



Lazarina Stoy.

Founder of MLforSEO, Marketing Consultant

5 Phases of NLP

Theory, practice, and implications for Search Marketers

For Search Marketing Lovers

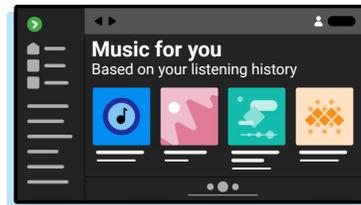
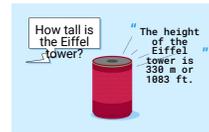
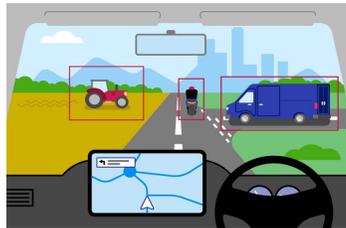
WE  SEO by **oncrawl**



Let's start by contextualising the topic, and also clarifying something with a ton of confusion in our field (and any other related field, really) lately.

AI

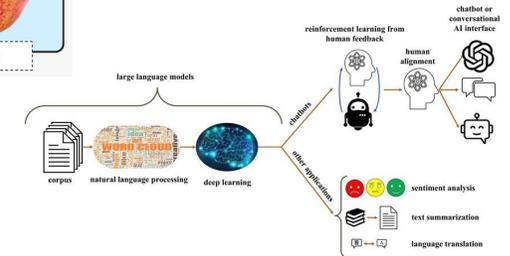
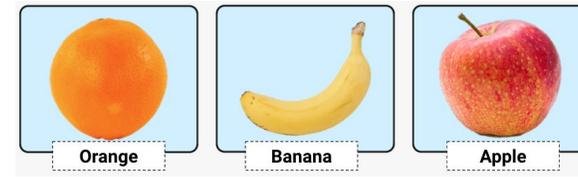
Artificial intelligence is the design and study of **systems** that appear to demonstrate intelligent behaviour.



VS

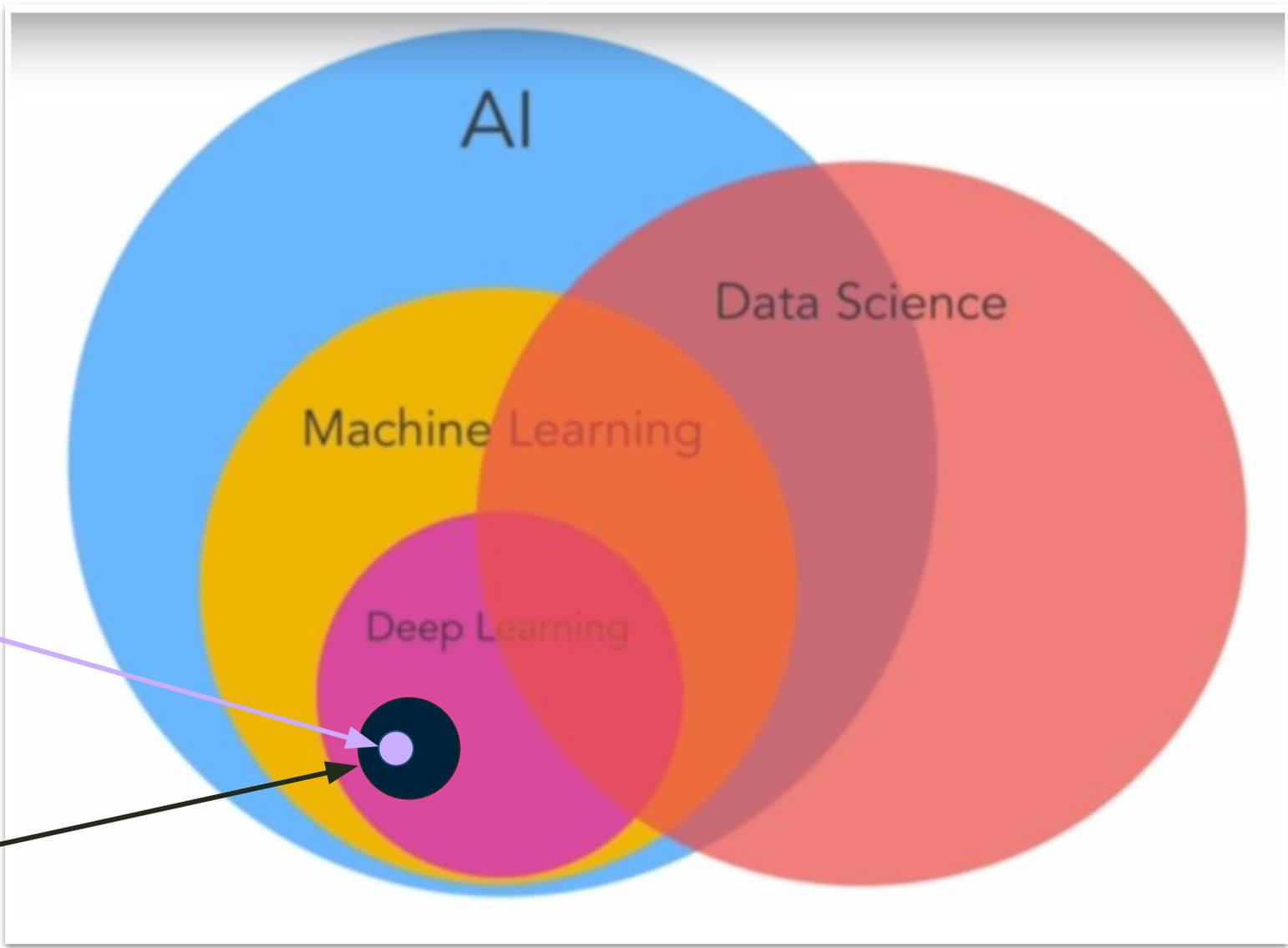
ML

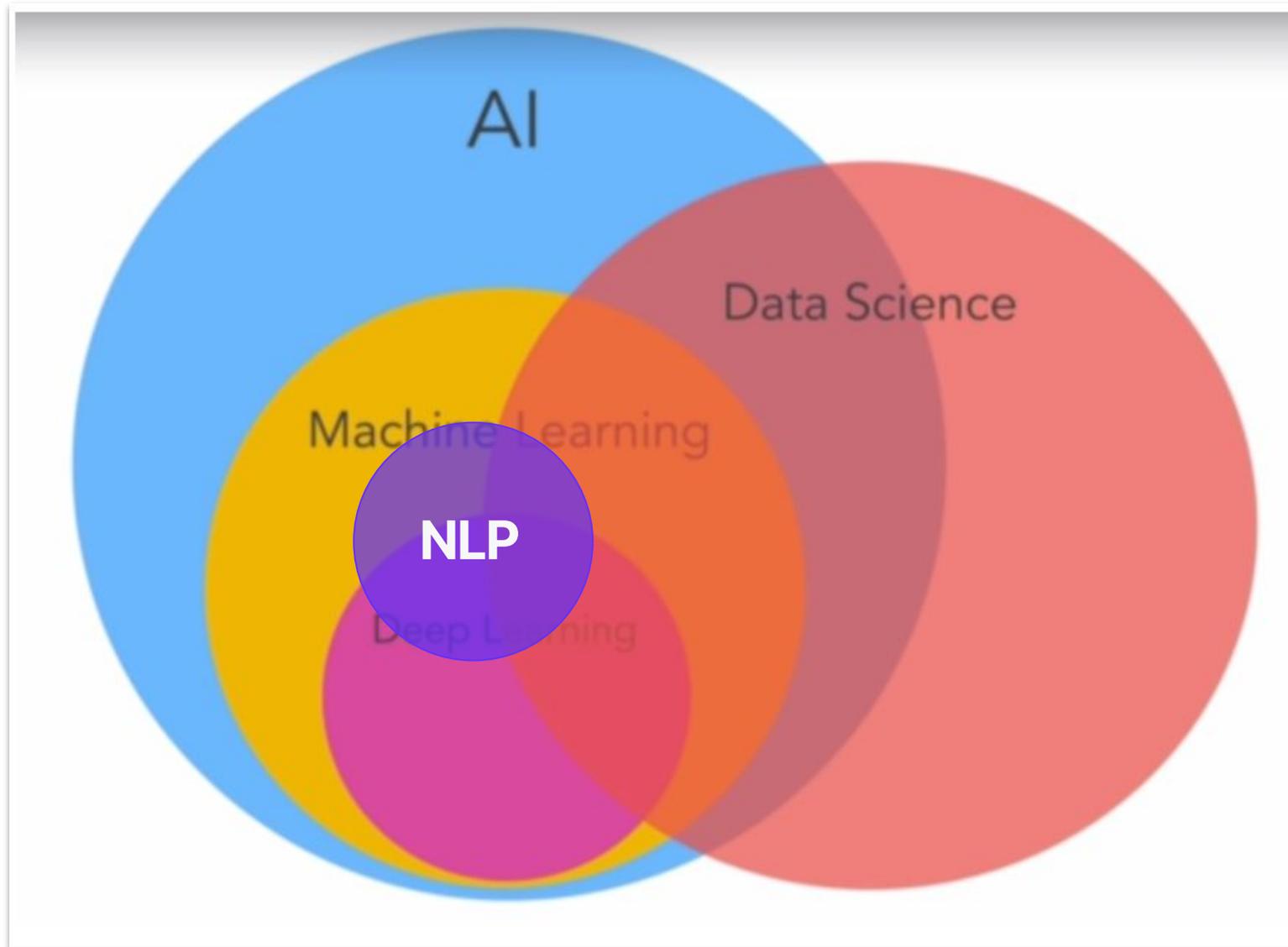
Machine learning is a subset of AI, an **approach** of building AI applications, where models are trained to make predictions.



LLM-based chatbots (like ChatGPT or Gemini)

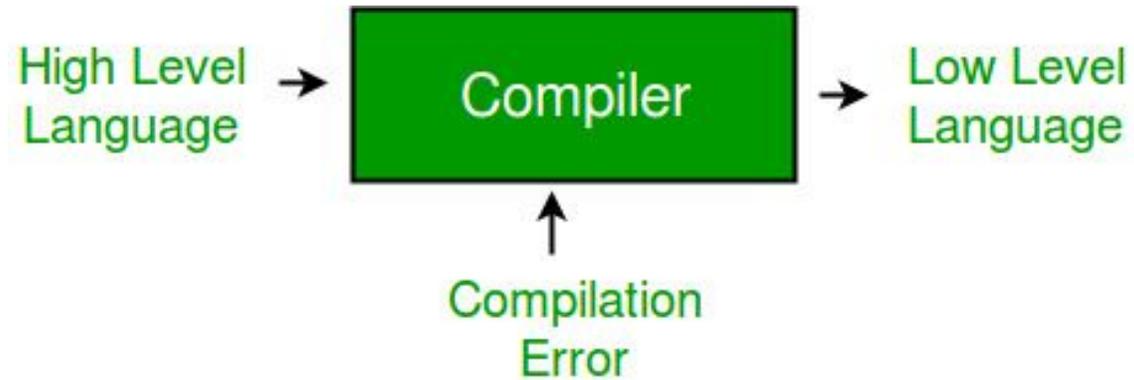
Generative AI





Natural language processing (commonly referred to as NLP) is a subset of Artificial Intelligence research, which is concerned with machine learning and text analysis tasks, aimed at giving computer programs the ability to understand human language, both written and spoken. Most recently, it is also concerned with text generation as well.

Today, we'll go through the **five phases of NLP** and how you can utilise them in your SEO projects.



The five phases presented in this article are the five phases of [compiler design](#) – which is a subset of software engineering, concerned with programming machines that convert a high-level language to a low-level language.

Part 01 - Lexical or morphological analysis

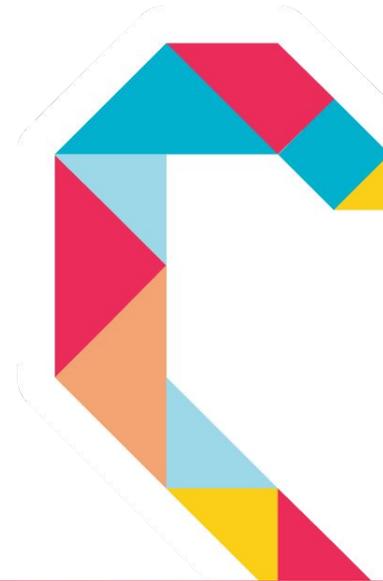
Part 02 - Syntax analysis (parsing)

Part 03 - Semantic analysis

Part 04 - Discourse integration

Part 05 - Pragmatic analysis

Part 06 - Practical Implications for SEO





Lazarina Stoy

01

Marketing Consultant, Trainer, and International Speaker

02

Founder of [MLforSEO - an academy](#) for teaching ML and ML-enabled automation to organic search marketers

03

Worked with countless teams to test, iterate, and implement automation workflows to boost performance and productivity

04

Shares templates, code, and **a TON of resources for free** on www.mlforseo.com (including all mentioned in this presentation)

Lexical analysis

For Search Marketing Lovers

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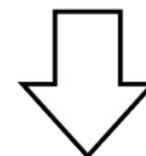


The first phase of NLP is **word structure analysis**, which is referred to as lexical or morphological analysis.

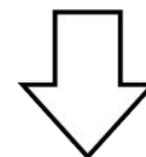
A lexicon is defined as a collection of words and phrases in a given language.

Lexical analysis is the process of splitting the lexicon into components, based on what the user sets as parameters – paragraphs, phrases, words, or characters.

i f (x > 3 . 1



Character Stream



Token Stream

KEYWORD
"if"

BRACKET
" ("

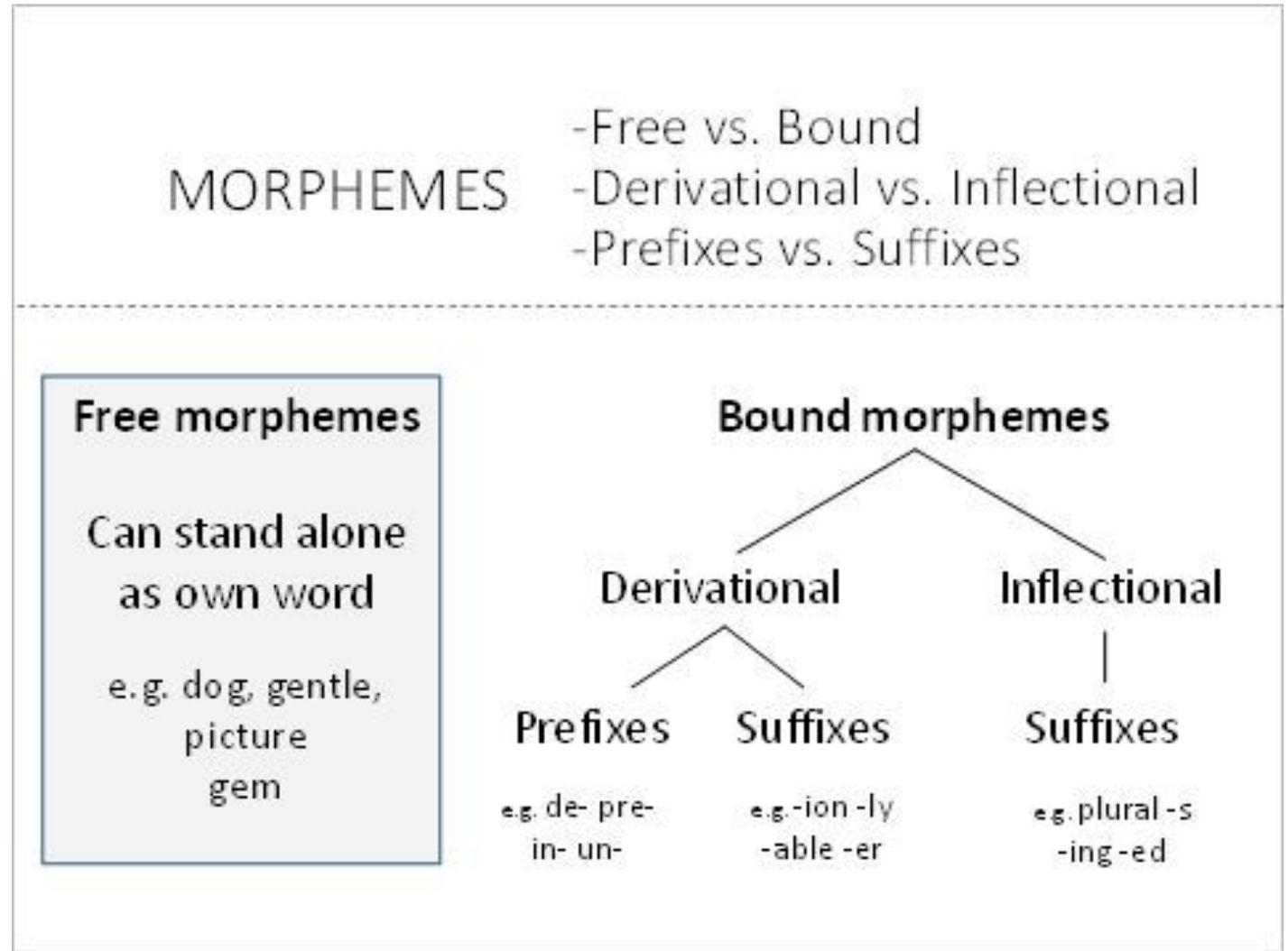
IDENTIFIER
"x"

OPERATOR
">"

NUMBER
"3.1"

Morphological analysis is the process of identifying the morphemes of a word.

A morpheme is a basic unit of English language construction, which is a small element of a word, that carries meaning.



How to implement this in SEO (and should you)

On-Page Analysis

Use Case: Perform lexical and morphological analysis to:

- Understand how often target keywords appear in their core form.
- Identify variations, including free morphemes and compositions with bound morphemes.

Benefit: Gain an accurate understanding of keyword usage variations for optimized content.

SERP Analysis

Use Case: Apply lexical and morphological analysis to SERP results.

- Understand the importance of specific keywords and their variations for ranking.

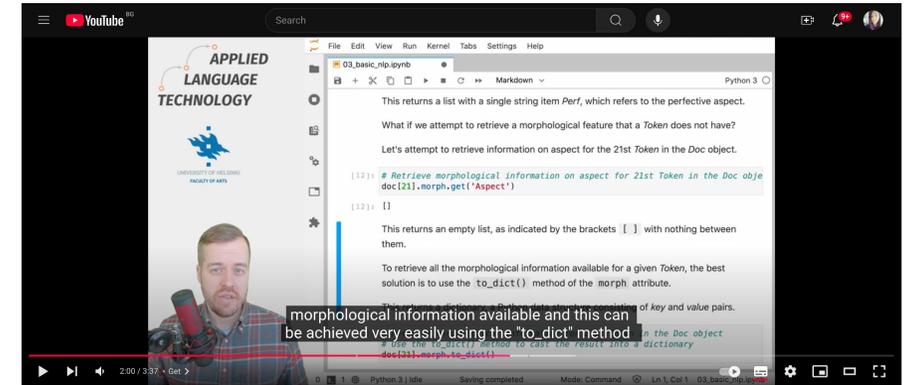
Note: This reveals trends, but remember: correlation \neq causation.

Keyword Research

Use Case: Integrate lexical and morphological analysis into your keyword database research.

- Evaluate morphemes alongside metrics like search volume and keyword difficulty.
- Identify key aspects of a topic your content should address.

Benefit: Understand how users are finding your pages and how they refer to services and products.



Morphological analysis using spaCy

Tools to use:



polyglot latest

Search docs

- Installation
- Language Detection
- Tokenization
- Command Line Interface
- Downloading Models
- Word Embeddings
- Part of Speech Tagging
- Named Entity Extraction
- Morphological Analysis**
- Languages Coverage
- Example
- Demo
- References
- Transliteration
- Sentiment
- polyglot

Docs » Morphological Analysis [Edit on GitHub](#)

Morphological Analysis

Polyglot offers trained [morphessor models](#) to generate morphemes from words. The goal of the Morpho project is to develop unsupervised data-driven methods that discover the regularities behind word forming in natural languages. In particular, Morpho project is focussing on the discovery of morphemes, which are the primitive units of syntax, the smallest individually meaningful elements in the utterances of a language. Morphemes are important in automatic generation and recognition of a language, especially in languages in which words may have many different inflected forms.

Languages Coverage

Using polyglot vocabulary dictionaries, we trained morphessor models on the most frequent words 50,000 words of each language.

```
from polyglot.downloader import downloader
print(downloader.supported_languages_table("morph2"))
```

1. Piedmontese language	2. Lombard language	3. Gan Chinese
4. Sicilian	5. Scots	6. Kirghiz, Kyrgyz
7. Pashto, Pushto	8. Kurdish	9. Portuguese
10. Kannada	11. Korean	12. Khmer
13. Kazakh	14. Ilokano	15. Polish
16. Panjabi, Punjabi	17. Georgian	18. Chuvash
19. Alemannic	20. Czech	21. Welsh
22. Catalan	23. Catalan, Valencian	24. Maltese

Syntax analysis (parsing)

For Search Marketing Lovers

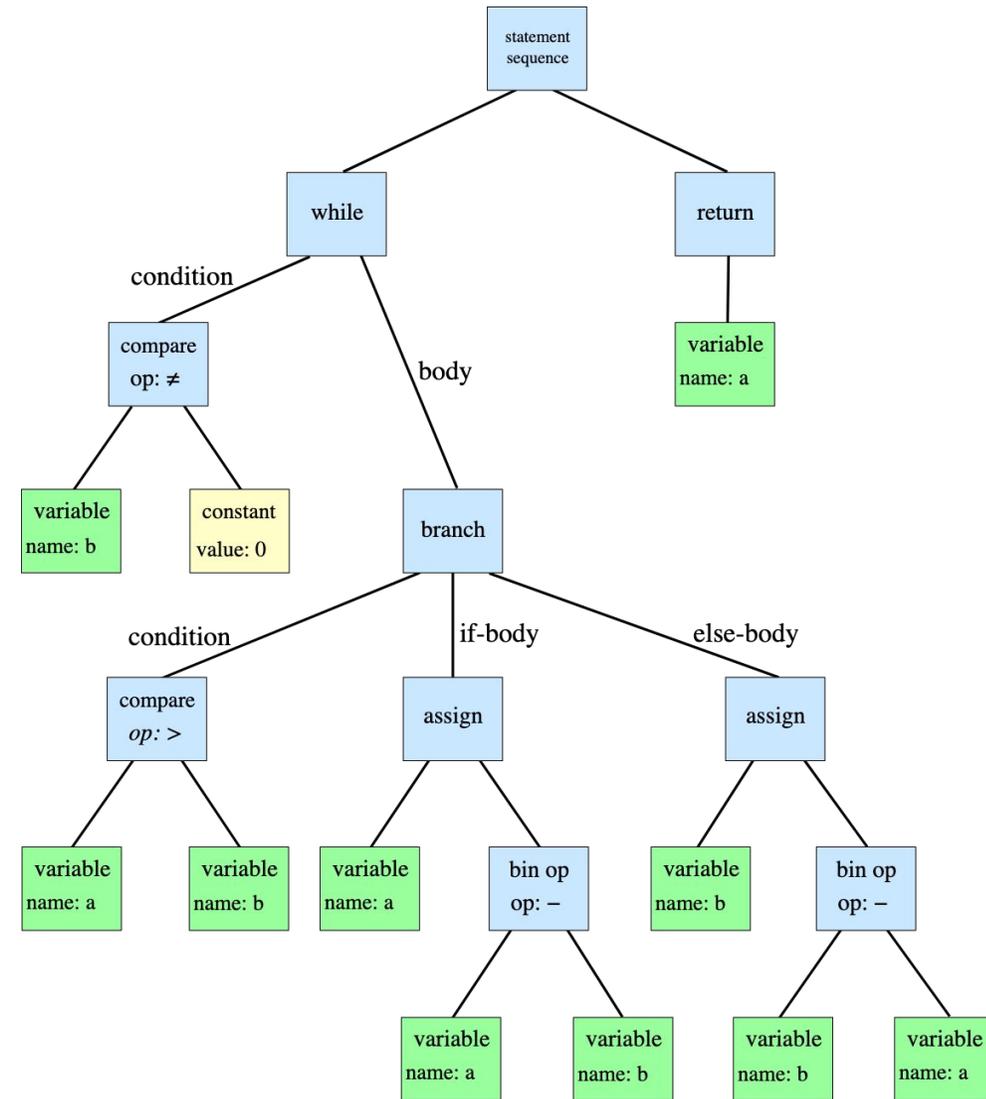
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Syntax analysis or parsing is the process of checking grammar, word arrangement, and overall – the identification of relationships between words and whether those make sense.

The process involves examination of (not only) all words and phrases in a sentence, and the **structures** between them.

As part of the process, there's a visualisation built of semantic relationships referred to as a **syntax tree**.



How to do this in practice (no-code)

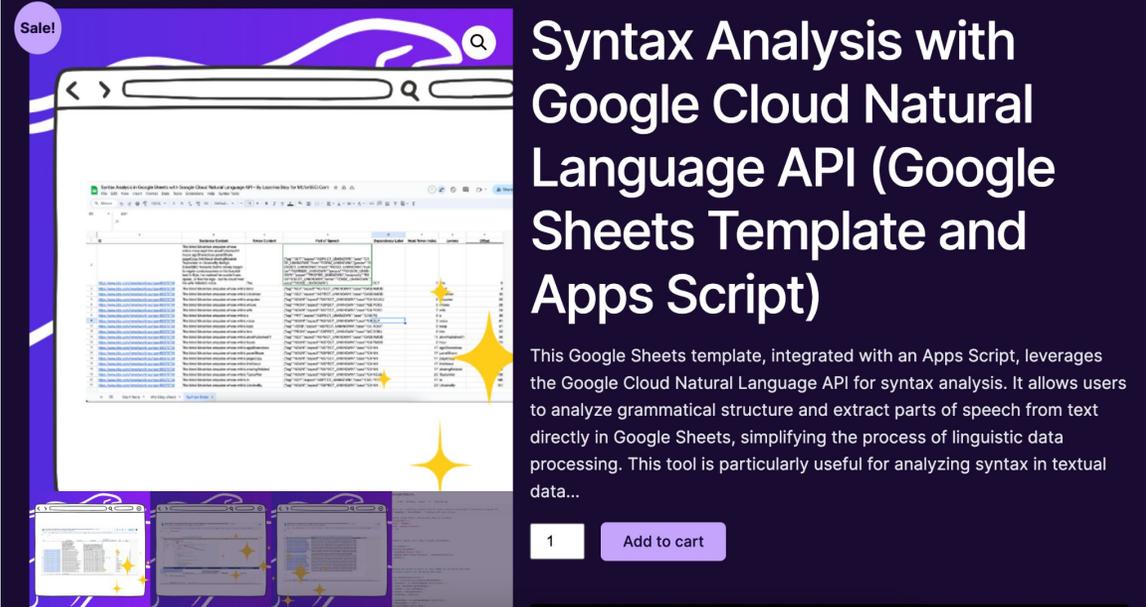
Tool to use:

Google Natural Language API - Syntax Analysis module

- can analyse syntax in both short snippets of text and longer documents

The API will split the text into sentences anyway, so there wouldn't be any loss of quality of the analysis for longer or shorter lengths.

You can do syntax analysis in organic search marketing in texts like your users' social comments, page titles, or competitor content.



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

This Google Sheets template, integrated with an Apps Script, leverages the Google Cloud Natural Language API for syntax analysis. It allows users to analyze grammatical structure and extract parts of speech from text directly in Google Sheets, simplifying the process of linguistic data processing. This tool is particularly useful for analyzing syntax in textual data...

1 Add to cart

Google Cloud CloudNLPproject api

API Credentials + CREATE CREDENTIALS DELETE RESTORE DELETED CREDENTIALS

Create credentials to access your enabled APIs. [Learn more](#)

Remember to configure the OAuth consent screen with information about your application. [CONFIGURE CONSENT SCREEN](#)

API Keys

<input type="checkbox"/>	Name	Creation date ↓	Actions
<input type="checkbox"/>	 API key 1	Feb 25, 2024	SHOW KEY ⋮

OAuth 2.0 Client IDs

<input type="checkbox"/>	Name	Creation date ↓	Client ID	Actions
No OAuth clients to display				

Service Accounts

<input type="checkbox"/>	Email	Actions
No service accounts to display		

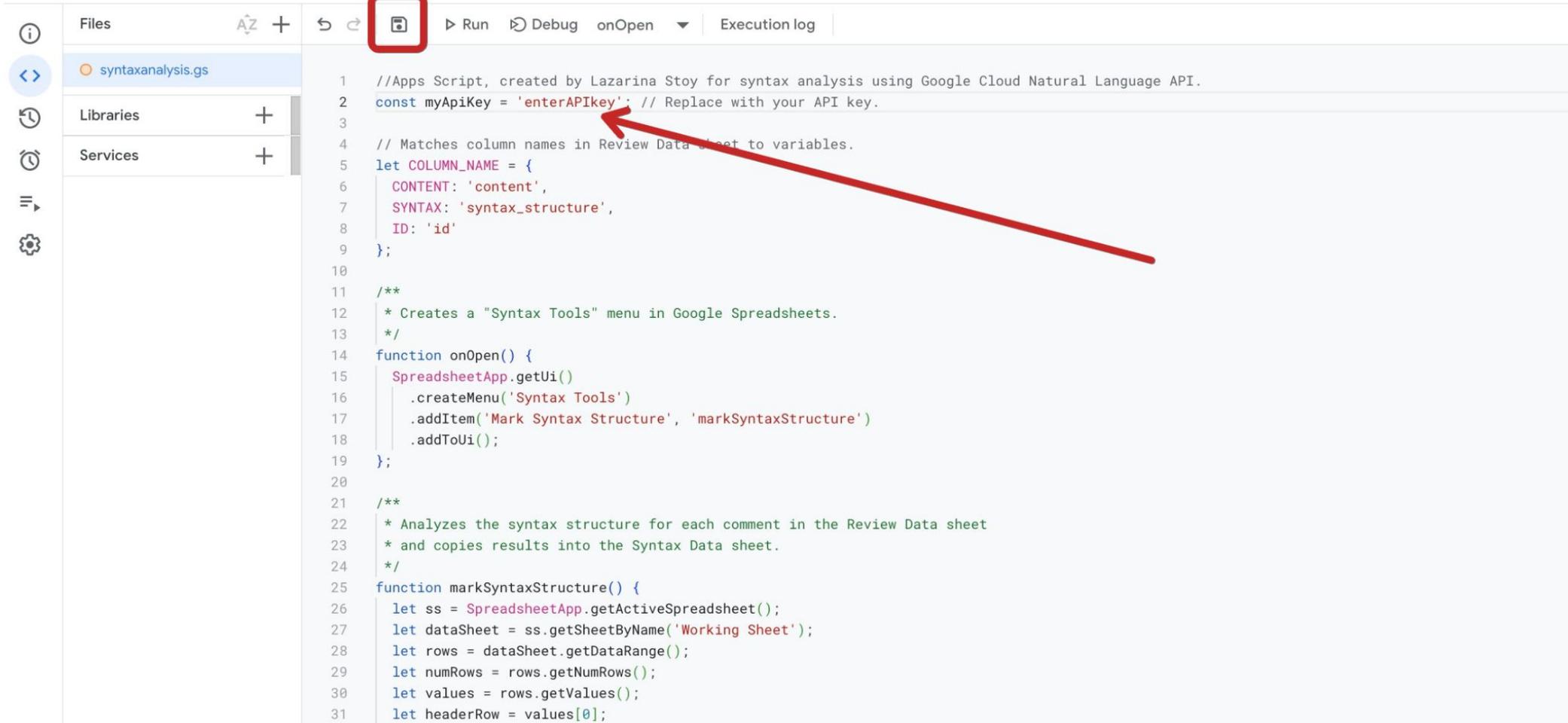
API key created

Use this key in your application by passing it with the `key=API_KEY` parameter.

Your API key 

 This key is unrestricted. To prevent unauthorized use, we recommend restricting where and for which APIs it can be used. [Edit API key](#) to add restrictions. [Learn more](#)

[CLOSE](#)



```
1 //Apps Script, created by Lazarina Stoy for syntax analysis using Google Cloud Natural Language API.
2 const myApiKey = 'enterAPIkey'; // Replace with your API key.
3
4 // Matches column names in Review Data sheet to variables.
5 let COLUMN_NAME = {
6   CONTENT: 'content',
7   SYNTAX: 'syntax_structure',
8   ID: 'id'
9 };
10
11 /**
12  * Creates a "Syntax Tools" menu in Google Spreadsheets.
13  */
14 function onOpen() {
15   SpreadsheetApp.getUi()
16     .createMenu('Syntax Tools')
17     .addItem('Mark Syntax Structure', 'markSyntaxStructure')
18     .addToUi();
19 };
20
21 /**
22  * Analyzes the syntax structure for each comment in the Review Data sheet
23  * and copies results into the Syntax Data sheet.
24  */
25 function markSyntaxStructure() {
26   let ss = SpreadsheetApp.getActiveSpreadsheet();
27   let dataSheet = ss.getSheetByName('Working Sheet');
28   let rows = dataSheet.getDataRange();
29   let numRows = rows.getNumRows();
30   let values = rows.getValues();
31   let headerRow = values[0];
```

1. Keep the top-level navigation

	A	B	C
1	id	content	syntax_structure
2	https://www.bbc.com/news/world-europe-68376700	The blind Ukrainian amputee whose wife's voice kept him alivePublished11 hours agoShareclose pan	complete
3	https://www.bbc.com/blog/world-europe-68255490	Exhausted Ukraine struggles to find new men for front linePublished12 FebruaryShareclose panelSha	complete
4	https://www.bbc.com/news/world-us-canada-68395414	South Carolina primary: Donald Trump easily defeats Nikki Haley in her home statePublished8 hours	complete
5	https://www.bbc.com/news/entertainment-arts-68362810	Kim Petras on sexual liberation and fighting TikTokPublished10 hours agoShareclose panelShare pag	complete
6	https://www.bbc.com/news/entertainment-arts-68395354	SAG Awards red carpet 2024: From Margot Robbie to Emma StonePublished10 hours agoShareclose	complete
7	https://www.bbc.com/news/entertainment-arts-68395355	SAG Awards 2024: Oppenheimer dominates ahead of OscarsPublished8 hours agoShareclose panel	complete
8	https://www.bbc.com/news/world-middle-east-68395173	US and UK carry out fresh strikes on Houthi targets in YemenPublished12 hours agoShareclose pane	complete
9	https://www.bbc.com/news/uk-scotland-glasgow-west-679806	Inside the long-abandoned tunnel beneath the ClydePublished2 hours agoShareclose panelShare pag	complete
10	https://www.bbc.com/news/world-europe-68322527	Ukraine war: Is Avdiivka's fall a sign Russia is turning the tide?Published17 FebruaryShareclose pane	complete
11	https://www.bbc.com/news/uk-wales-68210255	Travel: How a £525 bet gave birth to your morning commutePublished4 hours agoShareclose panelS	complete
12	https://www.bbc.com/news/world-europe-68384341	Two years into Russia's invasion, exhausted Ukrainians refuse to give upPublished1 day agoShareclo	complete
13	https://www.bbc.com/news/world-europe-68393412	Anthill resident "I'm no politician," confesses Valeriy, a man in his 80s perched outside a grocery shop.	complete
14	https://www.bbc.com/news/world-europe-68393412	Authorities return body of Alexei Navalny to mother 8 days after deathPublished18 hours agoShareclo	complete
15	https://www.bbc.com/news/entertainment-arts-68391330	Wendy Williams thanks fans for support after dementia and aphasia diagnosisPublished19 hours ago	complete
16	https://www.bbc.com/news/world-asia-68378651	Japan naked festival: Women join Hadaka Matsuri for first timePublished10 hours agoShareclose pan	complete
17	https://www.bbc.com/news/world-europe-68395030	Alexei Navalny: Dissent is dangerous in Russia, but activists refuse to give upPublished10 hours ago	complete
18	https://www.bbc.com/news/world-europe-68359252	Rosenberg: How two years of war in Ukraine changed RussiaPublished3 days agocommentsCommer	complete
19	https://www.bbc.com/news/entertainment-arts-68395352	SAG Award winners 2024: The full list of nominees and winsPublished13 hours agoShareclose panelS	complete
20	https://www.bbc.com/news/entertainment-arts-68362811	Stray Kids: How K-Pop took over the global charts in 2023Published3 days agoShareclose panelSha	complete
21	https://www.bbc.com/news/entertainment-arts-68317736	Gareth Edwards: The Creator director on shaking up Hollywood's visual effectsPublished1 day agoSh	complete
22	https://www.bbc.com/news/newsbeat-68382142	Chuckie: 1Xtra presenter feels R&B has special year aheadPublished1 day agoShareclose panelSha	complete
23	https://www.bbc.com/news/entertainment-arts-68338730	Alia Bhatt: The young Bollywood star taking on HollywoodPublished2 days agoShareclose panelSha	complete
24	https://www.bbc.com/news/10725415	If you are reading this page and can't see the form you will need to visit the mobile version of the BBC v	complete
25	https://www.bbc.com/news/entertainment-arts-68380093	John Savident: Coronation Street's Fred Elliott dies aged 86Published1 day agoShareclose panelSha	complete
	https://www.bbc.com/news/entertainment-arts-68384657	Tyler Perry halts £630m film studio build over AI fearsPublished1 day agoShareclose panelShare panel	complete

2. Paste your content here - a unique identifier (URL, ID) and the content for syntax analysis

3. Clear this column's contents.

Working sheet



Syntax Analysis in Google Sheets with Google Cloud Natural Language API - By Lazarina Stoy for MLforSEO.Com ☆ 🗑️ ☁️

File Edit View Insert Format Data Tools Extensions Help Syntax Tools

🔍 Menus ↶ ↷ 🖨️ 🗑️ 100% ▾ | £ % .0_↓ .00_→ 123

Mark Syntax Structure



A1 ▾ | *fx* id

E9 DEP

ID	Sentence Content	Token Content	Part of Speech	Dependency Label	Head Token Index	Lemma	Offset
2	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's voice kept him alivePublished11 hours agoShareclose panelShare pageCopy linkAbout sharingRelated TopicsWar in UkraineBy Keiligh BakerBBC NewsAs Serhiy slowly began to regain consciousness in his hospital bed in Kyiv, he realised he couldn't see, speak, or feel his legs - but he could hear his wife Valeria's voice.	The	{ "tag": "DET", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN", "form": "FORM_UNKNOWN", "gender": "GENDER_UNKNOWN", "mood": "MOOD_UNKNOWN", "number": "NUMBER_UNKNOWN", "person": "PERSON_UNKNOWN", "proper": "PROPER_UNKNOWN", "reciprocity": "RECIPROCIITY_UNKNOWN", "tense": "TENSE_UNKNOWN", "voice": "VOICE_UNKNOWN" }	DET	3	The	0
3	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's blind	blind	{ "tag": "ADJ", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	AMOD	3	blind	4
4	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's Ukrainian	Ukrainian	{ "tag": "ADJ", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	AMOD	3	Ukrainian	10
5	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's amputee	amputee	{ "tag": "NOUN", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	NSUBJ	8	amputee	20
6	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's whose	whose	{ "tag": "PRON", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	GEPOSS	5	whose	28
7	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's wife	wife	{ "tag": "NOUN", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	POSS	7	wife	34
8	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's s	s	{ "tag": "PRT", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	PS	5	s	38
9	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's voice	voice	{ "tag": "NOUN", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	DEP	3	voice	41
10	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's kept	kept	{ "tag": "VERB", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	ROOT	8	keep	47
11	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's him	him	{ "tag": "PRON", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	DOBJ	8	him	52
12	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's alivePublished11	alivePublished11	{ "tag": "ADJ", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	AMOD	11	alivePublished11	56
13	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's hours	hour	{ "tag": "NOUN", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	TMOD	8	hour	73
14	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's agoShareclose	agoShareclose	{ "tag": "NOUN", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	NN	17	agoShareclose	79
15	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's panelShare	panelShare	{ "tag": "NOUN", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	NN	17	panelShare	93
16	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's pageCopy	pageCopy	{ "tag": "NOUN", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	NN	17	pageCopy	104
17	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's linkAbout	linkAbout	{ "tag": "NOUN", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	NN	17	linkAbout	113
18	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's sharingRelated	sharingRelated	{ "tag": "NOUN", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	NN	17	sharingRelated	123
19	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's TopicsWar	TopicsWar	{ "tag": "NOUN", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	NSUBJ	25	TopicsWar	138
20	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's in	in	{ "tag": "ADP", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	PREP	17	in	148
21	https://www.bbc.com/news/world-europe-68376700 The blind Ukrainian amputee whose wife's UkraineBy	UkraineBy	{ "tag": "NOUN", "aspect": "ASPECT_UNKNOWN", "case": "CASE_UNKNOWN" }	NN	23	UkraineBy	151

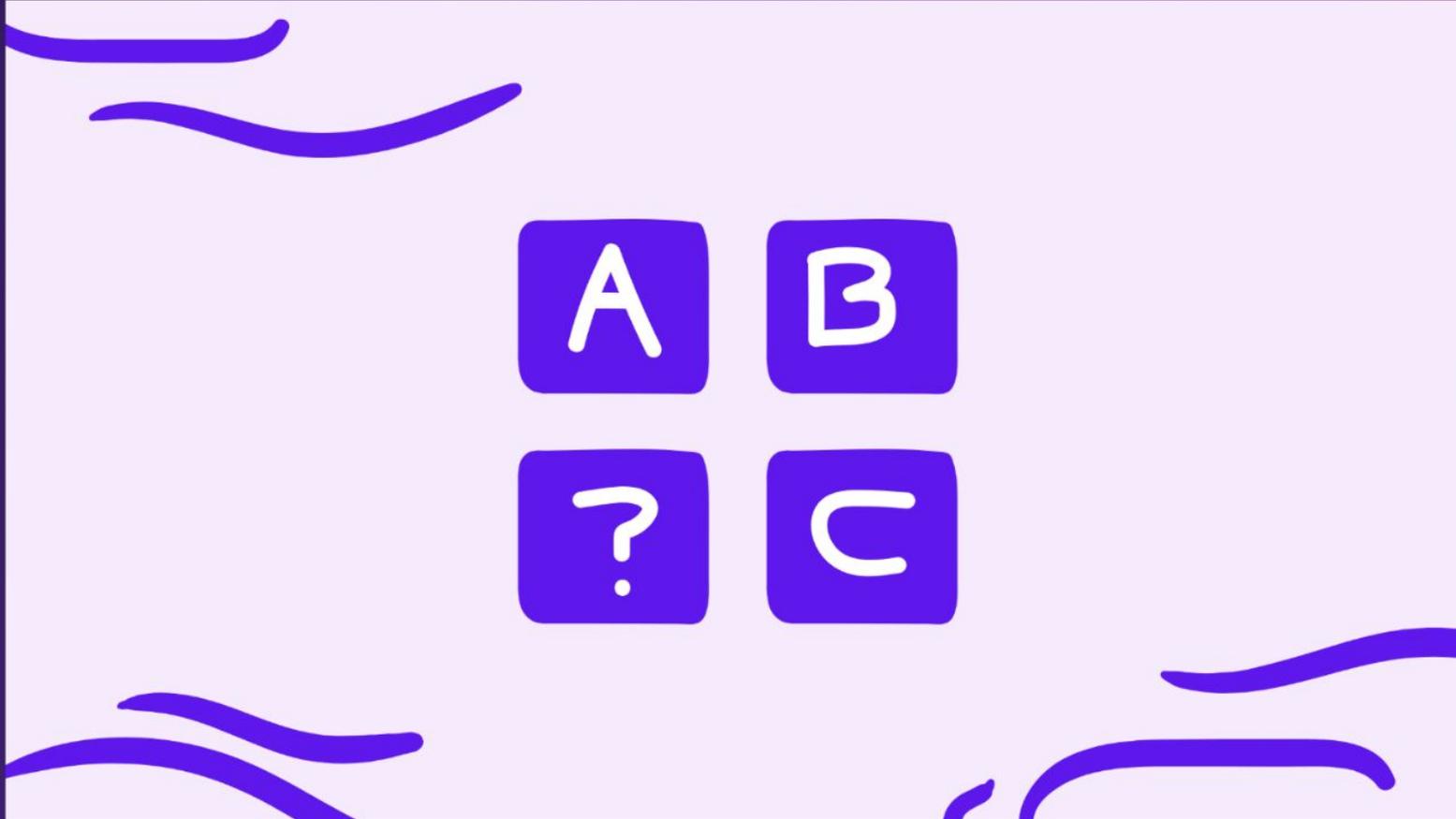
Syntax Data

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

Beginner

Google Cloud Natural Language API

Google Sheets (Apps Script)



How to implement this in SEO (and should you)

Content Audit & Quality Maintenance

Use Case: Analyze sentence structures and parts of speech in website content.

- Identify and simplify complex sentences to enhance readability.
- Regularly scan for syntactic errors and inconsistencies to maintain quality.

Benefit: Improved user engagement as a result of less grammatical or syntax errors, improved content clarity, content readability and structure.

User review analysis to adapt brand voice

Use Case: Analyze syntax in customer reviews or user-generated content.

- Adjust tone, complexity, and style to match audience preferences.

Benefit: Improved user experience and engagement with your content.

Keyword research

Use Case: Examine the grammatical roles of words in searches and content.

- Understand how nouns, verbs, and adjectives relate to keyword effectiveness.
- Uncover keyword-entity patterns
- Create richer, contextually relevant content aligned with user intent.

Benefit: Better understanding of keyword semantics.

Semantic analysis

For Search Marketing Lovers

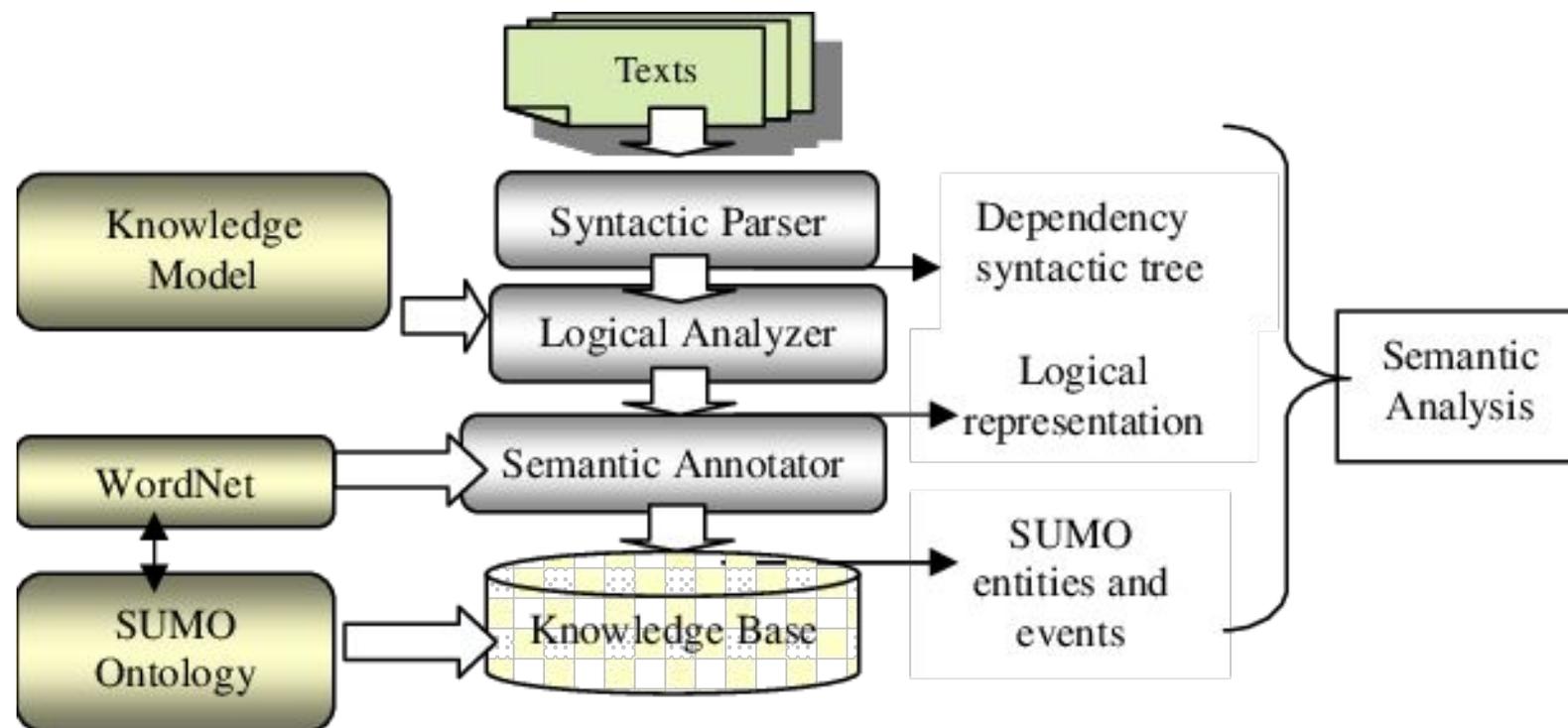
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With semantic analysis the analysis aims to understand the meaning in a statement.

This type of analysis is focused on uncovering the definitions of words, phrases, and sentences and identifying whether the way words are organized in a sentence makes sense **semantically**.

This task is performed by mapping the syntactic structure, and checking for logic in the presented relationships between entities, words, phrases and sentences in the text.

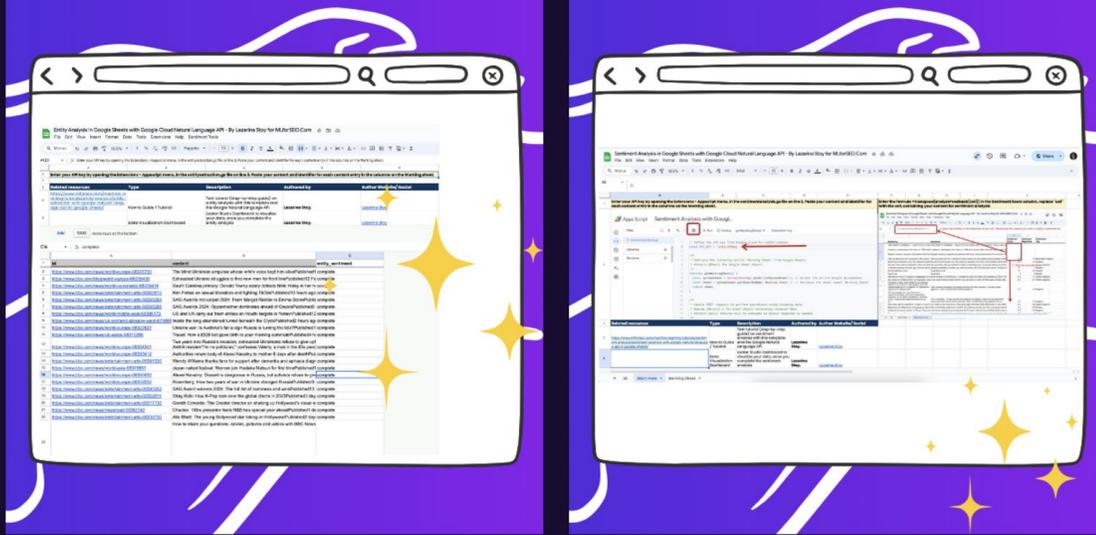


How to do this in practice (no-code)

Tool to use:

Google's Natural Language API, has a modules for:

- Entity identification – inspects the given text for known entities, and returns information about those entities.
- Entity sentiment analysis – combines both entity analysis and sentiment analysis and attempts to determine the sentiment (positive or negative) expressed about entities within the text.
- Sentiment analysis – analyses text and identifies the dominant emotional opinion within it, determining whether the writer's attitude is positive, negative, or neutral.



The image displays two side-by-side screenshots of Google Sheets templates. The left screenshot, titled 'Entity Analysis in Google Sheets with Google Cloud Natural Language API', shows a table with columns for 'Entity', 'Sentiment', and 'Score'. The right screenshot, titled 'Sentiment Analysis in Google Sheets with Google Cloud Natural Language API', shows a table with columns for 'Text', 'Sentiment', and 'Score'. Both screenshots include a 'Default Sorting' label at the top right and a purple 'Add to cart' button at the bottom.

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

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

Add to cart

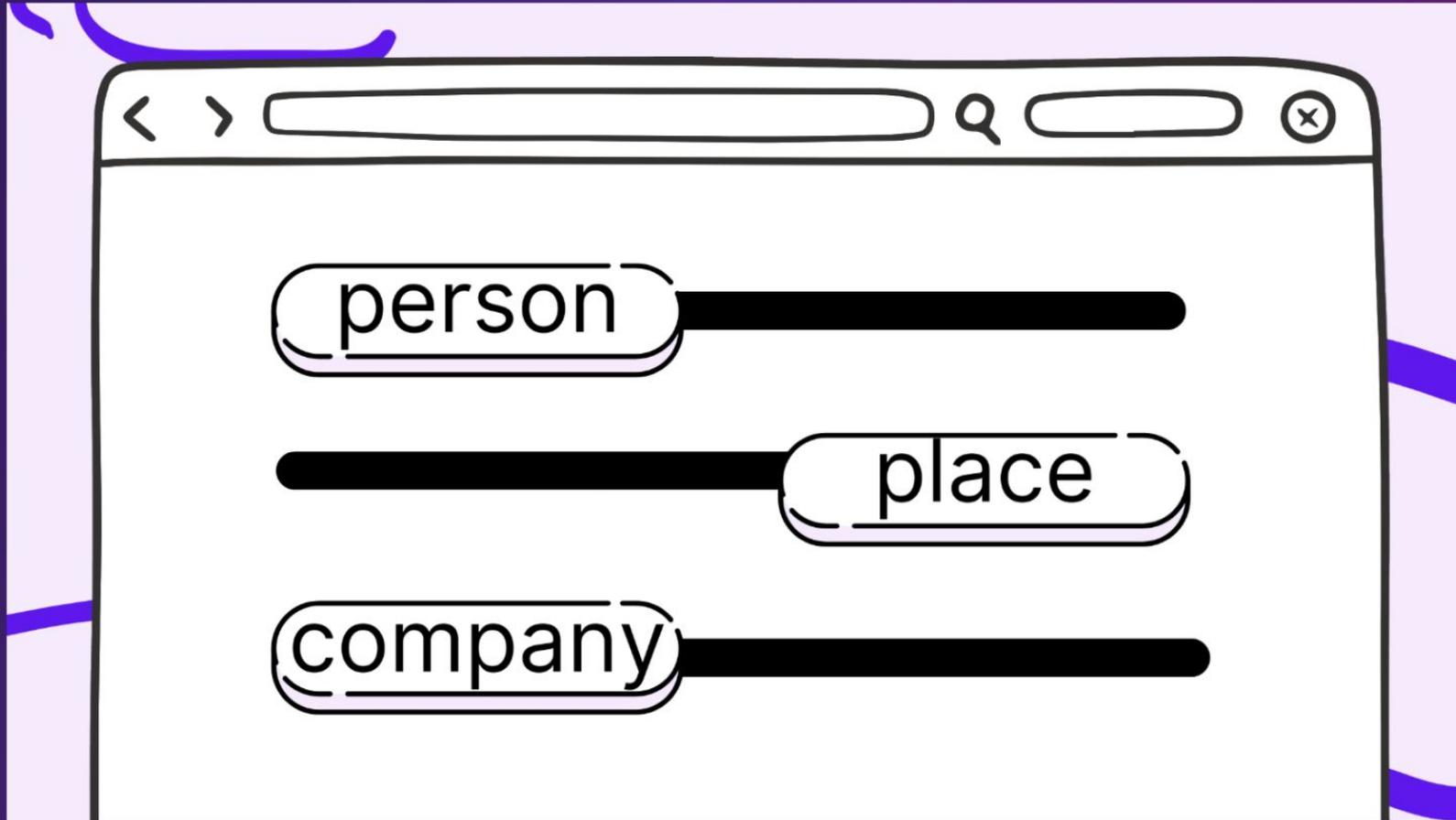
Add to cart

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

Beginner

Google Cloud Natural Language API

Google Sheets (Apps Script)



Search bar with 'Menus' and various spreadsheet navigation icons (undo, redo, print, copy, paste, zoom, etc.)

A:B fx id

	A	B	C
1	id	content	entity_sentiment
2	https://www.bbc.com/news/world-e	The blind Ukrainian amputee whos	
3	https://www.bbc.com/blog/world-ev	Exhausted Ukraine struggles to fir	
4	https://www.bbc.com/news/world-u	South Carolina primary: Donald Tr	
5	https://www.bbc.com/news/enterta	Kim Petras on sexual liberation an	
6	https://www.bbc.com/news/enterta	SAG Awards red carpet 2024: Fro	
7	https://www.bbc.com/news/enterta	SAG Awards 2024: Oppenheimer	
8	https://www.bbc.com/news/world-r	US and UK carry out fresh strikes	
9	https://www.bbc.com/news/uk-scof	Inside the long-abandoned tunnel	
10	https://www.bbc.com/news/world-e	Ukraine war: Is Avdiivka's fall a sig	
11	https://www.bbc.com/news/uk-walk	Travel: How a £525 bet gave birth	
12	https://www.bbc.com/news/world-e	Two years into Russia's invasion, c	
13	https://www.bbc.com/news/world-e	Anthill resident "I'm no politician," c	
14	https://www.bbc.com/news/enterta	Authorities return body of Alexei N	
15	https://www.bbc.com/news/enterta	Wendy Williams thanks fans for su	
16	https://www.bbc.com/news/world-e	Japan naked festival: Women join	
17	https://www.bbc.com/news/world-e	Alexei Navalny: Dissent is danger	
18	https://www.bbc.com/news/world-e	Rosenberg: How two years of war	
19	https://www.bbc.com/news/enterta	SAG Award winners 2024: The ful	
20	https://www.bbc.com/news/enterta	Stray Kids: How K-Pop took over t	
21	https://www.bbc.com/news/enterta	Gareth Edwards: The Creator dire	
22	https://www.bbc.com/news/newsb	Chuckie: 1Xtra presenter feels R&	
		Alia Bhatt: The young Bollywood s	
		How to share your questions, stori	

	A	B	C
1	id	content	entity_sentiment
23		How to share your questions, stories, pictures and v	
24	https://www.bbc.com/news/107254	If you are reading this page and can't see the form y	complete
25	https://www.bbc.com/news/enterta	John Savident: Coronation Street's Fred Elliott dies	complete
26	https://www.bbc.com/news/enterta	Tyler Perry halts £630m film studio build over AI fea	complete
27	https://www.bbc.com/news/uk-eng	Jan Latham-Koenig: Music conductor admits child s	complete
28	https://www.bbc.com/news/uk-wal	Strictly's Amy Dowden says cancer check-up reveals	complete
29	https://www.bbc.com/news/articles	Foodbank fuelled by Pattison Arctic ChallengeImage	complete
30	https://www.bbc.com/news/articles	Film made for just £5k premieres at town cinemaIma	complete
31	https://www.bbc.com/news/uk-eng	Bristol artist's new work honours Massive Attack's T	complete
32	https://www.bbc.com/news/10628	BBC News alerts and newslettersPublished 19 April	complete
33	https://www.bbc.com/news/uk-eng	Marlow Film Studios plans to invest £20m in local in	complete
34	https://www.bbc.com/news/enterta	Avatar: The Last Airbender receives mixed reviews	complete
35	https://www.bbc.com/news/uk-eng	Mum of Scout who died on trip in 1998 backs inquiry	complete
36	https://www.bbc.com/news/articles	Tate masterpieces make first stop on tourImage sou	complete
37	https://www.bbc.com/news/articles	Connect music festival cancelled for 2024Image sou	complete
38	https://www.bbc.com/news/articles	How the art world adopted Glasgow 'Slum Boy' Juan	complete
39	https://www.bbc.com/news/uk-wal	Queer as Folk: How Russell T Davies' drama change	complete
40	https://www.bbc.com/news/enterta	Graham Norton leaves Virgin Radio weekend showP	complete
41	https://www.bbc.com/news/world-e	Religious artwork discovered in Guernsey private col	complete
42	https://www.bbc.com/news/articles	Festival replaces 'not appropriate' act last minutelma	complete
43	https://www.bbc.com/news/enterta	Wicked Little Letters: Olivia Colman on why abusive	complete
44	https://www.bbc.com/news/articles	Bullet from John Lennon killer's gun up for auctionIm	complete
45	https://www.bbc.com/news/world-e	Ukraine war: The men who don't want to fightPublis	complete
46	https://www.bbc.com/news/world-e	Civil defence traineeAnton doesn't think it's good tha	complete
47	https://www.bbc.com/news/world-e	Ukraine war: Nothing but rubble in shattered ghost to	complete
48	https://www.bbc.com/news/world-e	Tucker Carlson: Putin takes charge as TV host gives	complete
49	https://www.bbc.com/news/scienc	Migrating species crucial to planet under threat, says	complete
50	https://www.bbc.com/news/scienc	World's first year-long breach of key 1.5C warming lir	complete
51	https://www.bbc.com/news/scienc	Intuitive Machines: Odysseus Moon lander 'tipped ov	complete
52	https://www.bbc.com/news/scienc	Pirate of the seas' great skua in big decline after bird	complete
53	https://www.bbc.com/news/uk-eng	Allestree Park: Biggest urban rewilding project gets £	complete
54	https://www.bbc.com/news/articles	Country park set for new management planImage so	complete
55	https://www.bbc.com/news/scienc	Trillion-tonne iceberg A23a spins on the spotPublis	complete

For each completed analysed text, a 'complete' entry will appear in column C, notifying you of the completion of the analysis for the entry



this menu will show you that the execution has started



ID	Entity	Type	Salience	Sentiment Score	Sentiment Magnitud	Number of menti	Metadata	Mentions
https://www.bbc.com/news/world-europe-68376700	Serhiy	PERSON	0.34382942	0	2.6	6	{}	Serhiy, Serhiy, Serhiy, Serhiy, Serhiy, Serhiy
https://www.bbc.com/news/world-europe-68376700	Valeria	PERSON	0.20473818	0	1.9	8	{}	wife, Valeria, Valeria, Valeria, Valeria, Valeria
https://www.bbc.com/news/world-europe-68376700	again.It	OTHER	0.07993547	0	0.3	3	{}	again.It, consciousness, pattern
https://www.bbc.com/news/world-europe-68376700	amputee	PERSON	0.03255884	0	1.3	1	{}	amputee
https://www.bbc.com/news/world-europe-68376700	men	PERSON	0.023478702	0	0	2	{}	men, men
https://www.bbc.com/news/world-europe-68376700	consciousness	OTHER	0.01324304	0	0	1	{}	consciousness
https://www.bbc.com/news/world-europe-68376700	legs	OTHER	0.012497222	0	0	1	{}	legs
https://www.bbc.com/news/world-europe-68376700	voice	OTHER	0.011640955	0	0	1	{}	voice
https://www.bbc.com/news/world-europe-68376700	voice	OTHER	0.011640955	0	0	1	{}	voice
https://www.bbc.com/news/world-europe-68376700	wife	PERSON	0.010622509	0	0	1	{}	wife
https://www.bbc.com/news/world-europe-68376700	thought	OTHER	0.01018274	0	0	2	{}	thought, relief
https://www.bbc.com/news/world-europe-68376700	hospital bed	OTHER	0.009335752	0	0	1	{}	hospital bed
https://www.bbc.com/news/world-europe-68376700	BakerBBC NewsAs Serhiy	OTHER	0.00860053	0	0	1	{}	BakerBBC NewsAs Serhiy
https://www.bbc.com/news/world-europe-68376700	Ukrainian	LOCATION	0.007102234	0	0	10	{ "mid": "m/07t21", "wikipe	Ukrainian, Ukrainian, Ukraine, Ukraine, U
https://www.bbc.com/news/world-europe-68376700	soldier	PERSON	0.0063414737	0	0	1	{}	soldier
https://www.bbc.com/news/world-europe-68376700	sharingRelated TopicsW	OTHER	0.006290309	0	0	1	{}	sharingRelated TopicsWar
https://www.bbc.com/news/world-europe-68376700	Kyiv	LOCATION	0.006290309	0	0	1	{ "mid": "m/02sn34", "wikij	Kyiv
https://www.bbc.com/news/world-europe-68376700	pageCopy linkAbout	OTHER	0.005526677	0	0	1	{}	pageCopy linkAbout
https://www.bbc.com/news/world-europe-68376700	agoShareclose panelShi	OTHER	0.005526677	0	0	1	{}	agoShareclose panelShare
https://www.bbc.com/news/world-europe-68376700	UkraineBy Keiligh	OTHER	0.005526677	0	0	1	{}	UkraineBy Keiligh
https://www.bbc.com/news/world-europe-68376700	Russia	LOCATION	0.005216035	0	0.2	6	{ "wikipedia_url": "https://e	Russia, Russia, Russia, Russia, Russia,
https://www.bbc.com/news/world-europe-68376700	tube	OTHER	0.005082654	0	0	1	{}	tube
https://www.bbc.com/news/world-europe-68376700	consciousness	OTHER	0.0050217225	0	0	2	{}	consciousness, consciousness
https://www.bbc.com/news/world-europe-68376700	dreams	OTHER	0.004847212	-0.4	0.8	1	{}	dreams
https://www.bbc.com/news/world-europe-68376700	wounds	OTHER	0.004582253	0	0	2	{}	wounds, wounds
https://www.bbc.com/news/world-europe-68376700	throat	OTHER	0.004465256	-0.1	0.1	1	{}	throat
https://www.bbc.com/news/world-europe-68376700	panic	OTHER	0.004465256	0	0	1	{}	panic
https://www.bbc.com/news/world-europe-68376700	darkness	OTHER	0.004465256	0	0	1	{}	darkness
https://www.bbc.com/news/world-europe-68376700	organisations	ORGANIZATION	0.004451084	0	0	1	{}	organisations
https://www.bbc.com/news/world-europe-68376700	approach	OTHER	0.0041478397	0	0	1	{}	approach
https://www.bbc.com/news/world-europe-68376700	veterans	PERSON	0.0039000588	0	0.1	1	{}	veterans
https://www.bbc.com/news/world-europe-68376700	Ukrainians	PERSON	0.0031437073	0	0	2	{ "wikipedia_url": "https://e	Ukrainians, Ukrainians
https://www.bbc.com/news/world-europe-68376700	veteransHe	PERSON	0.0030598007	0	0.2	1	{}	veteransHe
https://www.bbc.com/news/world-europe-68376700	family	PERSON	0.002669544	0	0	1	{}	family
https://www.bbc.com/news/world-europe-68376700	injuries	OTHER	0.0024970311	0	0	1	{}	injuries
https://www.bbc.com/news/world-europe-68376700	invasion	EVENT	0.0024199213	0	0	1	{}	invasion
https://www.bbc.com/news/world-europe-68376700	consciousness	OTHER	0.0023867677	-0.3	0.3	1	{}	consciousness
https://www.bbc.com/news/world-europe-68376700	soldier	PERSON	0.0023730078	0	0	1	{}	soldier

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

Beginner

Google Cloud Natural Language API

Google Sheets (Apps Script)




```

72
73 // Assign emotion based on score and magnitude
74 emotion = assignEmotion(nlScore, nlMagnitude);
75 }
76
77 return [nlScore, nlMagnitude, emotion];
78 }
79
80 /**
81 * Assign a sentiment tag based on the score and magnitude.
82 * @param {number} score The sentiment score.
83 * @param {number} magnitude The sentiment magnitude.
84 * @return {string} The sentiment tag.
85 */
86 function assignEmotion(score, magnitude) {
87 // Adjusting thresholds for better categorization
88 if (score > 0.5) {
89 | return magnitude > 3 ? 'Extremely Positive' : 'Positive';
90 } else if (score > 0) {
91 | return magnitude > 2 ? 'Moderately Positive' : 'Slightly Positive';
92 } else if (score < 0 && score >= -0.5) {
93 | return magnitude > 2 ? 'Moderately Negative' : 'Slightly Negative';
94 } else if (score < -0.5) {
95 | return magnitude > 3 ? 'Extremely Negative' : 'Negative';
96 } else {
97 | return 'Neutral';
98 }
99 }
100
101 /**
102 * Call the Google Cloud Natural Language API to analyze sentiment.
103 * @param {string} description The text to analyze.
104 * @return {Object|null} The API response or null if an error occurs.
105 */
106 function retrieveSentiment(description) {
107 const apiEndpoint = 'https://language.googleapis.com/v1/documents:analyzeSentiment?key=' + API_KEY;
108
109 const nlData = {
110 document: {
111 | language: 'en-us',
112 | type: 'PLAIN_TEXT',

```

You can adjust these, make them more specified or granular, or skip the tag field altogether.

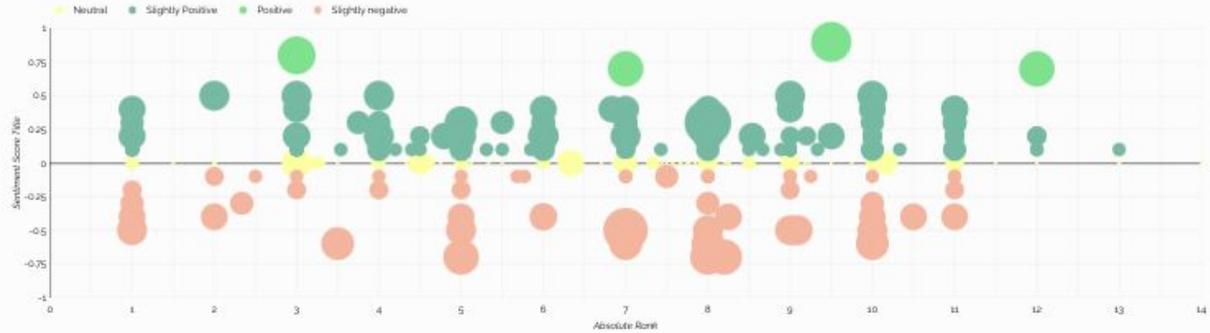
22/04/2024 23:52:38 - Explain and Send Screenshots
<https://script.google.com/u/1/home/projects/1Q5UK4IEfsyRF1zr1974ArLz8g6lU11Nk1PWR5ldPF1yPzWdsdneMQqV0/edit>

This page uses **Google's Natural Language Sentiment Analysis API** to analyse SERPs for a group of keywords, related to **online reputation management**. Use the filters below to **control the brand name** (of the ranking website), **search for a specific keyword**, or **control how many positions you want to see** (up to 10 web ranks, or otherwise - page 1; note: absolute position may differ due to positioning in a featured snippet).

Filter by site Search for a keyword Filter by position

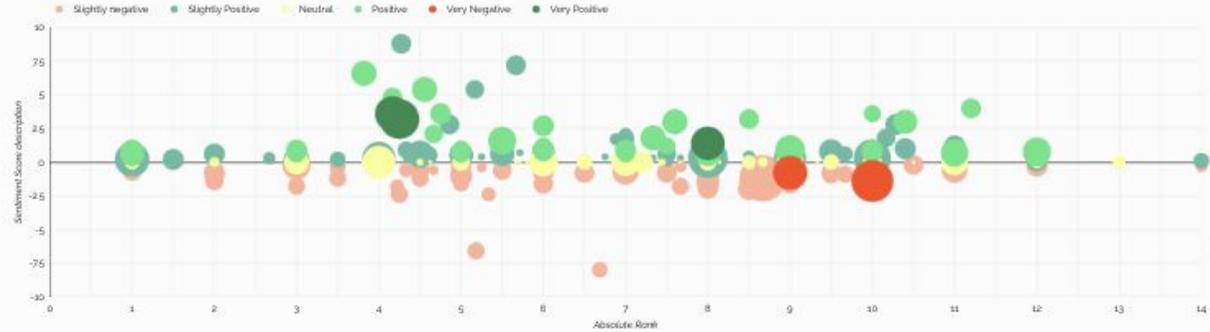
Sentiment Score and Magnitude of Titles

The bubble chart below shows the different entries, organised using absolute rank horizontally, and the sentiment score (sentiment polarity), expressed in the **entry's title** vertically. The size of the chart signals the magnitude, or otherwise - the strength of the opinion, and the colour shows the sentiment tag applied.



Sentiment Score and Magnitude of Meta Descriptions

The bubble chart below shows the different entries, organised using absolute rank horizontally, and the sentiment score (sentiment polarity), expressed in the **entry's meta description** vertically. The size of the chart signals the magnitude, or otherwise - the strength of the opinion, and the colour shows the sentiment tag applied.



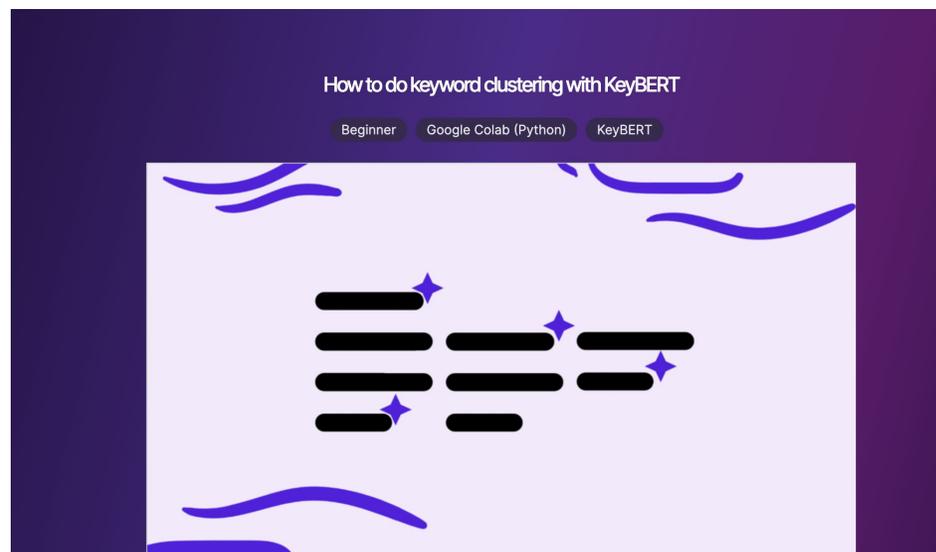
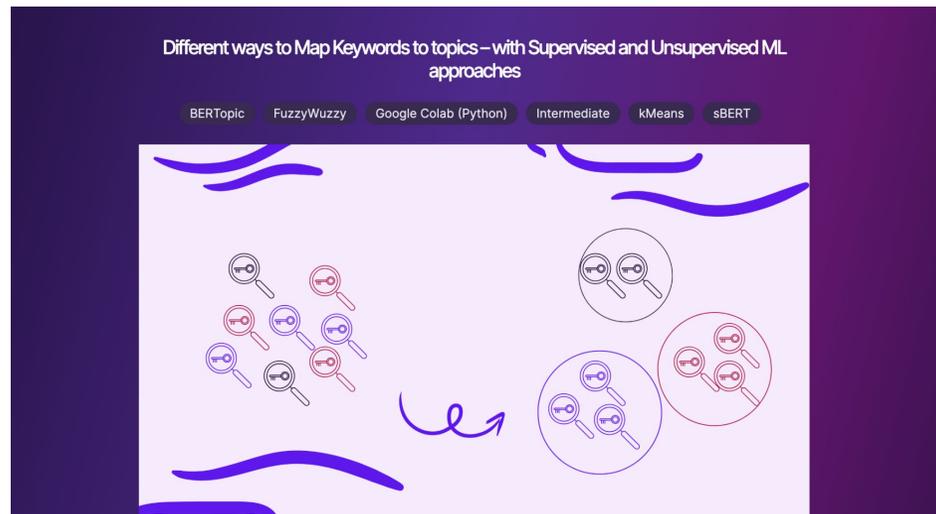
How to implement this in SEO (and should you)

Keyword research

Use cases:

- keyword to topic mapping
- keyword clustering
- entity analysis
- identification of patterns and EAV model keywords

.... so much more!



Semantic ML-enabled Keyword Research

Beginner-friendly course, designed to teach you everything you need to know about building a semantic keyword universe and understanding user searches.



-  Theory & applications
-  Practical walk-throughs & templates
-  Certificate of completion

Semantic ML-enabled Keyword Research Course by Lazarina Stoy.

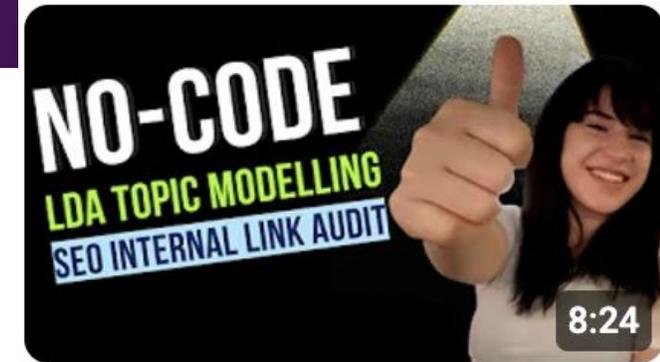
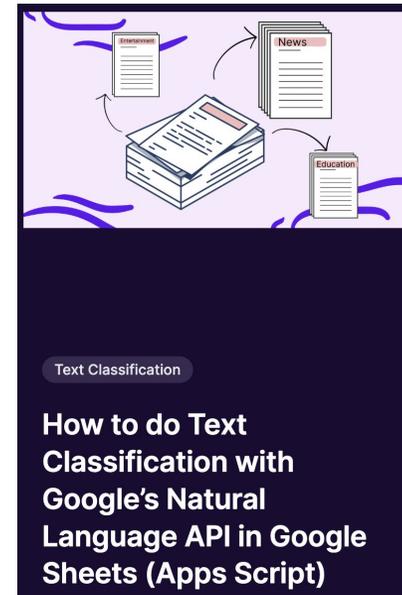
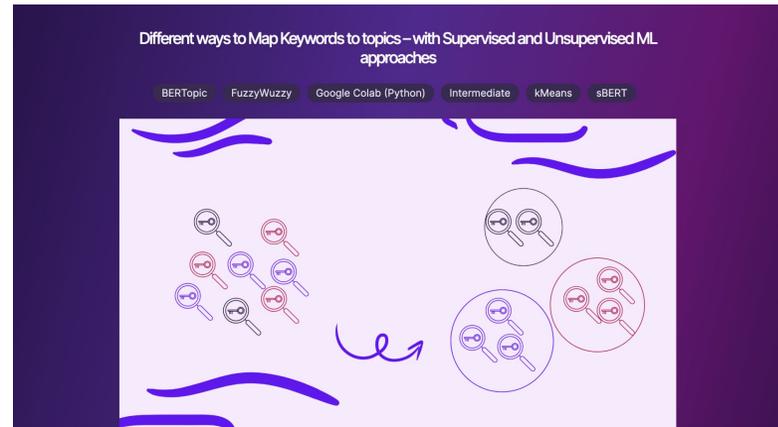
Topic modeling / Clustering/ Classification

Use cases:

- Group content into topics or assign labels (if you have them already)
- Group keywords into topics or clusters

Next steps:

- improve internal links
- improve site messaging
- improve keyword targeting and content planning



Topic Modeling with LDA
web-based app for finding...

Lazarina Stoy.
3.1K views • 2 years ago

Discourse integration

For Search Marketing Lovers

WE  SEO by **oncrawl**

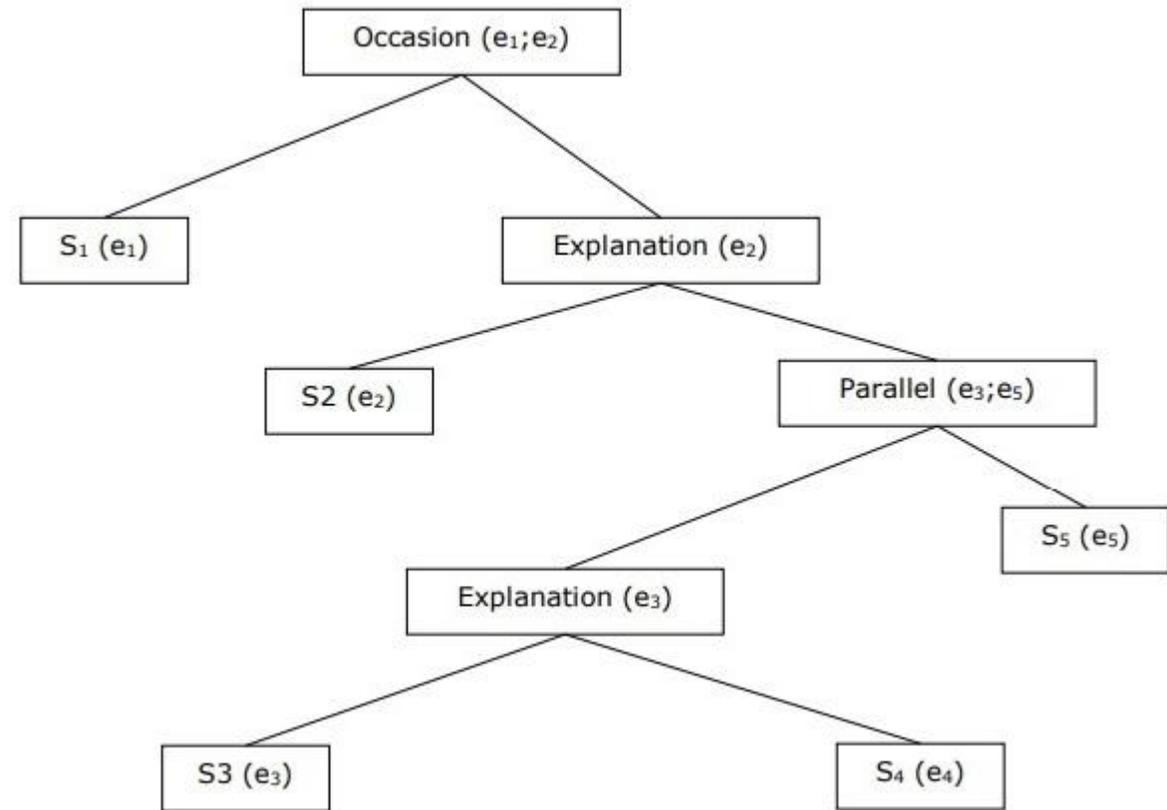


Discourse integration simply means **contextualisation**. Discourse integration is the analysis and identification of the larger context for any smaller part of natural language structure (e.g. a phrase, word or sentence).

When analyzing the structure of text, sentences are broken up and analyzed and also considered in the context of the sentences that precede and follow them, and the impact that they have on the structure of text.

Tasks might include:

- information extraction,
- conversation analysis,
- text summarisation,
- discourse analysis.



How to do this in practice (no-code)

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

Beginner

Google Cloud Natural Language API

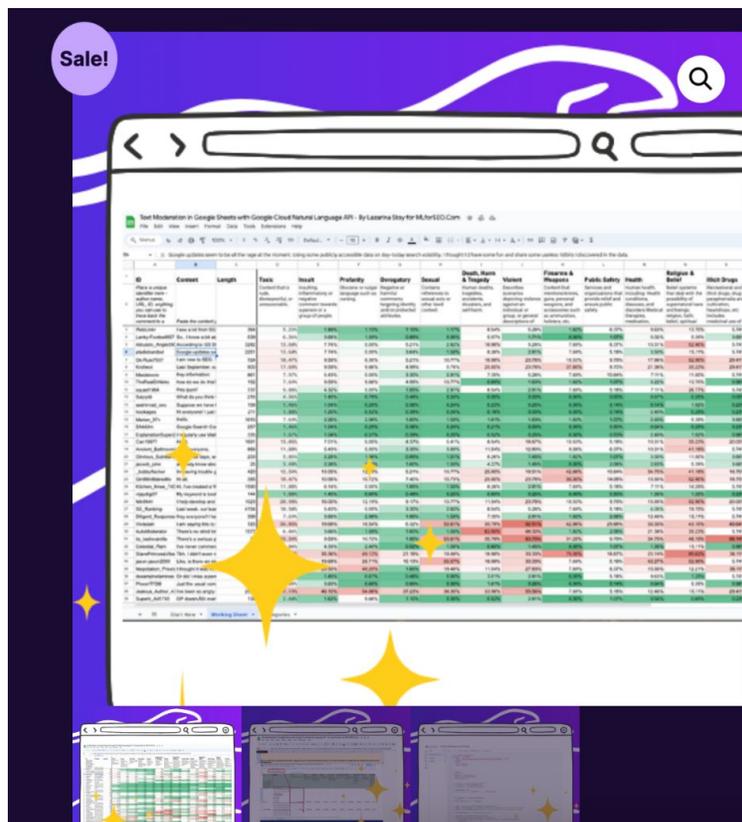
Google Sheets (Apps Script)



In organic search marketing there are several content sources that can be suitable for moderation.

Consider analysing

- user-generated content on your website (comments users have left on your website),
- social comments that have tagged your brand in social media, or
- titles and content of articles on web that mention your brand.
- content of product or company user reviews.



Content Moderation with Google Cloud Natural Language API (Google Sheets Template and Apps Script)

This Google Sheets template, integrated with an Apps Script, utilizes the Google Cloud Natural Language API for content moderation. It enables users to automatically detect and classify various types of inappropriate or sensitive content within text directly in Google Sheets, streamlining the process of content review and moderation. This tool is especially valuable for managing...

1

Add to cart

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Content	Toxic	Insult	Profanity	Violent	Illicit Drugs	Religion & Belle	Politics	Death, Harm & T	Finance	Derogatory	Firearms & Wea	Health	Legal	War & Conflict	Public Safety	Sexual	
2	Put the content you want to analyze in the column below	Content that is rude, disrespectful, or unreasonable.	Negative or harmful comments targeting identity and/or protected attributes.	Describes scenarios depicting violence against an individual or group, or general descriptions of gore.	Contains references to sexual acts or other lewd content.	Insulting, inflammatory, or negative comment towards a person or a group of people.	Obscene or vulgar language such as cursing.	Human deaths, tragedies, accidents, disasters, and self-harm.	Content that mentions knives, guns, personal weapons, and accessories such as ammunition, holsters, etc.	Services and organizations that provide relief and ensure public safety.	Human health, including: Health conditions, diseases, and disorders. Medical therapies, medication.	Belief systems that deal with the possibility of supernatural laws and beings; religion, faith, belief, spiritual practice, churches.	Recreational and illicit drugs; drug paraphernalia and cultivation; headshops, etc. Includes medicinal use of drugs.	War, military conflicts, and major physical conflicts involving large numbers of people. Includes discussion of military services.	Consumer and business financial services, such as banking, loans, credit, investing, and insurance.	Political news and media, discussions of social, governmental, and public policy.	Law-related content including law firms, legal information, primary legal services, legal publications and	
3	See a list from SGE taking over, AI-based who are the best commentators and predict Future of SEO and AI HCU and March updates SEO best practices amp:#2008; amp:#2008; amp:#2008;	0.052281365	0.019878417	0.011468334	0.05294553	0.057377048	0.1369853	0.05988056	0.055355945	0.10230173	0.011032751	0.019181818	0.06630458	0.100946374	0.09603774	0.063725494	0.01169046	
4	o.. I know a bit about SEO, I suppose it's too easy all that done well, is SEO still a great personally barely use google anymore to search he frustrating thing on subreddits is that according to GS Statcounter, Google's market share more impressive is the collapse in market share Search also seems to be doing super well While there is never going to be 100% consistency would seem that Sunder Pichai and his co-workers or all of you who have, up to now, believed in it We have an opportunity now to send a message to tell your friends, tell your family, tell everyone Google updates seem to be all the rage at the moment I no particular order: **Total days in data set**: 2,470 days **Unique Years Covered**: 8 years, from 2015 to 2023 **Most volatile day of the week**: Thursday **Least volatile day**: You experts can take it **Most volatile month of the year**: August **Least volatile month of the year**: Book: "Can you relax on weekends." No of course **December 29th, 2023**: Most volatile day of the year heavy - Google is being more reactive than ever **Volatility Changes**: **Before ChatGPT (pre-November 30, 2022): Average volatility: "1.81" **After ChatGPT (post-November 30, 2022): Average volatility: "1.81"	0.06361287	0.035592024	0.015939359	0.017142856	0.035585364	0.05389471	0.019292884	0.05070149	0.014897579	0.008934381	0	0.050200895	0.0029382857	0.00625	0.010695187	0.009032587	
5	o.. I know a bit about SEO, I suppose it's too easy all that done well, is SEO still a great personally barely use google anymore to search he frustrating thing on subreddits is that according to GS Statcounter, Google's market share more impressive is the collapse in market share Search also seems to be doing super well While there is never going to be 100% consistency would seem that Sunder Pichai and his co-workers or all of you who have, up to now, believed in it We have an opportunity now to send a message to tell your friends, tell your family, tell everyone Google updates seem to be all the rage at the moment I no particular order: **Total days in data set**: 2,470 days **Unique Years Covered**: 8 years, from 2015 to 2023 **Most volatile day of the week**: Thursday **Least volatile day**: You experts can take it **Most volatile month of the year**: August **Least volatile month of the year**: Book: "Can you relax on weekends." No of course **December 29th, 2023**: Most volatile day of the year heavy - Google is being more reactive than ever **Volatility Changes**: **Before ChatGPT (pre-November 30, 2022): Average volatility: "1.81" **After ChatGPT (post-November 30, 2022): Average volatility: "1.81"	0.135683222	0.077384135	0.06049678	0.05244553	0.057377048	0.52903223	0.11221122	0.18975603	0.23076923	0.052082576	0.07662508	0.10313078	0.17687375	0.04603774	0.063725494	0.02822177	

E19 5.4254804%

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	ID	Content	Length	Toxic	Insult	Profanity	Derogatory	Sexual	Death, Harm & Tragedy	Violent	Firearms & Weapons	Public Safety	Health	Religion & Belief	Illicit Drugs	War & Conflict	Politics	Finance	Legal
2		<i>Place a unique identifier here - author name, URL, ID, anything you can use to trace back the comment to a</i>	<i>Paste the content y</i>	Content that is rude, disrespectful, or unreasonable.	Insulting, inflammatory, or negative comment towards a person or a group of people.	Obscene or vulgar language such as cursing.	Negative or harmful comments targeting identity and/or protected attributes.	Contains references to sexual acts or other lewd content.	Human deaths, tragedies, accidents, disasters, and self-harm.	Describes scenarios depicting violence against an individual or group, or general descriptions of	Content that mentions knives, guns, personal weapons, and accessories such as ammunition, holsters, etc.	Services and organizations that provide relief and ensure public safety.	Human health, including: Health conditions, diseases, and disorders Medical therapies, medication,	Belief systems that deal with the possibility of supernatural laws and beings; religion, faith, belief, spiritual	Recreational and illicit drugs; drug paraphernalia and cultivation, headshops, etc. Includes medicinal use of	War, military conflicts, and major physical conflicts involving large numbers of people. Includes discussion of	Political news and media; discussions of social, governmental, and public policy.	Consumer and business financial services, such as banking, loans, credit, investing, and insurance.	Law-related content, including law firms, legal information, primary legal materials, paralegal
3	WebLinkr	I see a lot from SG	364	5.23%	1.89%	1.15%	1.10%	1.17%	8.54%	5.28%	1.82%	6.37%	9.63%	13.70%	5.74%	6.60%	5.99%	10.23%	10.09%
4	Lanky-Football857	So.. I know a bit ab	539	6.36%	3.66%	1.59%	0.89%	0.90%	5.97%	1.71%	0.00%	1.07%	5.02%	5.39%	3.66%	0.63%	1.93%	1.49%	0.29%
5	Altruistic_Angle590	According to GS Si	3282	13.68%	7.74%	5.05%	5.21%	2.82%	18.98%	5.28%	7.69%	6.37%	10.31%	52.90%	5.74%	6.60%	11.22%	23.08%	17.69%
6	ptadisbanded	Google updates se	2251	13.68%	7.74%	5.05%	3.64%	1.50%	8.26%	2.81%	7.69%	5.18%	3.50%	15.11%	5.74%	5.26%	3.46%	88.55%	9.38%
7	Ok-Rule7537	I am new to SEO. I	724	18.47%	9.59%	8.30%	5.21%	10.77%	18.98%	23.78%	10.53%	9.79%	17.86%	52.90%	29.41%	12.20%	16.67%	17.70%	10.09%
8	Krollwut	Last September, ou	900	17.69%	9.59%	9.66%	4.99%	5.76%	25.00%	23.78%	37.85%	8.70%	21.38%	35.23%	29.41%	14.19%	23.77%	21.43%	10.09%
9	Maslakovic	Key information:	861	7.97%	5.43%	5.05%	3.30%	2.91%	7.35%	5.28%	7.69%	10.64%	7.11%	11.50%	5.74%	12.20%	11.22%	19.23%	42.17%
10	TheRealDrNeko	how do we do this?	152	7.69%	9.59%	9.66%	4.99%	13.77%	0.60%	1.63%	1.82%	1.07%	3.22%	13.70%	0.96%	1.04%	0.50%	8.20%	1.20%
11	squad1984	Hey guys!	737	9.88%	4.32%	5.05%	1.85%	2.91%	8.54%	2.81%	7.69%	5.18%	7.11%	26.77%	5.74%	12.20%	11.22%	17.70%	10.09%
12	Saiyyidi	What do you think	216	4.36%	1.45%	0.79%	0.48%	0.24%	0.05%	0.00%	0.00%	0.00%	0.57%	0.25%	0.00%	0.05%	0.00%	0.68%	0.00%
13	aashirvad_seo	Suppose we have f	158	1.46%	1.04%	0.29%	0.36%	0.24%	0.23%	0.25%	0.00%	0.14%	0.14%	1.92%	0.23%	1.04%	0.28%	0.32%	1.20%
14	hookages	Hi everyone! I just	211	1.88%	1.20%	0.52%	0.16%	0.24%	0.16%	0.00%	0.00%	0.14%	2.40%	0.29%	0.23%	0.05%	0.06%	3.03%	1.20%
15	Marian_97c	Hello,	1615	7.69%	2.26%	2.06%	1.60%	1.50%	1.61%	1.63%	1.82%	1.07%	2.40%	5.39%	3.66%	1.04%	5.08%	4.22%	1.20%
16	DAMJim	Google Search Cor	257	1.46%	1.04%	0.29%	0.36%	0.24%	0.21%	0.00%	0.00%	0.50%	0.64%	0.25%	0.23%	0.05%	0.06%	0.68%	0.00%
17	ExplanationSuper2	I regularly use Mail	335	1.67%	1.04%	0.37%	0.39%	0.25%	0.52%	0.25%	0.00%	0.53%	2.40%	1.92%	0.96%	1.04%	0.84%	1.49%	5.56%
18	Can19977	Hi all,	1691	15.85%	7.01%	5.05%	4.37%	5.41%	8.54%	18.67%	10.53%	5.18%	10.31%	35.23%	20.00%	14.19%	11.22%	21.43%	10.09%
19	Ancient_Bathroom!	Hello everyone,	866	11.88%	5.43%	5.05%	3.30%	3.80%	11.54%	12.80%	9.56%	6.37%	10.31%	41.18%	5.74%	14.19%	25.48%	23.08%	17.69%
20	Obvious_Substanc	As the title says, w	200	5.83%	2.26%	1.56%	0.89%	1.01%	8.26%	1.45%	1.82%	1.07%	3.50%	11.50%	3.66%	5.26%	3.46%	1.49%	3.17%
21	jacobob_john	anybody know abo	25	3.48%	2.26%	2.06%	1.60%	1.50%	4.27%	1.45%	0.00%	2.06%	2.63%	5.39%	3.66%	1.04%	0.84%	3.03%	1.20%
22	_bobbyfischer	Im having trouble g	420	12.54%	13.05%	12.19%	5.21%	13.77%	25.00%	19.51%	42.86%	10.64%	34.75%	41.18%	18.75%	20.90%	33.13%	23.08%	17.69%
23	GiniMiniManeMo	Hi all,	395	18.47%	10.56%	10.72%	7.40%	15.73%	25.00%	23.78%	50.00%	14.08%	15.93%	52.90%	18.75%	21.84%	34.69%	17.70%	17.69%
24	Kitchen_Knee_740	Hi, I've created a W	1590	11.88%	6.14%	5.05%	1.85%	1.50%	8.26%	2.81%	7.69%	5.18%	7.11%	14.29%	5.74%	5.26%	5.99%	8.20%	9.38%
25	vijaydigi07	My keyword is best	144	1.88%	1.45%	0.60%	0.48%	0.25%	0.60%	0.25%	0.00%	0.50%	1.35%	1.25%	0.23%	0.05%	0.28%	7.97%	0.29%
26	N4riN4ri	I help develop and	1023	28.98%	16.00%	12.19%	9.17%	13.77%	11.54%	23.78%	10.53%	9.79%	15.93%	52.90%	20.00%	14.19%	33.13%	10.23%	17.69%
27	SE_Ranking	Last week, our tear	4154	18.58%	5.43%	5.05%	3.30%	2.82%	8.54%	5.28%	7.69%	5.18%	4.05%	19.75%	5.74%	6.60%	11.22%	21.43%	10.09%
28	Diligent_Response	Hey everyone! I ha	399	7.69%	3.66%	2.06%	1.85%	1.50%	7.35%	2.81%	1.82%	2.06%	12.46%	15.11%	5.74%	5.26%	9.37%	7.97%	10.09%
29	Vivissiah	I am saying this to	725	36.85%	19.68%	18.54%	6.32%	53.61%	35.79%	92.51%	42.86%	25.68%	33.33%	43.10%	49.64%	14.19%	23.77%	10.23%	42.17%
30	AutoModerator	There's no strict lirr	1577	6.84%	3.66%	1.59%	1.60%	1.50%	82.50%	48.32%	1.82%	2.06%	21.38%	35.23%	5.74%	6.60%	11.22%	4.13%	9.38%
31	its_Jeslievanilla	There's a serious p	74	33.34%	9.59%	10.72%	1.85%	53.61%	35.79%	83.70%	31.25%	9.79%	34.75%	46.15%	88.14%	12.20%	58.22%	23.08%	26.67%
32	Celestial_Ram	I've never commen	81	6.84%	4.33%	2.40%	0.52%	1.50%	0.60%	1.45%	0.00%	1.07%	1.35%	15.11%	0.96%	1.04%	0.28%	0.68%	0.29%
33	SlavePrincessVibe	Tbh, I didn't even r	356	42.12%	35.36%	49.12%	21.18%	19.48%	18.98%	33.33%	75.00%	16.67%	23.19%	85.62%	36.11%	20.90%	39.19%	34.15%	43.52%
34	jason-jason2000	Like, is there an ide	1448	36.85%	19.68%	28.71%	15.13%	55.57%	18.98%	33.33%	7.69%	5.18%	42.27%	52.90%	5.74%	5.26%	3.46%	4.22%	3.17%
35	Negotiation_Previo	I thought it was iror	68	48.88%	28.50%	48.25%	1.60%	19.48%	11.54%	27.83%	7.69%	6.37%	15.93%	12.21%	36.11%	6.60%	7.14%	8.20%	10.09%
36	dexamphetamines	Or did I miss a per	61	2.68%	1.45%	0.87%	0.48%	0.90%	3.01%	2.81%	0.00%	5.18%	9.63%	1.25%	5.74%	1.04%	3.46%	8.20%	85.81%
37	PhoonTFDB	Just the usual com	113	6.84%	3.60%	0.60%	0.89%	0.30%	1.61%	0.26%	0.00%	0.14%	0.64%	5.39%	0.96%	1.04%	0.06%	3.03%	0.29%
38	Jealous_Author_45	I've been so angry	2531	47.19%	46.10%	54.06%	37.23%	38.35%	33.56%	55.56%	7.69%	5.18%	12.46%	15.11%	29.41%	1.04%	5.08%	3.03%	3.17%
39	Superb_Ad1765	OP doesn't ever	138	2.68%	1.62%	9.66%	1.10%	0.30%	0.52%	2.81%	0.00%	1.07%	0.54%	0.65%	0.23%	1.04%	0.06%	0.32%	0.00%

How to implement this in SEO (and should you)

What is YMYL?

YMYL is another acronym from Google's Search Quality Guidelines, which stands for Your Money, Your Life. Examples of YMYL topics or pages are ones that can impact a person's future happiness, health, financial stability, or safety.



Toxic	Insult	Profanity	Derogatory	Sexual	Death, Harm & Tragedy	Violent	Firearms & Weapons
Content that is rude, disrespectful, or unreasonable.	Insulting, inflammatory, or negative comment towards a person or a group of people.	Obscene or vulgar language such as cursing.	Negative or harmful comments targeting identity and/or protected attributes.	Contains references to sexual acts or other lewd content.	Human deaths, tragedies, accidents, disasters, and self-harm.	Describes scenarios depicting violence against an individual or group, or general descriptions of	Content that mentions knives, guns, personal weapons, and accessories such as ammunition, holsters, etc.

Public Safety	Health	Religion & Belief	Illicit Drugs	War & Conflict	Politics	Finance	Legal
Services and organizations that provide relief and ensure public safety.	Human health, including: Health conditions, diseases, and disorders Medical therapies, medication,	Belief systems that deal with the possibility of supernatural laws and beings; religion, faith, belief, spiritual	Recreational and illicit drugs; drug paraphernalia and cultivation, headshops, etc. Includes medicinal use of	War, military conflicts, and major physical conflicts involving large numbers of people. Includes discussion of	Political news and media; discussions of social, governmental, and public policy.	Consumer and business financial services, such as banking, loans, credit, investing, and insurance.	Law-related content, including law firms, legal information, primary legal materials, paralegal

Happiness
 Health
 Financial stability
 Safety

Monitoring Social Media & External Mentions

Use Case: Track social media mentions to identify and address toxic comments.

- Maintain a Brand Toxicity Score to mitigate reputational risks.
- Apply this strategy for:
 - Your brand.
 - Competitors.
 - Influencers or potential brand partners.

Benefit: Protect brand reputation, improve SEO, and ensure positive online interactions.

Moderating On-Site and Community Content

Use Case: Monitor and moderate content on your website and community platforms.

- User-Generated Content: Ensure comments align with your content guidelines.
- Community Posts: Check for compliance with the code of conduct to maintain respectful conversations.
- Web Content: Use moderation algorithms to verify tone of voice and adherence to content safety best practices.

Benefit: Foster user engagement, maintain high-quality content, and align with brand values.

Pragmatic analysis

For Search Marketing Lovers

WE  SEO by **oncrawl**



Pragmatic analysis is the fifth and final phase of natural language processing. As the final stage, pragmatic analysis extrapolates and incorporates the learnings from all other, preceding phases of NLP.

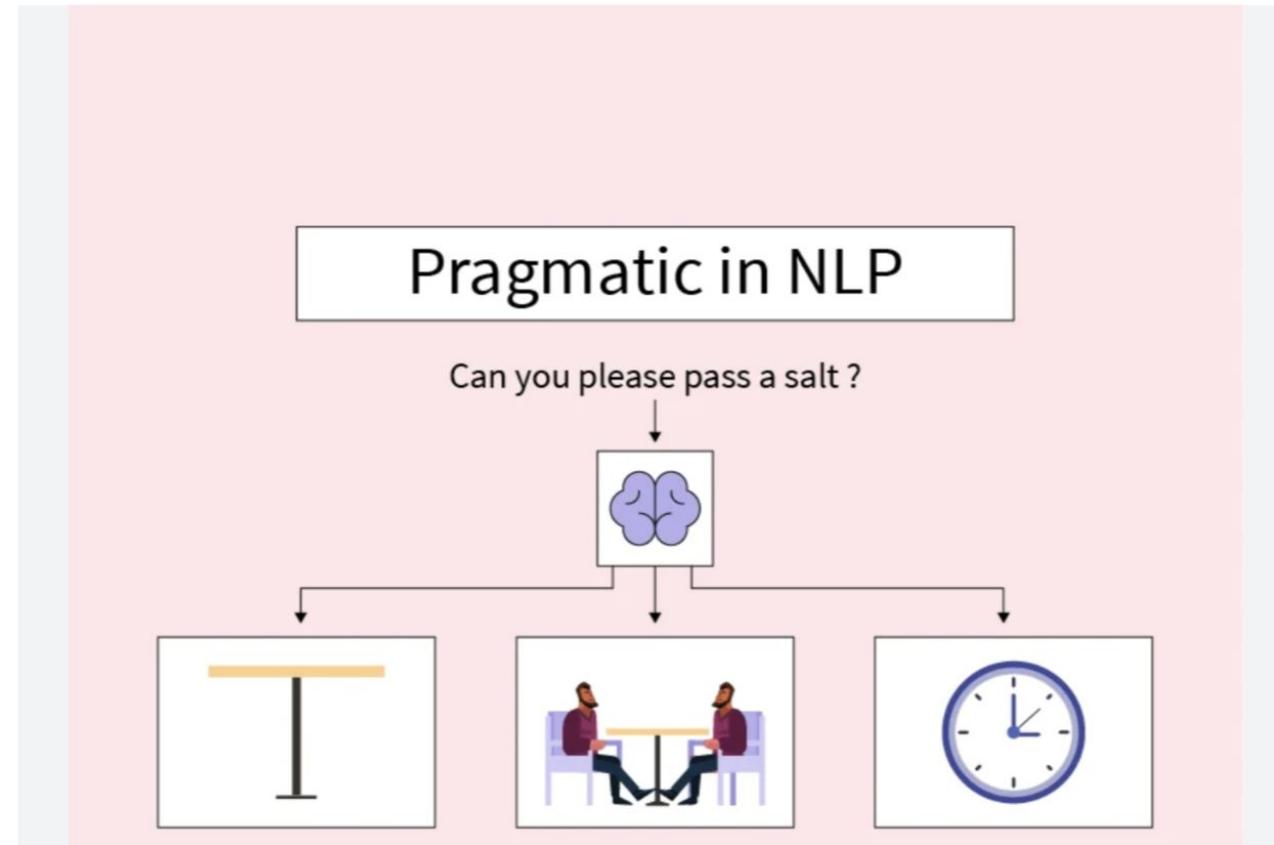
Pragmatic analysis involves the process of abstracting or extracting meaning from the use of language, and translating a text, using the gathered knowledge from all other NLP steps performed beforehand.

Complexities introduced:

Information extraction, enabling an advanced text understanding functions such as **question-answering**.

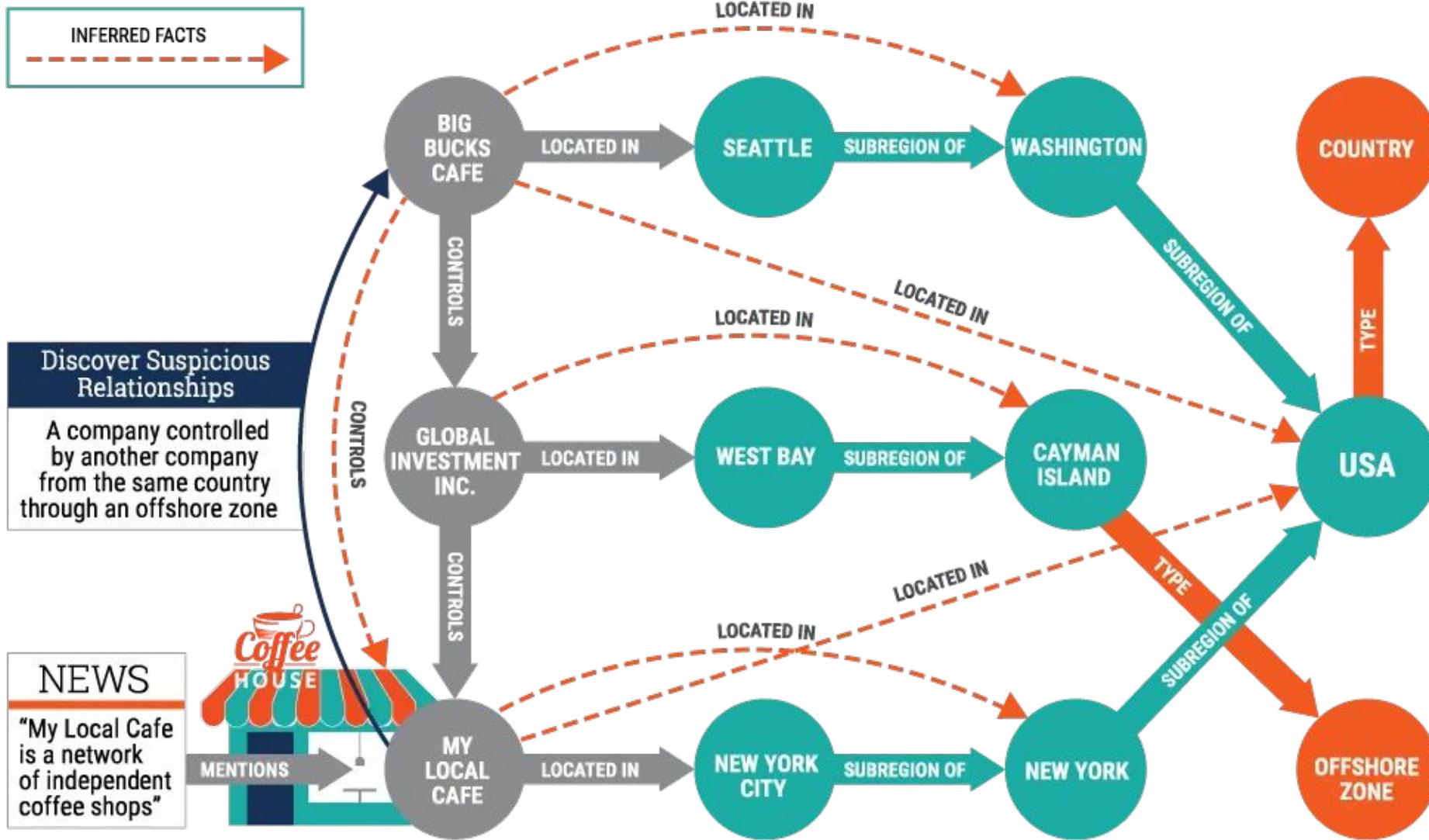
Meaning extraction, which allows for programs to break down definitions or documentation into a more accessible language.

Understanding of the meaning of the words, and context, in which they are used, which enables **conversational functions** between machine and human (e.g. chatbots).



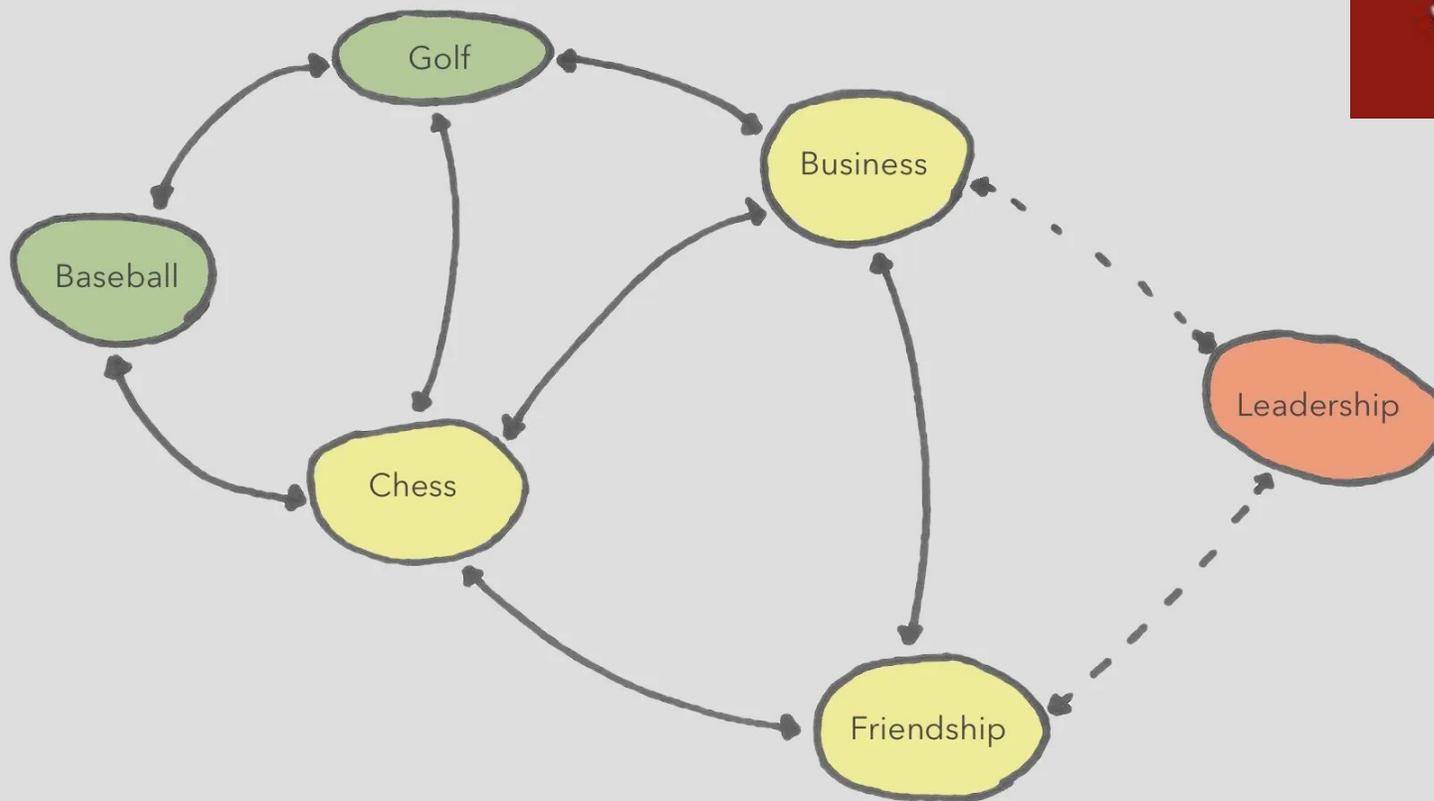
How to implement this in practice (tools and practices)





SCHEMA LEARNING

Schema.org



New ideas and concepts become sticky by relating them to ones you already know

Riskology.co

How to implement this in SEO (and should you)

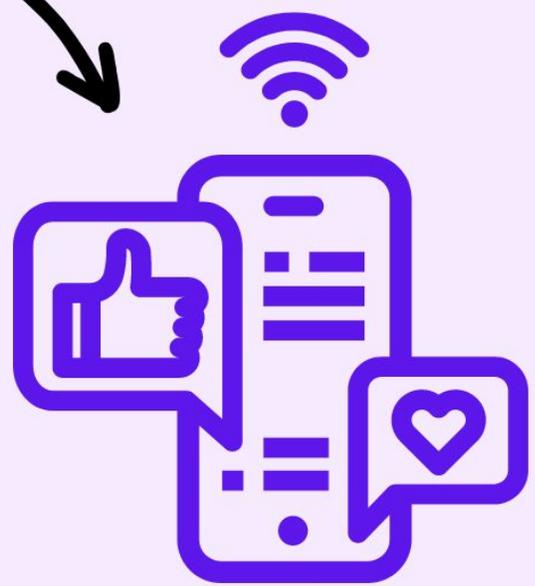
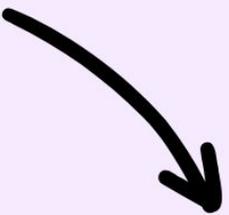
wordlift

WORDLIFT AGENT

Your AI-Powered SEO and Customer Engagement Assistant

Our custom AI Agent is specifically trained to your needs and Brand identity with all your Knowledge Graph and proprietary SEO data. It automates SEO tasks, generates high-quality content, and provides actionable insights—helping you save time and focus on strategic growth and customer engagement.

Start Now



Approach	Suitable for	Limitation	Tools
No-code	<ul style="list-style-type: none"> ● Beginners ● Non-technical 	<ul style="list-style-type: none"> ● Limited scalability 	<ul style="list-style-type: none"> ● ChatGPT ● Custom GPTs ● Web tools (they're all wrappers of GPT, so not worth it)
Programmatic	<ul style="list-style-type: none"> ● Intermediate ● A little bit more technical ● API-savvy 	<ul style="list-style-type: none"> ● Time and other adoption costs 	<ul style="list-style-type: none"> ● GPT4/ GPT4o ● Any LLMs ● BERT

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

→ Transform blog posts to insightful posts for social media.

 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.

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

→ **Use an LLM to rewrite these into newsletter edition drafts.**

You have comprehensive guides or reports in PDF format?

→ **You can extract key insights, summaries, or actionable tips from these documents and repurpose them into blogs or social posts/ threads.**

Extract insights/ summarise PDFs
(presentations, PDFs, Word Docs,
papers, etc)



Summarise this document for me

Guests Gui...ed to know

PDF PDF

Regenerate draft ↻



Analysis complete ▾

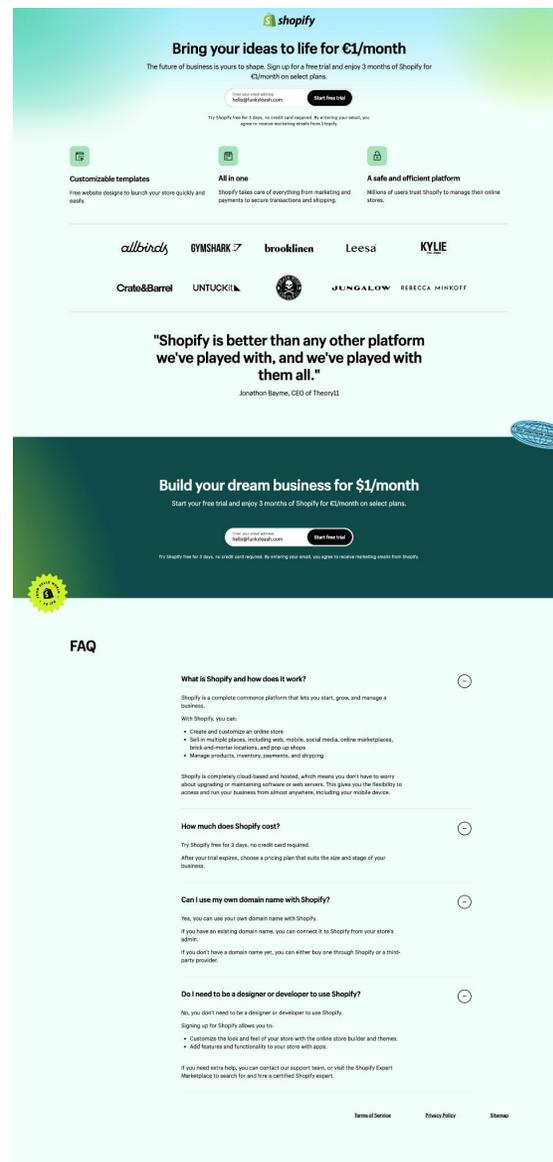
This document is a guide for guests attending the "Google for Marketers" mini-conference in Sofia, Bulgaria, hosted by the HyperScience team. The event will take place on November 22nd, 2024, from 6 PM to 11 PM at the HyperScience Office located in the NV Tower building on the 15th floor. ▾

Event Highlights:

- The conference will feature a lineup of talented women in marketing who will share their expertise on a range of Google tools and technologies. ▾
- The event will be held in an innovative space with 360-degree views of the city. ▾
- The office is accessible by any preferred type of transport, including metro, bus, or car. ▾



Gemini



Create ad copy from landing page

(download your LP copy as PDF or as document and upload)

Gemini



create different ad copy options for this landing page



Show drafts



Option 1 (Short & Sweet):

Bring your business dreams to life with Shopify. Start your free trial today and build your online store for just €1/month!

Option 2 (Benefit-driven):

Sell online, anywhere. Shopify makes it easy to build a beautiful online store and reach customers across the globe. Start your free trial and get 3 months for €1/month!

Option 3 (Problem/Solution):

Tired of complicated e-commerce platforms? Shopify is the all-in-one solution for building and growing your online business. Simple, affordable,

How to use generative AI with structured data for programmatic SEO

Google Colab (Python)

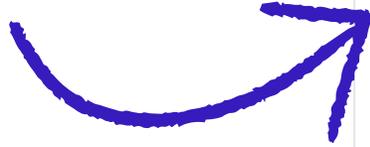
Intermediate

OpenAI API



product	size	color	price
Product A	10	blue	150
Product B	12	green	180
Product C	15	red	125

```
prompt_template = """  
Please create a product description for {product}.  
Mention its size, which is {size}  
Also mention its color, which is {color}  
Talk about its price: {price}  
The tone of voice should be professional  
"""  
  
for row in products.to_dict('records'):  
    print(prompt_template.format_map(row))
```

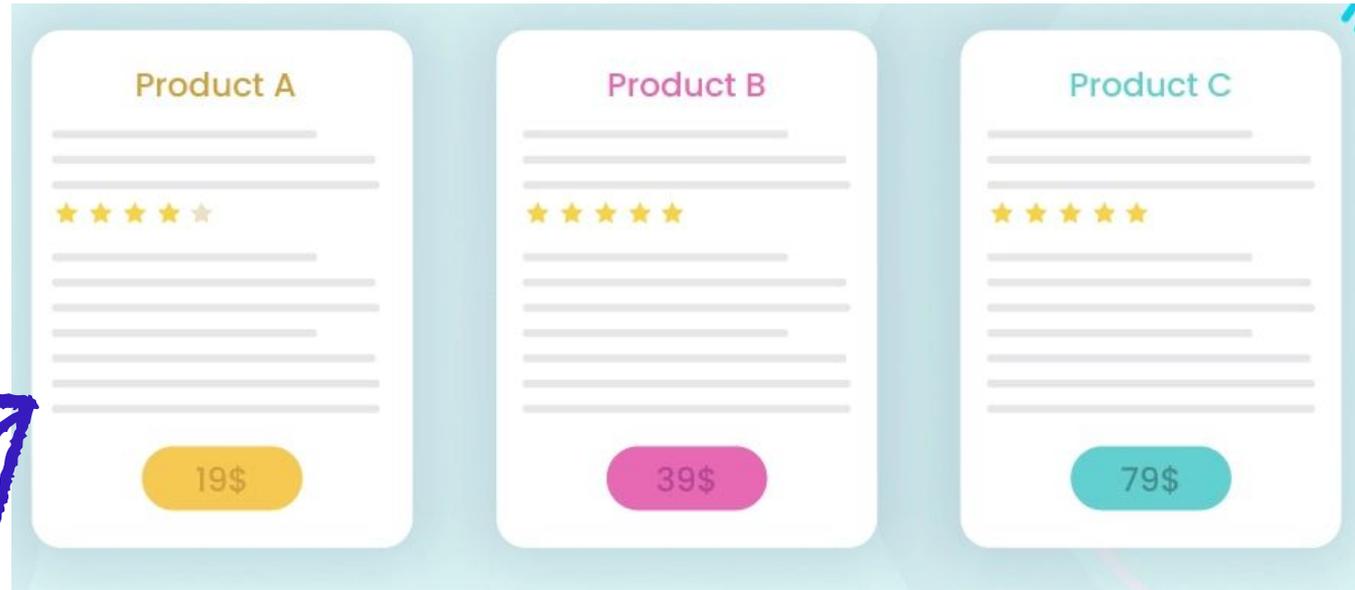
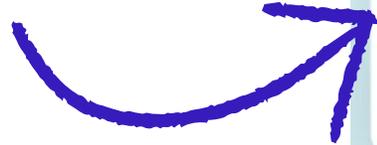
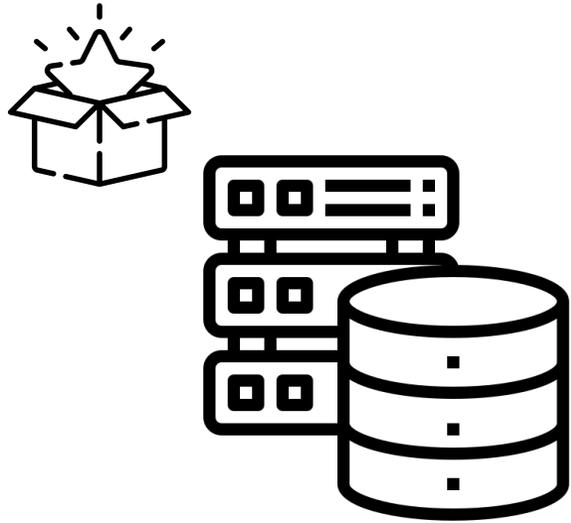


AI Summary

Based on 10 customer ratings



Customers share a variety of opinions about the Mower3000. The most common pros are its quiet operation, user-friendly app and setup, and autonomous lawn care capabilities. However, some customers have reported issues with uneven cutting, getting stuck, and lost connections to the boundary wire. The battery life also seems insufficient for some users. Despite these challenges, many customers still consider it a good buy, especially for convenience and reduced manual labor.



Practical Implications for SEO

For Search Marketing Lovers

WE  SEO by **oncrawl**



There are now tools that are advanced in all of these categories
(there's no excuse not to use them to automate components of
your work)

Google (and platforms with search functions) are automating their systems and relying heavily on ML for ranking systems, moderation systems, and so on.

(not using ML in your workflow leaves you a bit blindsided.)

Using NLP tools can help you ensure every piece of content meets high standards of **readability**, **grammatical accuracy**, and **tone** and **safety**, improving both user experience and rankings.

We are currently operating in an era of semantic search and contextual understanding, and have long lived in it. The effects are even more widespread with LLMs becoming a channel for traffic.

(Not incorporating ML, specifically NLP to uncover semantics from text, be it content, keywords or titles, will leave you in the dust.)

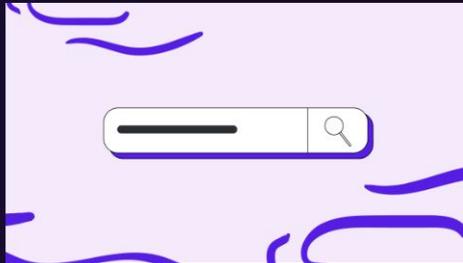
Where to from here?

LEARN THE HOW IN MACHINE LEARNING

[View all machine learning tutorials](#)

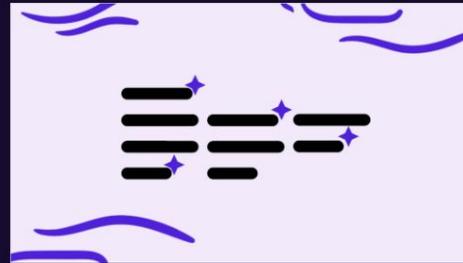
Machine Learning Tutorials

Straightforward machine learning tutorials and how-to guides, ideal for beginners. Learn how to implement an API, or train your own machine learning model from scratch, using popular tools and technologies. Each tutorial includes all the resources you need, plus step-by-step guidance.



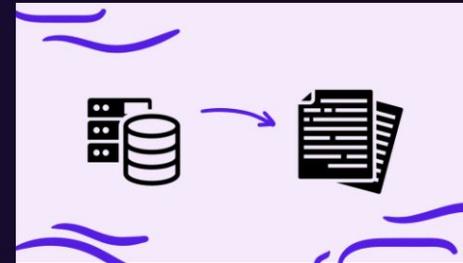
Keyword research

How to use Google Autocomplete API and Places API for Keyword Suggestions with Python



Keyword research

How to do keyword clustering with KeyBERT

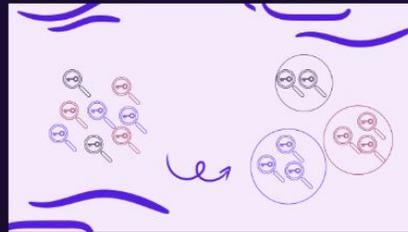


Content Creation

How to use generative AI with structured data for programmatic SEO

Machine Learning in SEO – Implementation Guides

Implementation guides for utilising machine learning in organic search and broader digital marketing projects, showing different ways that the data can support the execution of the project, or improve the organic search visibility strategy. These are guides are typically a follow-up to the [Machine Learning Tutorials](#) and [Machine Learning Templates](#) and show you the 'what now' section, following the execution of a ML API or the training of the model. What to do next, and how to ensure that the insights and data you have gathered is actually properly utilised and incorporated into your strategy or project.



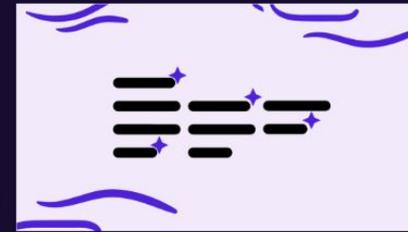
Keyword research

Different ways to Map Keywords to topics – with Supervised and Unsupervised ML approaches



Keyword research

How to use Google Autocomplete API and Places API for Keyword Suggestions with Python



Keyword research

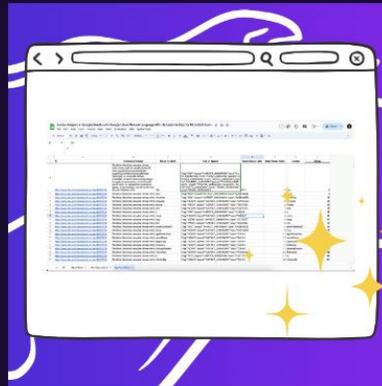
How to do keyword clustering with KeyBERT

MLforSEO Templates

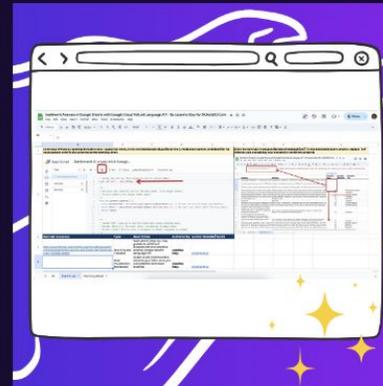
Kickstart machine learning implementation with our collection of templates, featuring Google Sheets templates with AppScript, Looker Studio dashboard templates, and a range of coding scripts and notebooks. Tailored for efficiency and effectiveness, these resources are designed with beginners in mind, ensuring you start your machine learning journey on the right foot.



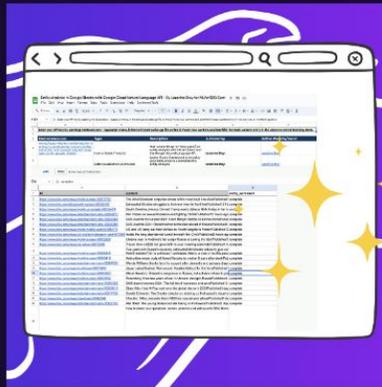
Content Moderation with Google Cloud Natural Language API (Google Sheets Template and Apps Script)



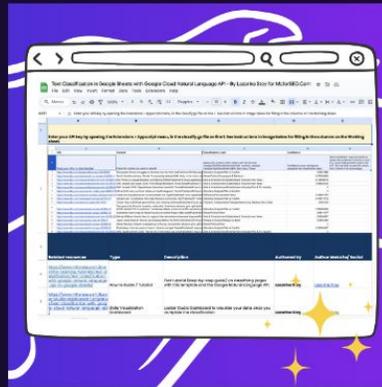
Syntax Analysis with Google Cloud Natural Language API (Google Sheets Template and Apps Script)



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



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



Text Classification with with Google Cloud Natural Language API (Google Sheets Template with Apps Script)



Text Classification with with Google Cloud Natural Language API (Looker Studio Template)

✦ academy.mlforseo.com ✦

WE SEO

by **oncrawl**