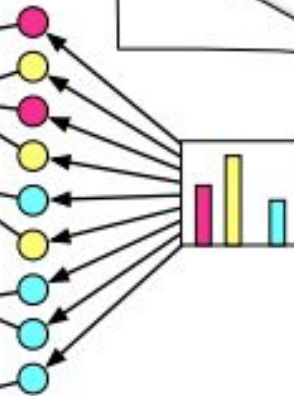


* Genome Mapping and Sequencing, Cold Spring Harbor, New York, May 8 to 12.

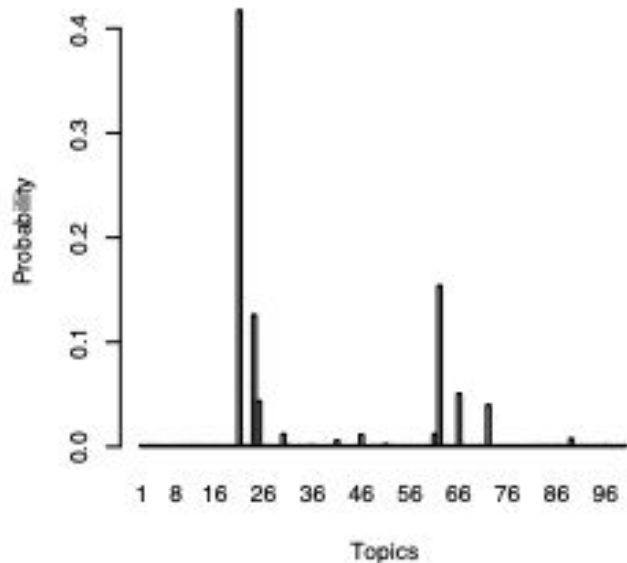
Stripping down. Computer analysis yields an estimate of the minimum modern and ancient genomes.

SCIENCE • VOL. 272 • 24 MAY 1996

Topic proportions and assignments



Introduction to Probabilistic Topic Models (Blei, 2012)



“Genetics”	“Evolution”	“Disease”	“Computers”
human	evolution	disease	computer
genome	evolutionary	host	models
dna	species	bacteria	information
genetic	organisms	diseases	data
genes	life	resistance	computers
sequence	origin	bacterial	system
gene	biology	new	network
molecular	groups	strains	systems
sequencing	phylogenetic	control	model
map	living	infectious	parallel
information	diversity	malaria	methods
genetics	group	parasite	networks
mapping	new	parasites	software
project	two	united	new
sequences	common	tuberculosis	simulations



Introduction to Probabilistic Topic Models (Blei, 2012)

LDA emerged to:

- **remove dependency on links** by introducing the “things” concept and topic/term understanding
- enable **computational understanding** of topics and terms and their importance
- highlight that **each page will have multiple different topics or subtopics addressed**, which might be of value to different people and should be understood and surfaced in results



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WATCH THE DETAILS LATER

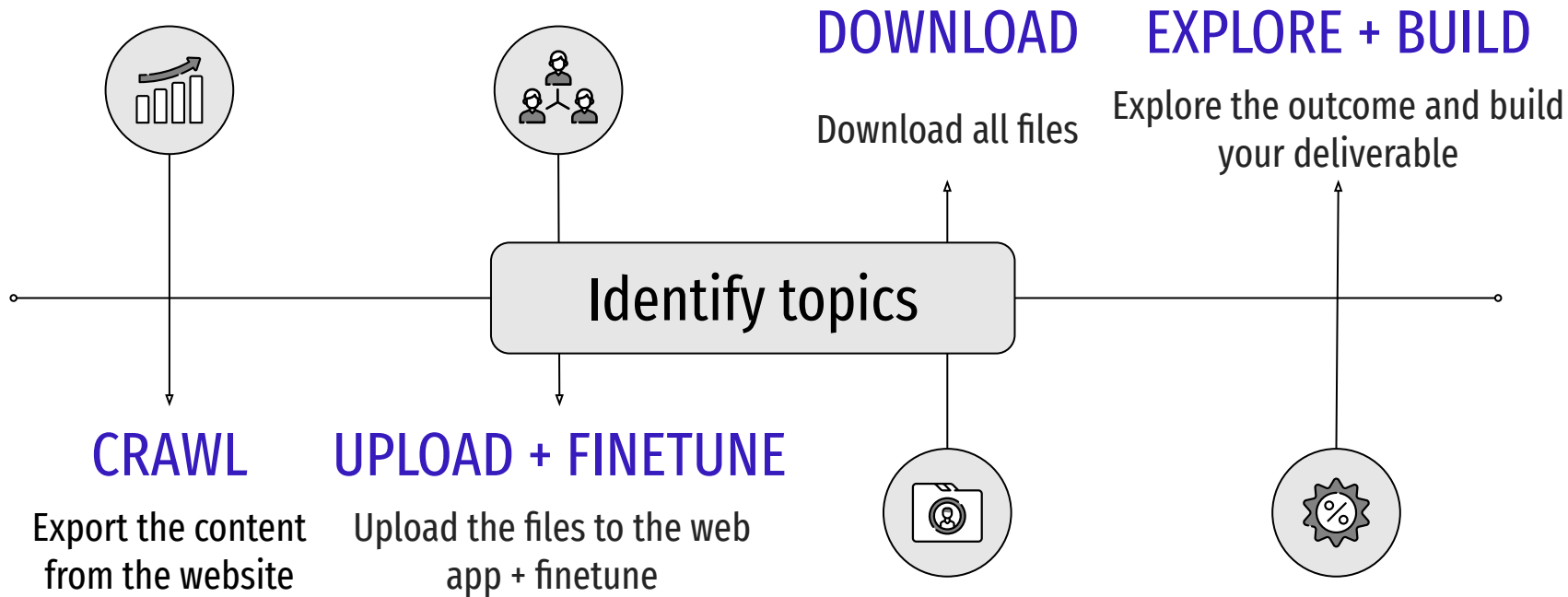
I've recorded a step-by-step tutorial on doing **topic modelling** using a no-code, publicly-available, web-based app using LDA.



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Topic models

Topic models

A	B	C	D	E	F	G	H	I	J	K
	health mental staff workplace home support group working ehl students	corporate volunteering giving purpose social responsibility grawehr stéphanie	nonprofit volunteers time content media support volunteer nonprofits share form	alaya platform data user services users policy information conditions general	csr business social companies strategy responsibility corporate initiatives	volunteering program employees corporate giving programs matching benefits	people company time it's back feel start make mission that's	employees impact engage purpose activities make platform community	engagement employees work team engaged good teams find make virtual	nonprofits season donors carmen amell nonprofit fundraising make strategy story
	0.00%	17.65%	-44.77%		-16.00%	-104.73%	-4.67%	9.29%	-5.99%	
	17.65%	0.00%	-21.13%	-88.64%	-8.61%	-62.86%	-36.37%	-23.42%	27.18%	6.80%
	-44.77%	-21.13%	0.00%	9.88%	-26.01%	-58.78%	12.52%	16.87%	-56.55%	70.50%
		-88.64%	9.88%	0.00%	-30.66%		-157.96%	-53.92%		
	-16.00%	-8.61%	-26.01%	-30.66%	0.00%	60.18%	54.64%	26.11%	-0.59%	-218.54%
	-104.73%	-62.86%	-58.78%		60.18%	0.00%	35.22%	30.17%	-0.59%	-77.01%
	-4.67%	-36.37%	12.52%	-157.96%	54.64%	35.22%	0.00%	28.20%	27.18%	-46.26%
	9.29%	-23.42%	16.87%	-53.92%	26.11%	30.17%	28.20%	0.00%	-1.53%	-40.31%
	-5.99%	27.18%	-56.55%		-0.59%	-0.59%	27.18%	-1.53%	0.00%	-29.35%
		6.80%	70.50%		-218.54%	-77.01%	-46.26%	-40.31%	-29.35%	0.00%

Topic to Topic Similarity ▾

Topic Modelling per Page ▾

Topic to Topic Similarity ▾



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Page Info

Topic models

Content export	Address	normalised title										
			0.00%	0.00%	50.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%
			0.00%	0.00%	1.49%	0.37%	0.00%	20.07%	1.86%	33.09%	0.00%	0.00%
			1.33%	0.00%	2.00%	0.36%	5.74%	18.55%	6.20%	10.51%	7.64%	0.00%
			0.00%	0.00%	0.00%	0.00%	0.60%	14.83%	1.40%	38.48%	1.20%	0.00%
			0.00%	48.53%	0.74%	0.00%	0.00%	0.00%	0.00%	8.09%	4.04%	0.00%
			0.00%	0.00%	9.38%	0.00%	0.00%	0.00%	0.00%	3.13%	0.00%	53.13%
			0.00%	3.51%	15.59%	2.10%	0.86%	2.73%	6.63%	5.22%	0.00%	8.96%
			2.99%	0.48%	4.31%	1.08%	4.55%	1.20%	7.19%	6.23%	15.81%	0.96%
			6.50%	3.58%	3.17%	0.41%	6.81%	7.16%	7.98%	4.35%	15.05%	0.10%
			9.84%	7.81%	9.12%	1.74%	3.91%	0.00%	5.64%	9.41%	2.03%	0.00%
			0.09%	1.29%	0.76%	0.09%	25.68%	5.38%	8.90%	5.47%	4.09%	0.00%
			4.12%	1.17%	9.48%	1.58%	1.37%	2.68%	5.36%	4.53%	0.76%	15.52%
			1.40%	0.97%	7.97%	2.37%	3.47%	4.50%	5.36%	4.81%	1.58%	7.61%
			0.00%	2.53%	27.09%	2.61%	2.61%	0.00%	3.15%	6.45%	2.23%	8.21%
			0.00%	49.14%	0.00%	0.00%	0.00%	0.00%	0.69%	0.00%	9.62%	5.84%
			0.00%	5.18%	8.83%	6.91%	7.49%	1.92%	4.41%	15.36%	0.58%	0.58%
			0.00%	0.00%	43.24%	0.00%	0.00%	0.00%	2.70%	0.00%	0.00%	18.92%
			0.00%	19.63%	8.89%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	32.59%
			0.00%	62.77%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
			7.07%	51.52%	0.00%	0.00%	0.00%	0.00%	0.34%	0.00%	5.39%	1.68%
			4.34%	1.42%	5.54%	0.78%	2.35%	0.28%	10.73%	3.98%	0.57%	13.15%
			0.00%	54.29%	2.86%	2.86%	2.86%	0.00%	0.00%	0.00%	0.00%	0.00%
			1.93%	4.16%	12.01%	1.97%	6.22%	13.46%	4.72%	4.25%	2.19%	0.00%
			2.59%	4.25%	3.22%	0.00%	5.97%	3.14%	7.63%	12.74%	12.50%	0.39%
			2.03%	1.92%	1.05%	0.17%	23.55%	8.31%	14.42%	2.56%	3.43%	0.00%

Topic Modelling per Page ▾



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Selected Topic: 0

Previous Topic

Next Topic

Clear Topic

Slide to adjust relevance metric:(2)

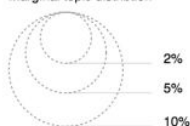
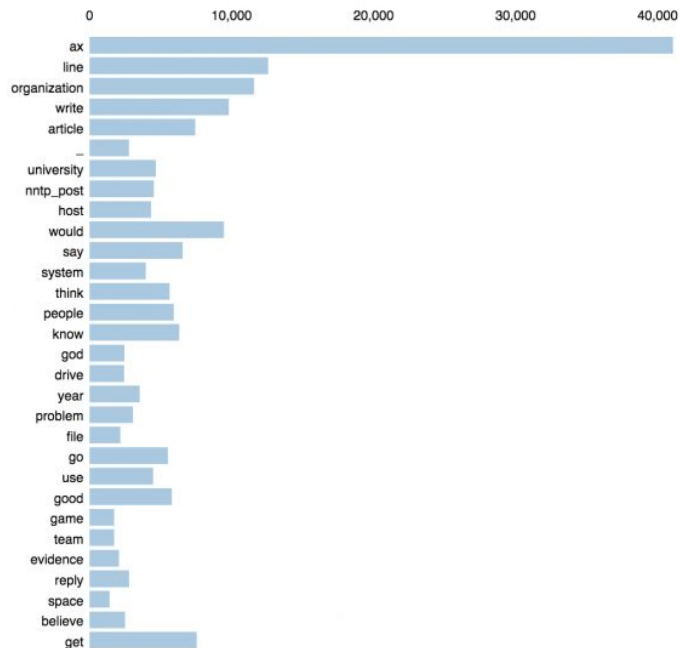
 $\lambda = 1$

0.0 0.2 0.4 0.6 0.8 1

Intertopic Distance Map (via multidimensional scaling)



Marginal topic distribution

Top-30 Most Salient Terms¹

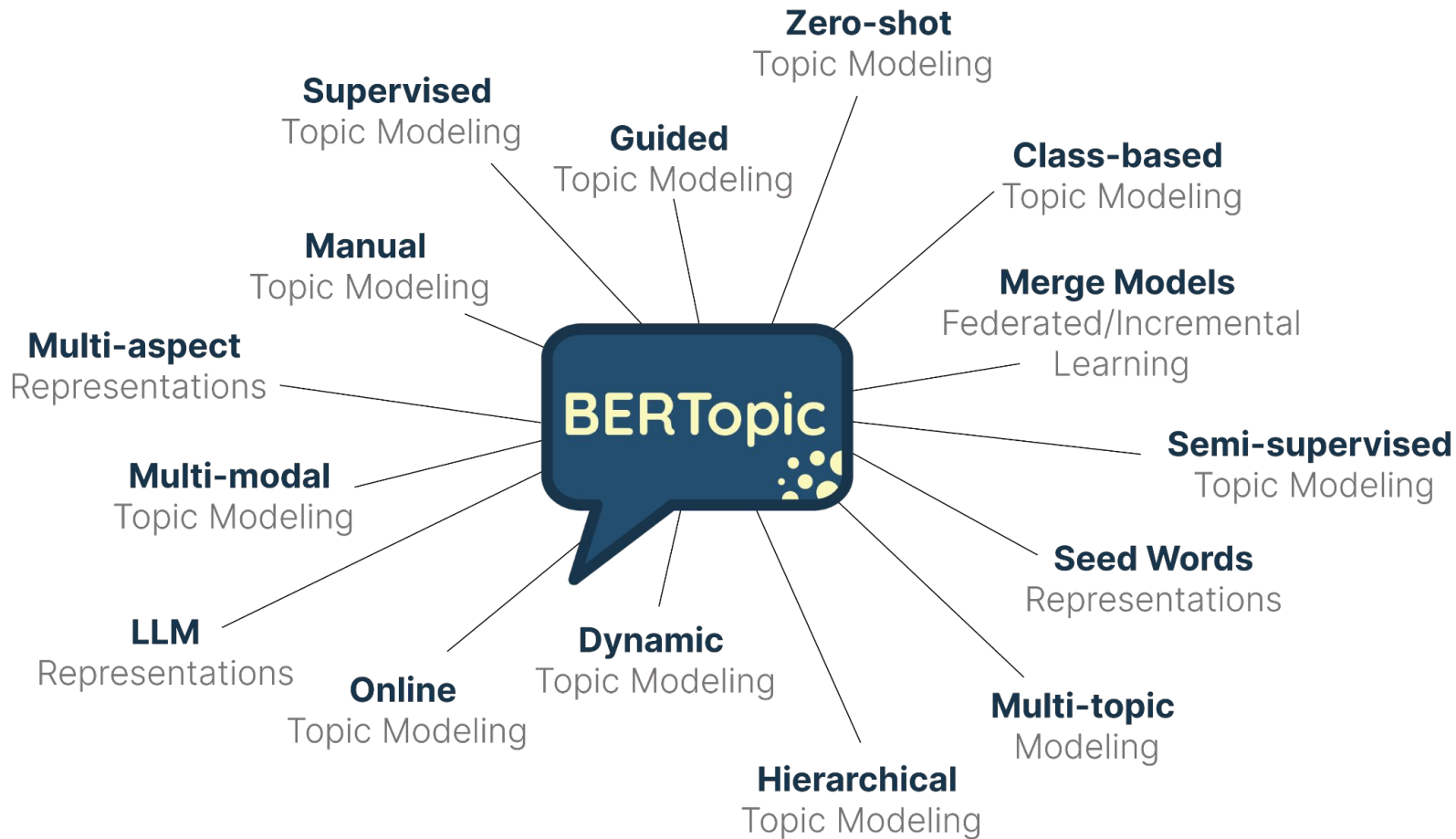
Overall term frequency

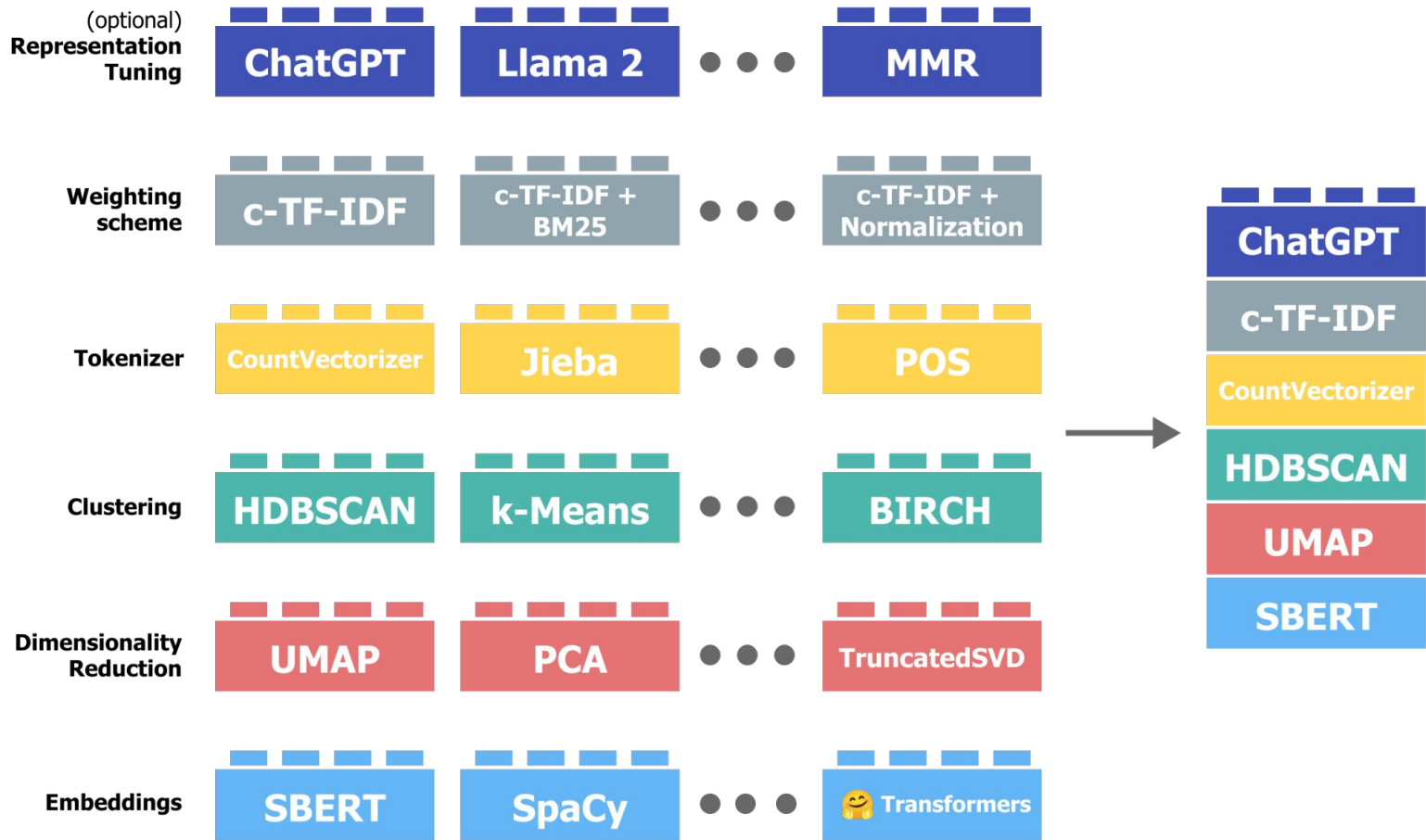
Estimated term frequency within the selected topic

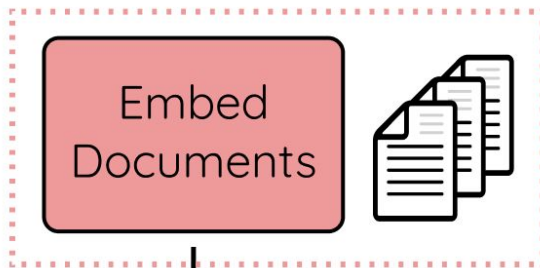
1. $\text{saliency}(\text{term } w) = \text{frequency}(w) * [\sum_t p(t | w) * \log(p(t | w)/p(t))]$ for topics t ; see Chuang et. al (2012)

2. $\text{relevance}(\text{term } w | \text{topic } t) = \lambda * p(w | t) + (1 - \lambda) * p(w | t)/p(w)$; see Sievert & Shirley (2014)

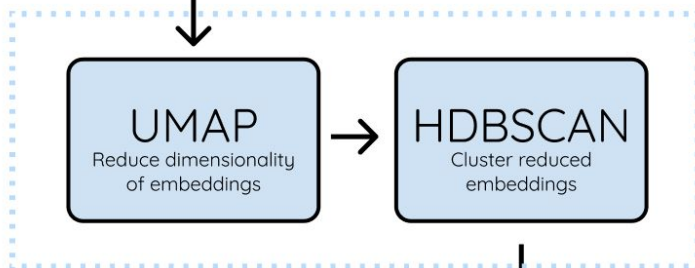
BERTopic is another great alternative





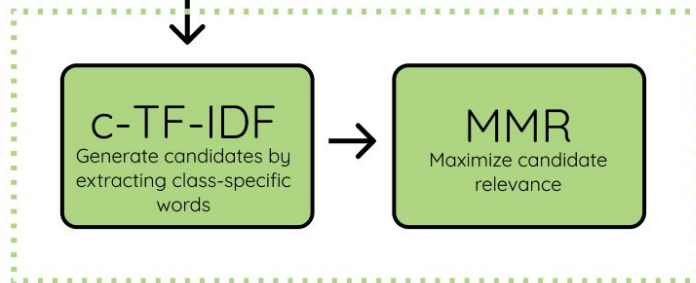


Although BERT is typically used for embedding documents, any embedding technique can be used.



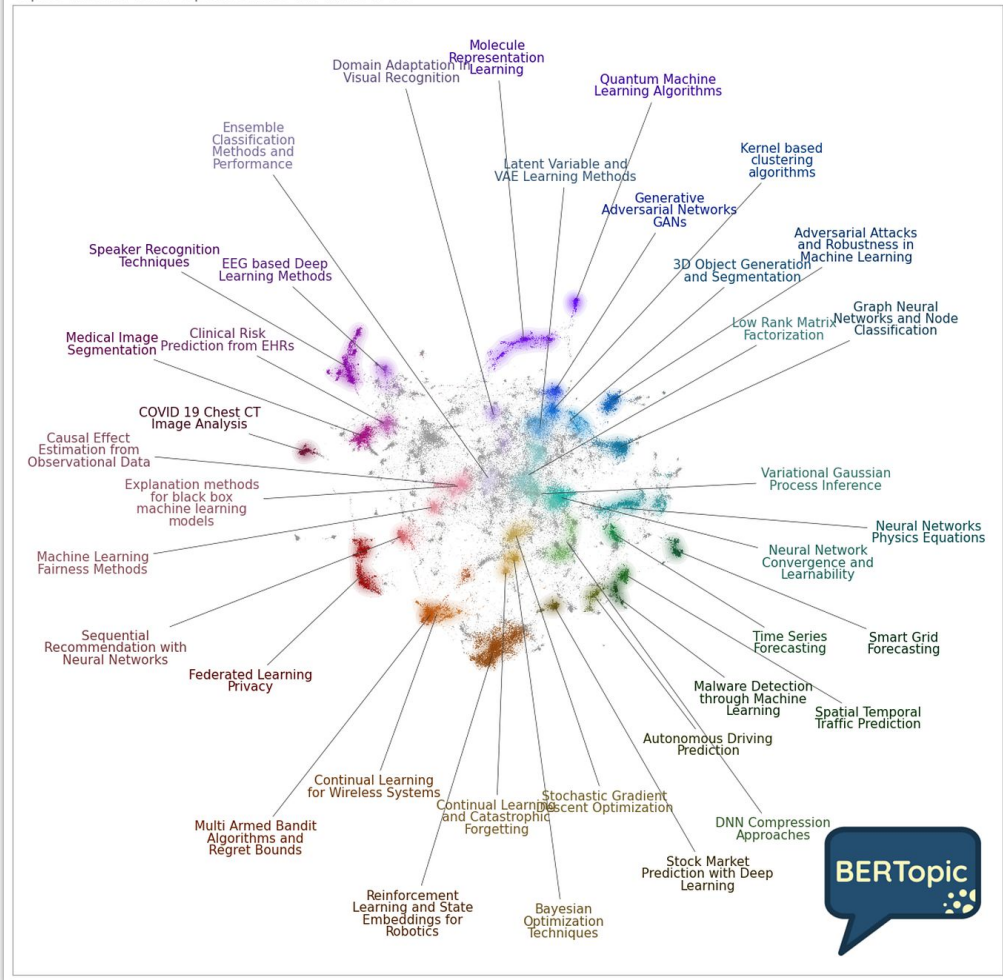
Cluster documents into semantically similar clusters

Create topic representations from clusters



ArXiv - BERTopic

Topics labeled with `openhermes-2.5-mistral-7b`

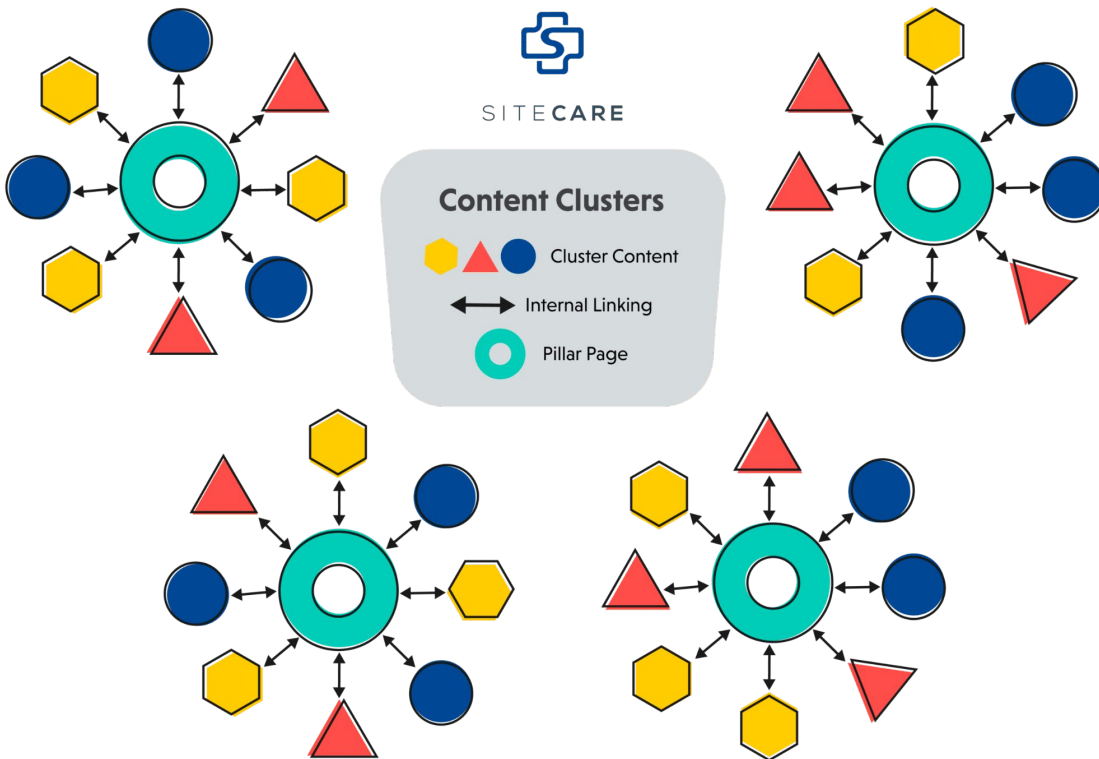


Categorise/ discover patterns and topics on site content

→ Identify opportunities for internal linking

→ identify what your site is about and whether it aligns with business positioning

→ Identify the topics that your competitor site tackles



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Categorise/ discover patterns
and topics on YouTube titles or
video catalogs

→ Quickly understand competitive
landscape in hundreds or
thousands of videos in a niche



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Categorise/ discover patterns
and topics in first-party data
(any kind of user forms)

→ Quickly see what topics your
feedback is centred upon

Bonus points: Tie this analysis with
sentiment analysis.



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Do you *really* understand what makes up a topic?

let's talk about your fancy

keyword clustering

software, and how to replace them

**Keyword clustering is
sub-topic keyword extraction
in text-based documents.**



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Although there are already many methods available for keyword generation (e.g., [Rake](#), [YAKE!](#), TF-IDF, etc.) I wanted to create a very basic, but powerful method for extracting keywords and keyphrases. This is where **KeyBERT** comes in! Which uses BERT-embeddings and simple cosine similarity to find the sub-phrases in a document that are the most similar to the document itself.



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Input Document

Most microbats use echolocation to navigate and find food.

Tokenize Words

most
microbats
use
echolocation
to
navigate
and
find
food

We use the CountVectorizer from Scikit-Learn to tokenize our document into candidate keywords/keyphrases.

Extract Embeddings

Embed Tokens

0.11	...	0.28
...		...
0.72		0.34
most		food

Embed Document

0.55
...
0.96

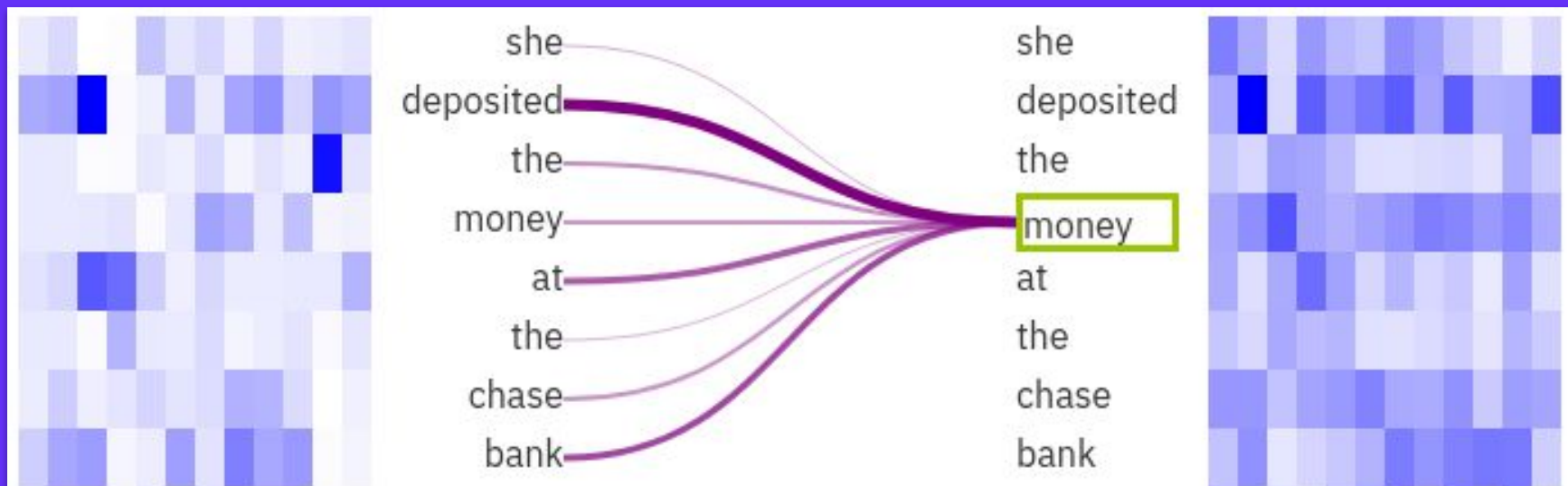
Most microbats use echolocation to navigate and find food.

We can use any language model that can embed both documents and keywords, like sentence-transformers.

Calculate Cosine Similarity

	most	...	food
Most microbats...	.0873

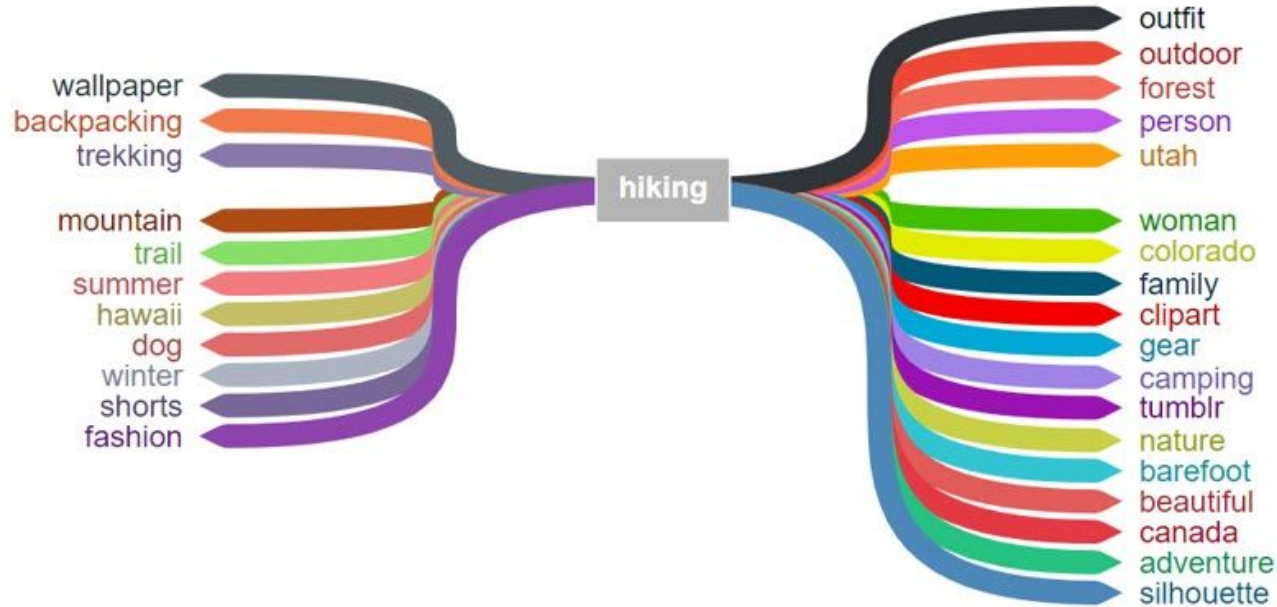
We calculate the cosine similarity between all candidate keywords and the input document. The keywords that have the largest similarity to the document are extracted.



let's talk about

entities

hiking



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Person

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Loc

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Org

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Event

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Date

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Other

z

Barack Hussein Obama II * (born August 4, 1961 *) is an American * attorney and politician who served as the 44th President of the United States * from January 20, 2009 *, to January 20, 2017 *. A member of the Democratic Party *, he was the first African American * to serve as president. He was previously a United States Senator * from Illinois * and a member of the Illinois State Senate *.



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- your content
- competitors' content
- your SERP data versus competitors'
- first-party data
- UGC
- social mentions

Data to analyze



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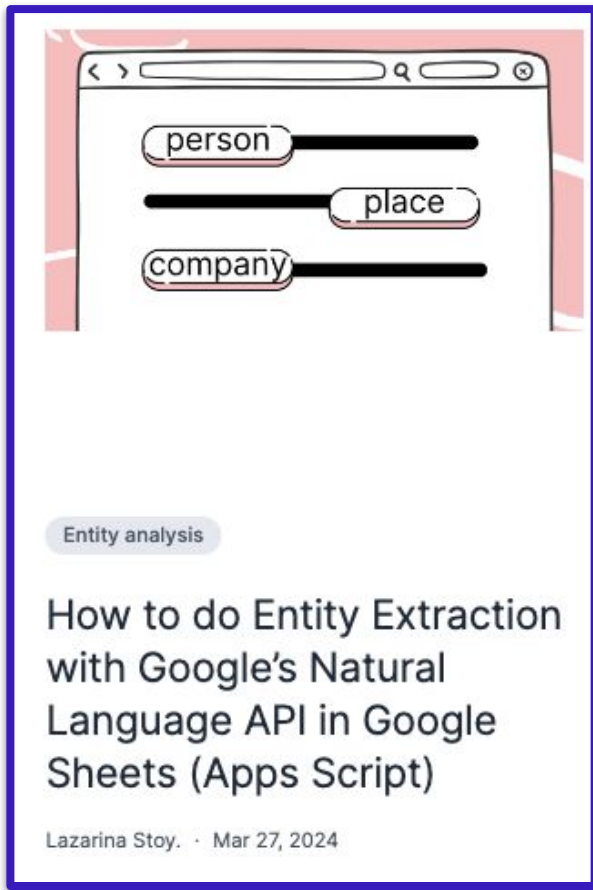
With Google's Natural Language API, you can
analyze entities, and **entity sentiment**.



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Process will take no more than 20 minutes



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Run the script via the
menu to extract
entities from content

Copy of Entity Recognition & Entity Sentiment - News

File Edit View Insert Format Data Tools Extensions Help

Sentiment Tools

Mark entities and sentiment

Entity Analysis with Google Cloud Natural Language API (Google Sheets Template and Apps Script)

	B	C
	comments	entity_sentiment
8376700	The blind Ukrainian amputee whose wife's voice ke...	complete
8376700	Exhausted Ukraine struggles to find new men for fr...	complete
8376700	South Carolina primary: Donald Trump easily defea...	complete
8376700	Kim Petras on sexual liberation and fighting TikTok...	complete
8376700	SAG Awards red carpet 2024: From Margot Robbie...	complete
8376700	SAG Awards 2024: Open nominations ahead of Oscars...	complete
8376700	US and UK carry out fresh strikes against Houthi targets in Yemen	complete
8376700	Inside the long-abandoned tunnel beneath the Clyde	complete
8376700	Ukraine war: Is Avdiivka's fall a sign Russia is turning the tide?	complete
8376700	Travel: How a £525 bet gave birth to our morning commute	complete
8376700	Two years into Russian invasion, exhausted Ukrainians refuse to give up	complete
8376700	Authorities return body of Alexei Navalny to mother 8 days after death	complete
8376700	Actress thanks fans for support after dementia and aphasia diagnosis	complete
8376700	Japan naked festival: Women join Hadaka Matsuri for first time	complete
8376700	Alexei Navalny: Dissent is dangerous in Russia, but activists refuse to give up	complete
8376700	Rosenberg: How two years of war in Ukraine changed Russia	complete
8376700	SAG Award winners 2024: The full list of nominees and wins	complete
8376700	Stray Kids: How K-Pop took over the global charts in 2023	complete
8376700	Gareth Edwards: The Creator director on shaking up Hollywood's visual effects	complete
8376700	Chuckle: 1Xtra presenter feels R&B has special year ahead	complete
8376700	Alia Bhatt: The young Bollywood star taking on Hollywood	complete

Review Data Entity Sentiment Data Analysis Pivot Table



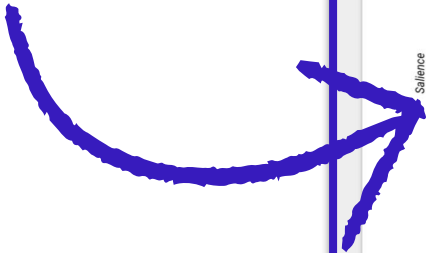
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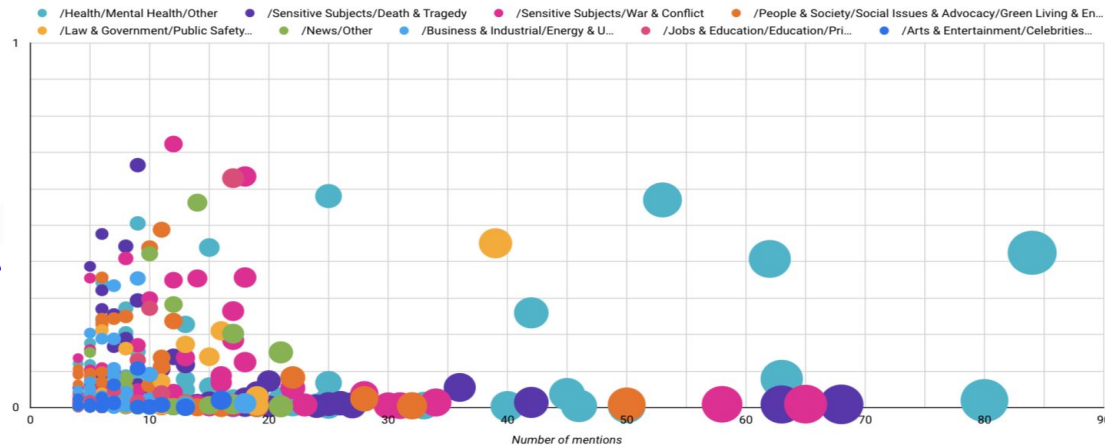
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Get entity data in seconds

Map to topics, labels or intent classifications



Classification label	Entity / Number of mentions									
	issian	UK	Getty Imag...	one	world	family	way	video	support	pag
/Health/Mental Health/Other	80	19	9	16	10	17	17	22	11	
/Sensitive Subjects/Death & Tragedy	-	26	42	20	27	8	15	12	24	
/Sensitive Subjects/War & Conflict	1	15	10	14	11	23	12	9	16	
/People & Society/Social Issues & Advoc...	1	13	3	8	2	6	10	4	7	
/News/Other	-	2	6	6	15	5	9	11	3	
/Law & Government/Public Safety/Law E...	-	3	2	3	-	-	2	3	-	
/Business & Industrial/Energy & Utilities/...	-	-	1	4	-	6	1	-	3	
/Arts & Entertainment/Celebrities & Ente...	-	1	5	3	4	-	1	3	-	
/Jobs & Education/Education/Primary & ...	-	1	1	2	-	3	-	2	-	

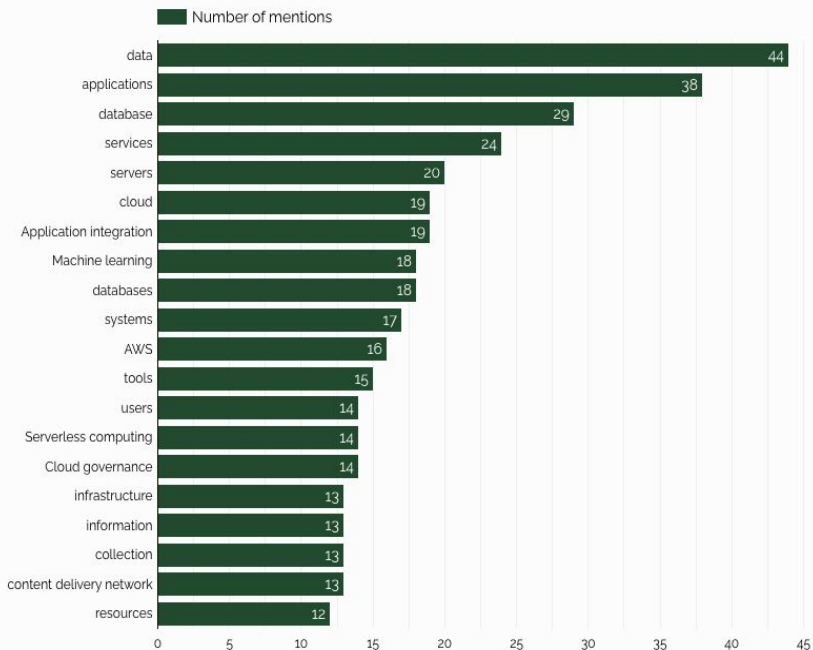


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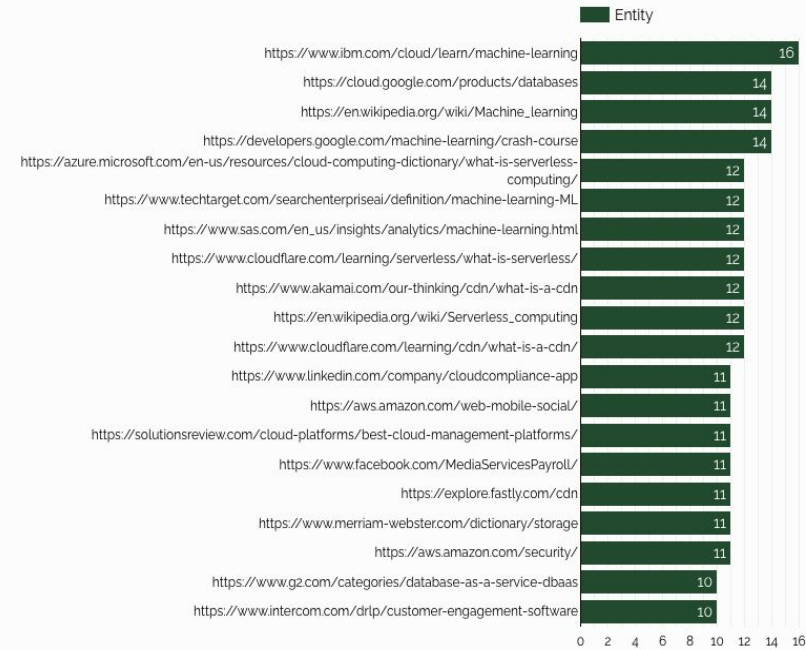
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What are the most common entities mentioned in the SERPs' meta descriptions?



Which URLs' meta descriptions mention the most entities?



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Explore the entity data collected, based on keyword, domain, ranking URL.

Filter by URL

Filter by entity

☒ Filter by domain ranking # of entities mentioned

Type to search

☒ developers.google.com 14
☒ cloudsecurityalliance.org 14
☒ checkpoint.com 13
☒ youtube.com 13
☒ sas.com 12

☐ Sentiment Label (Exclude 1) Salience

☒ Neutral 1911
☒ Slightly positive 158.8
☒ Slightly Negative 6.5
☐ Very Positive 4.6

URL	Entity	Sentiment Label	Sentiment Magnitude	Salience	Number of mentions	Salience
	Revenue					
https://www.indeed.com/q-Front-End-Web-Developer-jobs.html	KesarWeb	Slightly positive	0.1	0.00928615	1	0.01
https://aws.amazon.com/security/	EPP	Neutral	0	0.009550332	1	0.01
https://aws.amazon.com/security/	FIM	Neutral	0	0.009550332	1	0.01
https://www.absolute-labs.io/	Customers	Slightly positive	0.3	0.009584136	1	0.01
https://www.g2.com/categories/database-as-a-service-dbaas	RDS	Neutral	0	0.010077032	1	0.01
https://www.investopedia.com/terms/c/cloud-computing.asp	applications	Neutral	0	0.010227131	1	0.01
https://en.wikipedia.org/wiki/Web_development_tools	Google Chrome	Neutral	0	0.010251738	1	0.01
https://www.talend.com/resources/what-is-application-integration/	sources	Neutral	0	0.010404995	1	0.01
https://www.techtarget.com/searchdatamanagement/definition/database	Computer databases	Neutral	0	0.010440737	1	0.01
https://www.intercom.com/drip/customer-engagement-software	Powerful & Flexible	Neutral	0	0.010456439	1	0.01
https://www.codecademy.com/article/what-is-rdbms-sql	data	Neutral	0	0.010545575	1	0.01
https://www.salesforce.com/products/platform/best-practices/cloud-computing/	cloud	Neutral	0	0.010708032	1	0.01
https://www.mysql.com/	machine learning workloads	Slightly positive	0.2	0.010735927	1	0.01
https://www.blackforestmktg.com/	Black Forest Container Systems	Neutral	0	0.010848048	1	0.01
https://www.imperva.com/learn/data-security/cloud-governance/	data security	Neutral	0	0.0115666855	1	0.01
https://martinfowler.com/articles/serverless.html	databases	Slightly positive	0.1	0.011604427	1	0.01
https://www.usg.edu/galileo/skills/unit04/primer04_01.php.html	number	Neutral	0	0.01169396	1	0.01
https://en.wikipedia.org/wiki/Front-	CSS	Neutral	0	0.011733394	1	0.01

1 - 100 / 2169 < >



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Does it matter *how* you do it?

Yes, use a tailored model.



Entities	Sentiment	Syntax	Categories
<p>⟨Lazarina Stoy⟩₁ (formally known as ⟨Lazarina Stoyanova⟩₁₀) is an ⟨SEO⟩₄ & ⟨Data Science⟩₃, ⟨Sr. Manager⟩₇, a freelance ⟨SEO⟩₂ & ⟨Data Consultant⟩₈, and a ⟨storyteller⟩₅. ⟨Lazarina Stoy⟩₁ creates educational ⟨content⟩₁₃ in the ⟨SEO⟩₂, ⟨data science⟩₃, and ⟨analytics⟩₁₈ ⟨niche⟩₂₁, as well as ⟨resources⟩₉ that can help ⟨SEOs⟩₁₁ and digital ⟨analysts⟩₁₉ be more efficient with their time. ⟨Lazarina⟩₁₇ is a ⟨Conference Speaker⟩₁₆, having spoken at world-renowned ⟨conferences⟩₃₁ in the ⟨SEO⟩₂ ⟨world⟩₃₂, on ⟨topics⟩₁₅ that align with her professional ⟨mission⟩₃₆ – to make ⟨marketers⟩₆ '⟨lives⟩₁₂ easier. ⟨Lazarina⟩₁ has used ⟨tools⟩₃₇ ⟨everyone⟩₂₉ (regardless of their ⟨tech background⟩₃₄) can apply in ⟨practice⟩₃₀. ⟨Lazarina⟩₁ graduated from the ⟨University of Strathclyde⟩₁₄, where she studied to combine her ⟨professional⟩₅₀ – ⟨marketing⟩₂₀ and ⟨technology⟩₂₅, with the ⟨aim⟩₃₅ to work on embedding ML-enabled ⟨marketing⟩₂₇ to help ⟨marketers⟩₂₃ '⟨lives⟩₁₂ become easier. ⟨Lazarina⟩₁ loves connecting the ⟨theory⟩₄₀ and ⟨practice⟩₃₃, finding ⟨patterns⟩₂₂, and discussing ⟨science⟩₂₈ in a ⟨way⟩₄₁ accessible for ⟨beginners⟩₄₂. ⟨Lazarina⟩₁ tells ⟨stories⟩₄₇ about ⟨marketing⟩₆₀ and ⟨technology⟩₆₄ that educate, inspire, and start ⟨conversations⟩₆₇. She has contributed to a ⟨number⟩₆₆ of well-known ⟨publications⟩₆₅, such as Towards ⟨Data Science⟩₆₂, ⟨Better Marketing⟩₄₉, as well as to a ⟨number⟩₄₃ of ⟨SEO publications⟩₄₄ of ⟨companies⟩₄₅ like ⟨Oncrawl & Wix⟩₆₁. Character-wise, ⟨Lazarina⟩₁ is a progress-driven ⟨data⟩₂₆ and ⟨automation⟩₃₈ ⟨geek⟩₄₆. She is always seeking ⟨opportunities⟩₅₂ for improving the ⟨efficiency⟩₅₇ of ⟨processes⟩₅₁. ⟨Lazarina⟩₁ has a ⟨passion⟩₅₄ for spotting ⟨improvement opportunities⟩₅₅ in ⟨everything⟩₅₆ she does, making her a strong ⟨proponent⟩₅₈ of ⟨automation⟩₄₈ and ⟨machine learning⟩₅₉ in ⟨SEO processes⟩₅₃.</p>			

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Entities in the given text are:

- Person: Lazarina Stoy (formally known as Lazarina Stoyanova)
- Job Title: SEO & Data Science, Sr. Manager; Freelance SEO & Data Consultant; Conference Speaker
- Field of Work: SEO, Data Science, Analytics, Marketing, Technology
- Education Institution: University of Strathclyde
- Publications: Towards Data Science, Better Marketing, Oncrawl, Wix

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Model	Benefits	Limitations
Google Cloud Natural Language API	<ul style="list-style-type: none"> • Recognizes entities and provides a score for prominence, importance, number of mentions • Syntax analysis, including dependency trees, part-of-speech tagging • Sentiment analysis in entities (in context), and of entire documents or texts • Scalable • Easy to use with multiple integrations possible (including Google Sheets) 	<ul style="list-style-type: none"> • Overstuffing of entities recognised – e.g., singular and plural forms
GPT-4	<ul style="list-style-type: none"> • Great for one-offs and quick analyses • Can identify entities with some limitations • Can do syntax analysis with some limitations 	<ul style="list-style-type: none"> • Prone to hallucinations, e.g., will pull out words or entities that are not in the text • Limited entity recognition and syntax analysis • Sometimes false category attribution • Limited scalability • Much slower comparatively



**Entity analysis work is central to multiple SEO projects
(so, *pretty important* to get it right)**



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SERP Analysis - Entity Extraction, Sentiment...

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562 views • 6 months ago



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How to Implement Machine Learning in Your Internal...

Lazarina Stoy.

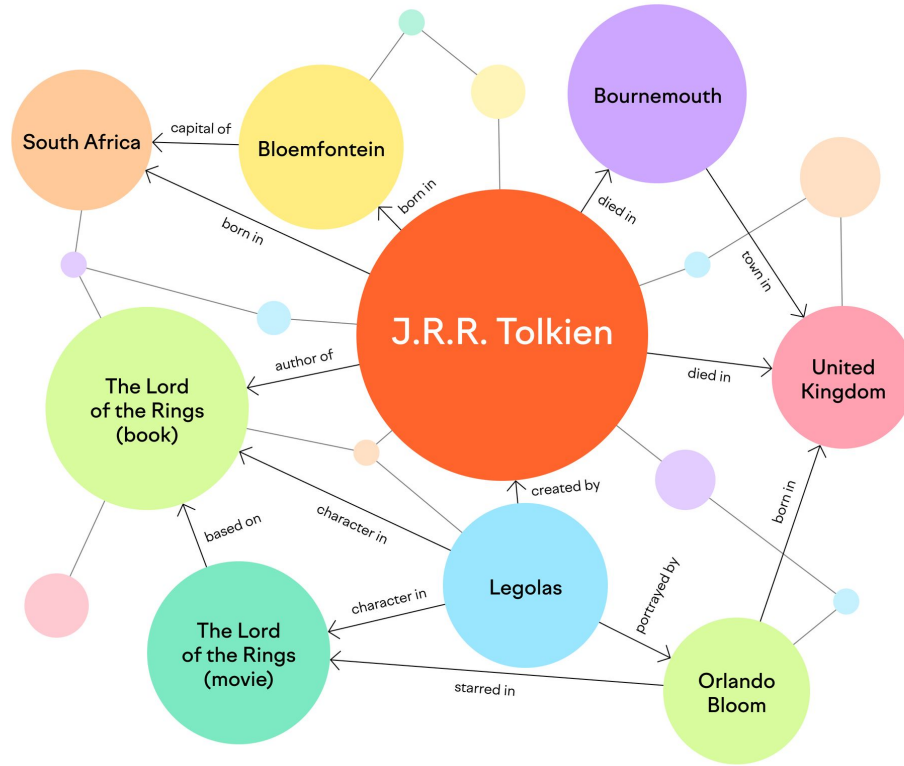
395 views • 7 months ago



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semrush.com

SEMRUSH



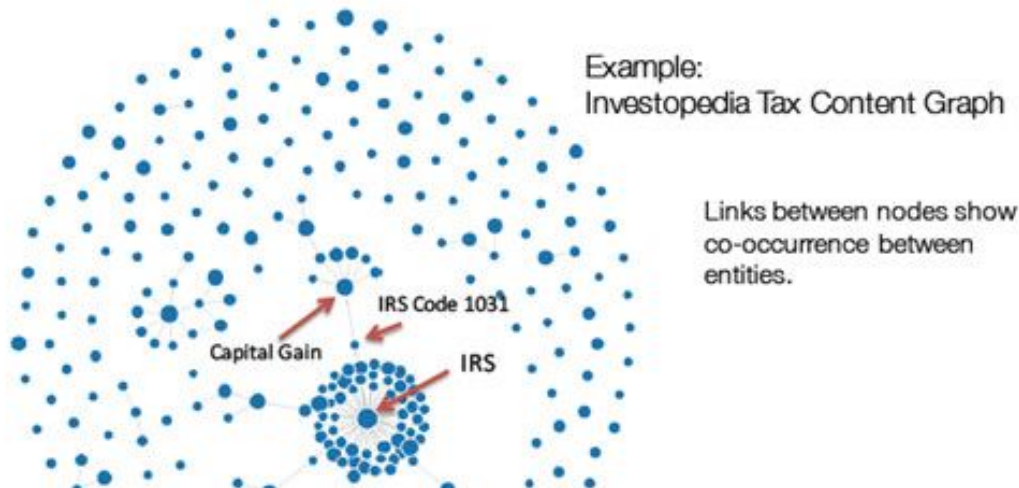
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Understanding our Content

Based on entity tagging, we built a graph to survey our content and explore how it is interrelated

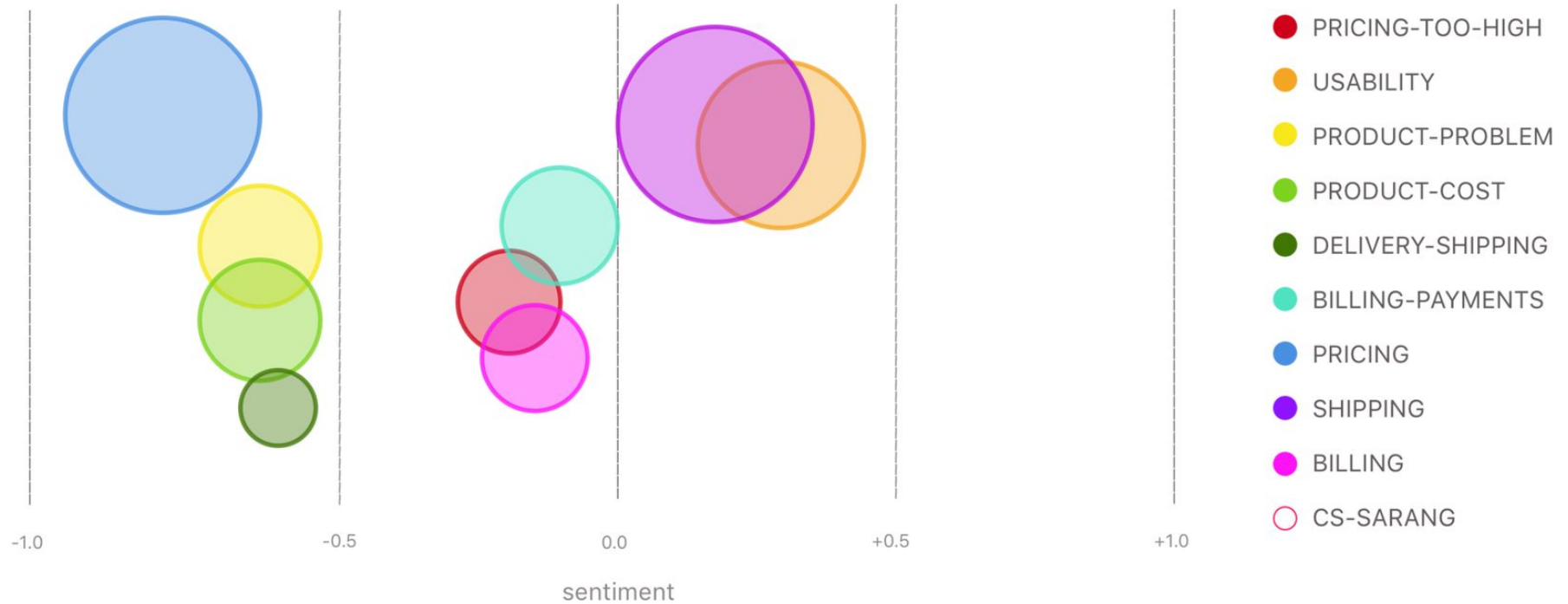


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Sentiment Volume



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Do you need to understand text structures, at *scale*?

let's talk about

fuzzy matching

A quick and dirty way for calculating

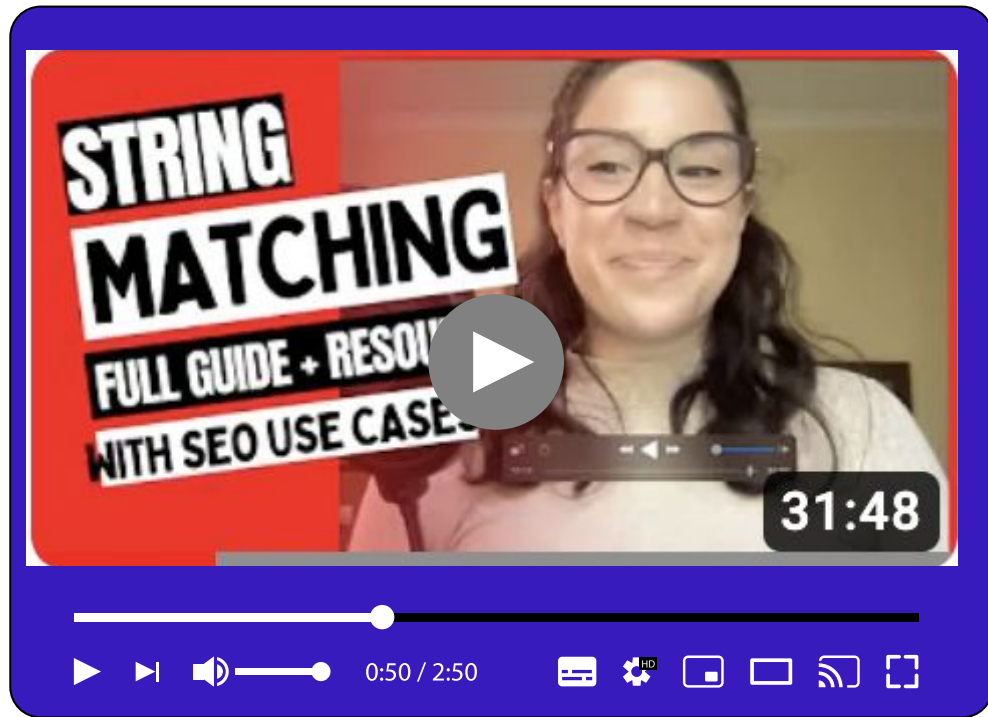
similarity between two strings



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WATCH THE DETAILS LATER

I've recorded a step-by-step tutorial on using **fuzzy matching** for things like:

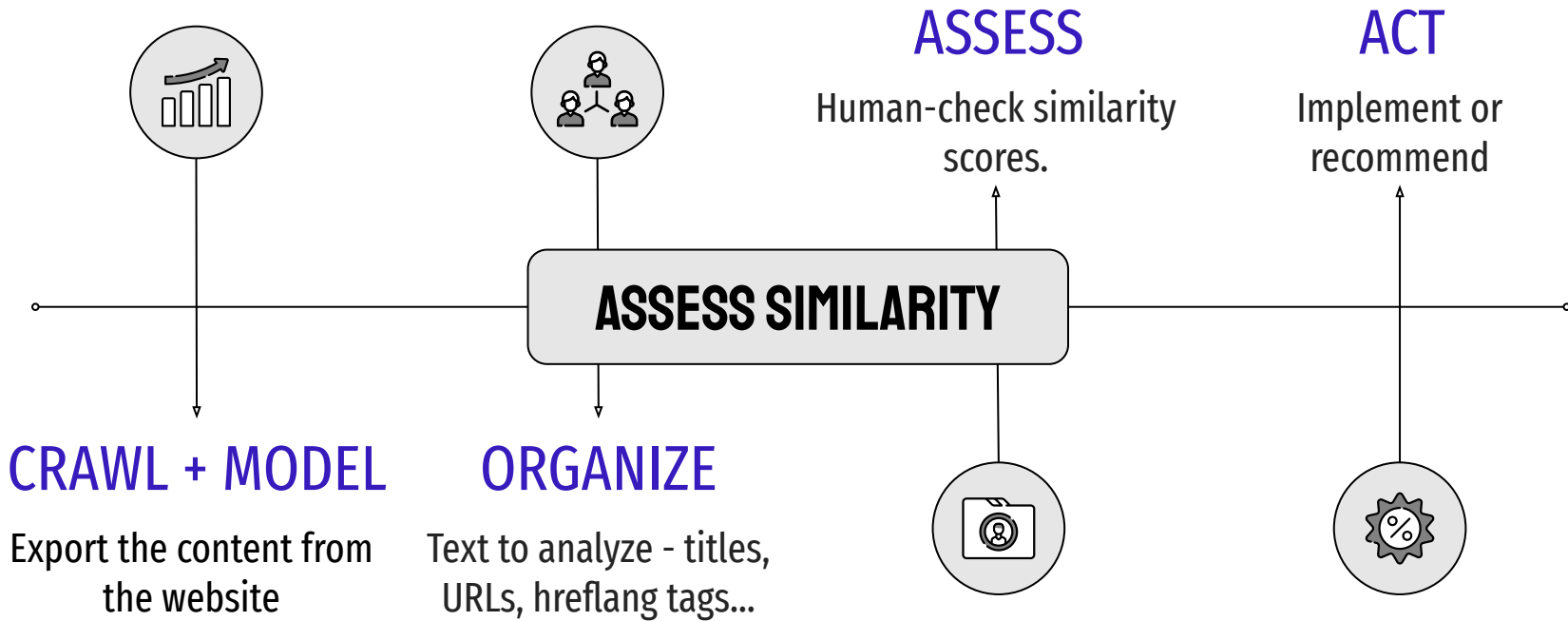
- Identifying link opportunities
- String Similarity Analysis
- redirect mapping of URLs



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H1 match

URL	URL2	Similarity
https://www.example.com/destinations/egypt/	https://www.example.com/egypt/	0.9333
https://www.example.com/destinations/italy/rome/	https://www.example.com/italy/rome	0.8667
https://www.example.com/destinations/portugal/algarve/	https://www.example.com/portugal/algarve/	0.9333
https://www.example.com/destinations/spain/	https://www.example.com/spain/	0.9333
https://www.example.com/destinations/spain/balearics/ibiza/	https://www.example.com/spain/balearics/ibiza/	0.9333
https://www.example.com/destinations/spain/costa-brava/benidorm/	https://www.example.com/spain/costa-brava/benidorm/	0.9333

Page title match

URL	URL2	Similarity
https://www.example.com/destinations/egypt/	https://www.example.com/egypt/	0.9091
https://www.example.com/destinations/italy/rome/	https://www.example.com/italy/rome	0.9231
https://www.example.com/destinations/portugal/algarve/	https://www.example.com/portugal/algarve/	0.9231
https://www.example.com/destinations/spain/	https://www.example.com/spain/	0.9000
https://www.example.com/destinations/spain/balearics/ibiza/	https://www.example.com/spain/balearics/ibiza/	0.9286
https://www.example.com/destinations/spain/costa-brava/benidorm/	https://www.example.com/spain/costa-brava/benidorm/	0.9375

URL match

URL	URL2	Similarity
https://www.example.com/destinations/egypt/	https://www.example.com/egypt/	0.8745
https://www.example.com/destinations/italy/rome/	https://www.example.com/italy/rome	0.9111
https://www.example.com/destinations/portugal/algarve/	https://www.example.com/portugal/algarve/	0.8745
https://www.example.com/destinations/spain/	https://www.example.com/spain/	0.8820
https://www.example.com/destinations/spain/balearics/ibiza/	https://www.example.com/spain/balearics/ibiza/	0.8910
https://www.example.com/destinations/spain/costa-brava/benidorm/	https://www.example.com/spain/costa-brava/benidorm/	0.9158



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Language use analysis can also be useful for scaling generation of or identifying opportunities for Structured Data (schema) mark-up



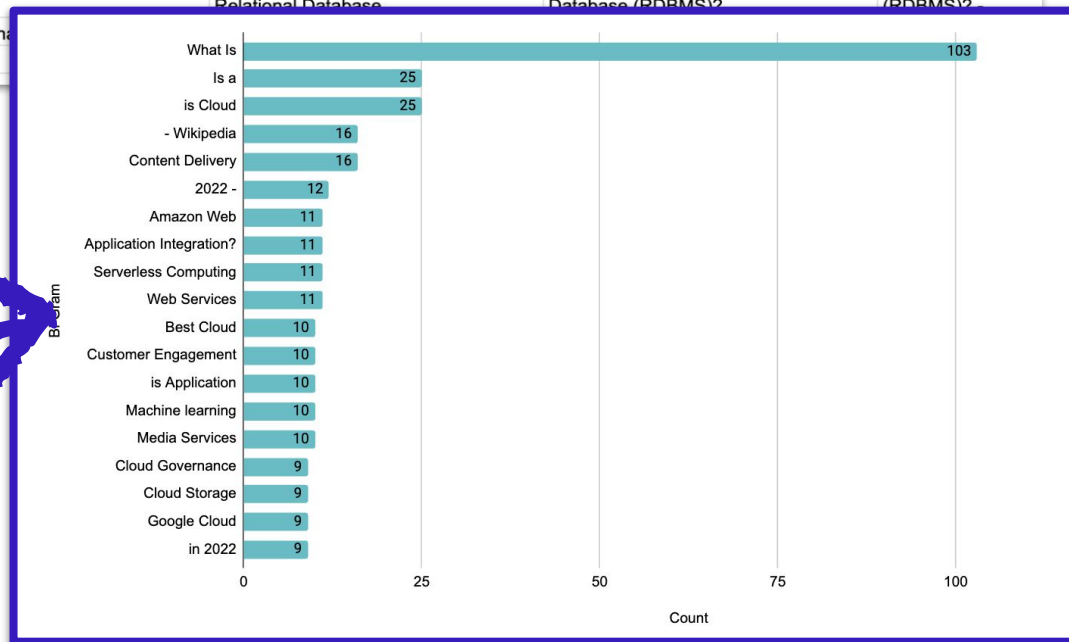
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```
=transpose(getngrams(F2, 2))
```

I	J	K	L	M	N
bi-grams in title					
Enterprise application	application integration	integration -	- Wikipedia		
What Is	Is a	a Database	Database -	- Oracle	
What is	is a	a Relational	Relational Database	Database (RDBMS)?	(RDBMS)?
What Is	Is A	A Non-Relation			
What is	is a	a CDN?			



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From blog post

Table Of Contents

A beginner-friendly SEO guide, based on blogs that convert
Link your blog from the main navigation and other important menus

- [Why should you link your blog from the main menu?](#)
- [Why should you link your blog from the footer menu?](#)
- [Choose a blog location, which promotes site authority](#)
 - [What should you choose – hosting the blog on a subdomain or subfolder?](#)
 - [Should you include tags and category names in your blog URLs?](#)
- [Use a mix of broad and specific topic tags, keep them relevant to user intent](#)
 - [What are the benefits of using a mix of broad and specific topic tags in a blog?](#)
 - [How many categories and tags should a blog have?](#)
- [Use titles and headings to increase CTR and blog engagement](#)
 - [How to optimally use the H1 heading tag?](#)
- [Improve User Experience with indicators for reading time, content difficulty, and content type](#)
 - [Should you publish news and other content \(e.g. press releases\) as part of your blog?](#)
- [Takeaway](#)

```
+ Code + Text
# Tokenize text into sentences
sentences = nltk.sent_tokenize(text)

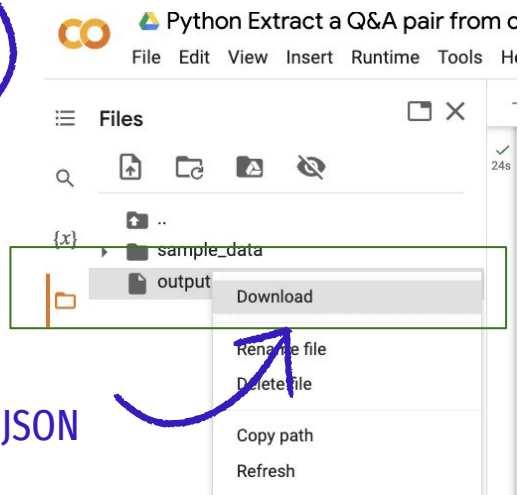
# Initialize FAQ Schema dictionary
faq_schema = {'@context': 'https://schema.org', '@type': 'FAQPage', 'mainEntity': []}

# Loop through sentences to find questions and their answers
for i in range(len(sentences)):
    if is_question(sentences[i]):
        # Extract question
        question = re.sub(r'[\W\s]', '', sentences[i]).strip()
        # Extract answer
        j = i+1
        answer = ''
        while j < len(sentences) and not is_question(sentences[j]):
            answer += ' ' + sentences[j]
            j += 1
        answer = answer.strip()
        # Add question-answer pair to FAQ Schema
        faq_schema['mainEntity'].append({'@type': 'Question', 'name': question, 'acceptedAnswer': {'@type': 'Answer', 'text': answer}})

# Save FAQ Schema to JSON file
with open('output.json', 'w') as f:
    json.dump(faq_schema, f, indent=4)
print(faq_schema)

... [nltk_data] Downloading package punkt to /root/nltk_data...
[nltk_data] Unzipping tokenizers/punkt.zip.
Paste the webpage content: ch engines and visitors
```

Run the cell, paste the content



Download the output JSON



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→ Script tokenizes the text, discovers the questions, and pulls the answers

```
import nltk
nltk.download('punkt')
import re
import json

# Function to check if a sentence is a question that ends with a question mark
def is_question(sentence):
    question_words = ['what', 'when', 'where', 'which', 'who', 'whom', 'whose', 'why', 'how', 'is', 'will', 'should']
    if sentence.split()[0].lower() in question_words and sentence.strip().endswith('?'):
        return True
    else:
        return False

# Read text file
text = input("Paste the webpage content: ")

# Tokenize text into sentences
sentences = nltk.sent_tokenize(text)

# Initialize FAQ Schema dictionary
faq_schema = {'@context': 'https://schema.org', '@type': 'FAQPage', 'mainEntity': []}

# Loop through sentences to find questions and their answers
for i in range(len(sentences)):
    if is_question(sentences[i]):
        # Extract question
        question = re.sub(r'[^\w\s]', '', sentences[i]).strip()
        # Extract answer
        j = i+1
        answer = ''
        while j < len(sentences) and not is_question(sentences[j]):
            answer += ' ' + sentences[j]
            j += 1
        answer = answer.strip()
        # Add question-answer pair to FAQ Schema
        faq_schema['mainEntity'].append({'@type': 'Question', 'name': question, 'acceptedAnswer': {'@type': 'Answer', 'text': answer}})

# Save FAQ Schema to JSON file
with open('output.json', 'w') as f:
    json.dump(faq_schema, f, indent=4)
print(faq_schema)
```



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→ Script organises these into a schema dictionary, which is saved as a JSON file

```
1 {
2   "@context": "https://schema.org",
3   "@type": "FAQPage",
4   "mainEntity": [
5     {
6       "@type": "Question",
7       "name": "Why should you link your blog from the main menu?",
8       "acceptedAnswer": {
9         "@type": "Answer",
10        "text": "The main navigation is typically the primary point of entry for website users and should contain all significant sections, including a link to your blog."
11      }
12    },
13    {
14      "@type": "Question",
15      "name": "Why should you link your blog from the footer menu?",
16      "acceptedAnswer": {
17        "@type": "Answer",
18        "text": "Placing a link to your blog in the footer ensures accessibility from every page of your website, providing a seamless user experience."
19      }
20    },
21    {
22      "@type": "Question",
23      "name": "What should you choose hosting the blog on a subdomain or subfolder?",
24      "acceptedAnswer": {
25        "@type": "Answer",
26        "text": "One option is to integrate your blog into your website's domain by creating a subdirectory or otherwise -subfolder, such as yourdomain.com/blog."
27      }
28    },
29    {
30      "@type": "Question",
31      "name": "Should you include tags and category names in your blog URLs?",
32      "acceptedAnswer": {
33        "@type": "Answer",
34        "text": "Including tags and category names in your blog URLs can have some benefits, but it may not be necessary in all cases. Including them can help with SEO and organization."
35      }
36    },
37    {
38      "@type": "Question",
39      "name": "What are the benefits of using a mix of broad and specific topic tags in a blog?",
40      "acceptedAnswer": {
41        "@type": "Answer",
42        "text": "Using a mix of broad and specific topic tags can help you reach a wider audience while also targeting specific keywords. Broad tags like 'marketing' can attract general interest, while specific tags like 'content marketing strategy' can attract more targeted traffic."
43      }
44    }
45  ]
46 }
```

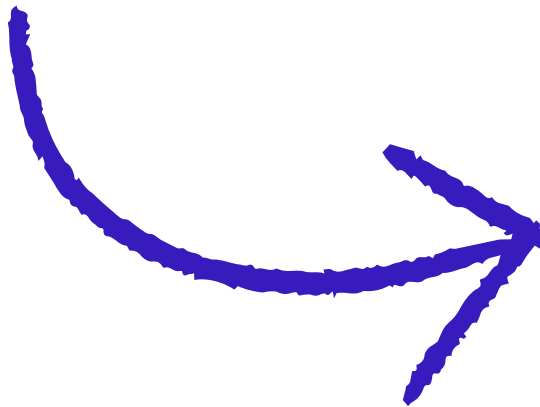


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What took minutes even with the most straightforward methods (e.g. using a schema markup generator, and copy-pasting individual questions into it), **took seconds.**



FAQPage		0 warnings	0 errors	⬆
@context	https://schema.org			
@type	FAQPage			
<u>mainEntity</u>				
Question ⬆				
@type	Question			
<u>acceptedAnswer</u>				
Answer ⬆				
@type	Answer			
<u>text</u>	The main navigation is typically the primary point of entry for website users and should contain all significant sections, including your blog. By linking your blog from the main menu, you can increase traffic and engagement, boosting your blog's visibility.			
<u>name</u>	Why should you link your blog from the main menu			



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Are recent updates making you *rethink* content distribution?

let's talk about something a bit more advanced (but still beginner-friendly)

Content Transformation

Improve brand omni-presence and content accessibility

Both users and search engines want to see multi-modal presence for high-value sites.

Meaning:

- Text to video
- Videos to text
- Text to audio
- Audio to text
- Text summaries for content distribution on social media



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Needless to say scaling production here is pretty significant for organic growth.



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You have a library of videos on YouTube but no blog?

→ Scale it's launch quickly through transcription.

Put Speech-to-Text into action

As in this demo, you can easily infuse speech transcription into your applications with th



Input type

☐ Microphone ☒ File upload

Language

English (United States) ▼

Speaker diarization **BETA**

Off ▼

Speakers

1 speaker ▼

Punctuation



Show JSON ▼

↑ CHOOSE FILE



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**You have a library of
high-performing blog posts
but no presence on
YouTube/TikTok?**

**→ Scale production with
text to speech.**

Put Text-to-Speech into action

Type what you want, select a language then click "Speak It" to hear.



Text to speak:

Google Cloud Text-to-Speech enables developers to synthesize natural-sounding speech with 100+ voices, available in multiple languages and variants. It applies DeepMind's groundbreaking research in WaveNet and Google's powerful neural networks to deliver the highest fidelity possible. As an easy-to-use API, you can create lifelike interactions with your users, across many applications and devices.

text [sml](#)

Language / locale

English (United States)

Voice type

Neural2

Voice name

en-US-Neural2-J

Audio device profile

Small home speaker

Speed:

1.00

Pitch:

0.00

Show JSON

▶ RESUME



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You have a library of high-performing blog posts but no content distribution?

→ Transform blog posts to insightful posts for social media.



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Caitlin Hathaway
@CaitlinTheSEO

Repurpose content to use for other marketing channels with the Ultimate Content Repurposer GPT 🧠

- Add your URL/paste content in the chat + your target audience
- Generates audience-focused ideas for repurposing across platforms like X, TikTok, Reddit, YT etc.

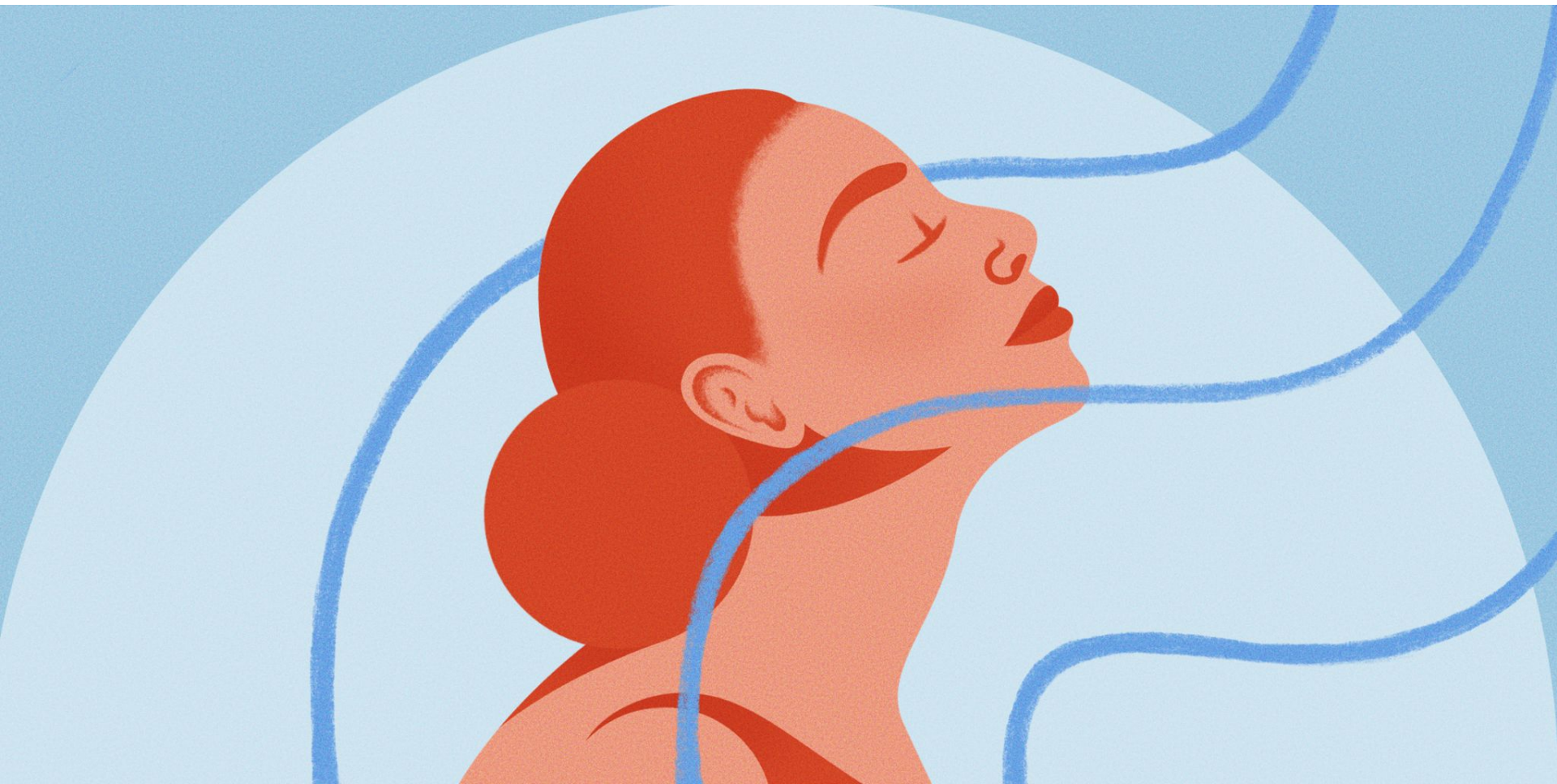
Link 🗨️ #GPT



Based on the key topics identified from the article "31 Expert Opinions on the Importance of UX in Marketing," here's a table with creative content repurposing ideas for marketing managers across various platforms:

Platform	Integrating UX into Marketing Strategies	Impact of UX on Customer Conversion and Engagement	Expert Insights on Leveraging UX for Marketing Success
Twitter	Create a tweet series highlighting key UX strategies in marketing and their effectiveness. Include statistics and tag thought leaders.	Host a Twitter poll on the most effective UX features that enhance customer engagement, followed by a discussion thread.	Share quotes from the article's experts on UX in marketing, sparking a dialogue on best practices.
LinkedIn	Post an article discussing the integration of UX in marketing plans, using real-world examples. Encourage industry professionals to share experiences.	Share a case study on LinkedIn about a successful UX overhaul and its impact on customer engagement and conversion rates.	Conduct a LinkedIn Live session with a UX/marketing expert discussing key insights from the article.
Newsletter	Feature a section on innovative ways to blend UX and marketing strategies, with subscriber-exclusive tips and tricks.	Include an analysis of how enhanced UX leads to better customer engagement and conversions, with industry examples.	Offer a round-up of expert opinions from the article, with a deep dive into their most impactful advice.
YouTube	Create a video explaining the importance of UX in marketing, with visual examples of good and bad practices.	Produce an interview series with marketers who have successfully improved conversions through UX enhancements.	Host a panel discussion with industry experts discussing the article's insights and their implications for marketers.

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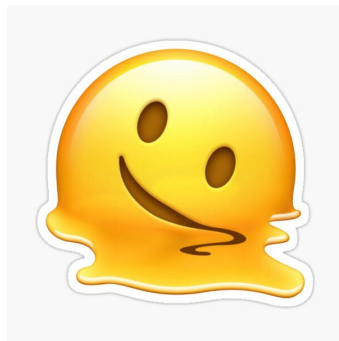


half of the people in the room are thinking



“ I got this.”

“I could never.”



mindset + community + resources



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what I do my website

seo@lazarinastoy.com

social handle

best way to get in touch