

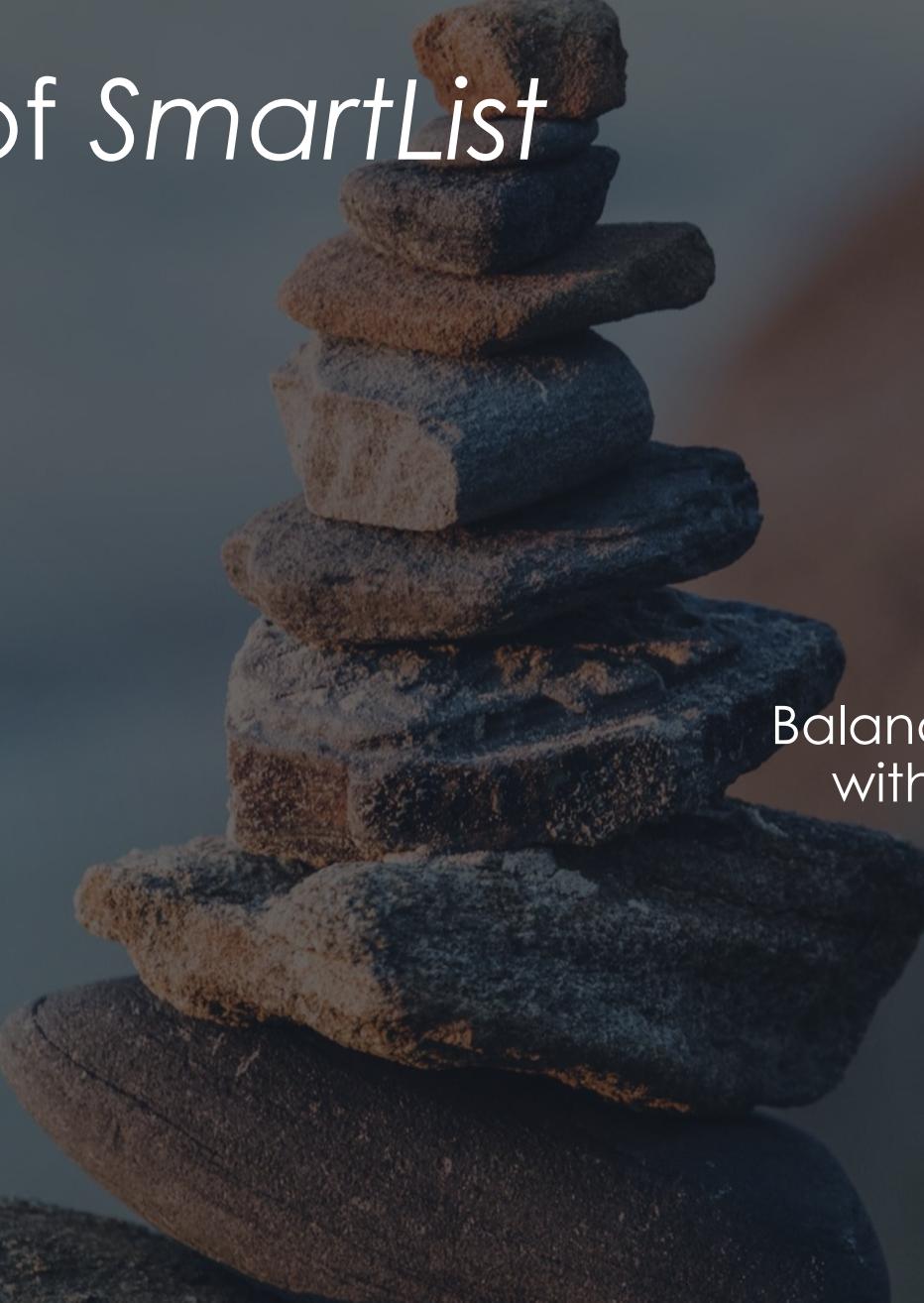


Article summaries with
info on the
corresponding
businesses

SMARTLIST.AI

Overview / Business Context / Problem Statement	<p>Create an automated research and lead list using python that returns summarized top 100 articles in the past month, and a lead list of the businesses within a country or area.</p>				
Business Challenges		Resources & Governance			
<ul style="list-style-type: none"> • Data Acquisition: <ul style="list-style-type: none"> • Collecting and storing data from various sources in a structured format. This would involve web scraping, to API integration. • Data Processing: <ul style="list-style-type: none"> • Once the data is collected, it needs to be cleaned (processed and transformed) for efficient analysis. • Data Analysis: <ul style="list-style-type: none"> • After processing, insights will then need to be extracted to determine what stays and goes for the KMeans Clustering Algorithm. • System Architecture: <ul style="list-style-type: none"> • In production, this needs to be scalable to handle larger amounts of data if need be (say by country, or an even larger range). 	<ul style="list-style-type: none"> • Testing Environment <ul style="list-style-type: none"> • Visual Studio Code • Conda Environment (For replication) • Jupyter Notebooks (Remote Connection) • Production Environment (Serverless) <ul style="list-style-type: none"> • S3 Buckets (2) • AWS Glue (for preprocessing) • AWS Athena (for query) • AWS Redshift (Warehouse) • AWS QuickSight (Visualization) • Cost <ul style="list-style-type: none"> • <\$50/m 				
Impact/ Expected Benefits / Key KPIs	Barriers / Constraints				
<ul style="list-style-type: none"> • Impacts: <ul style="list-style-type: none"> • Enables businesses to identify potential business opportunities. • Improved efficiency and accuracy of lead generation • Expected Benefits: <ul style="list-style-type: none"> • Increased competitiveness by use of timely insights and trends • KPIs: <ul style="list-style-type: none"> • Leads generated/month; successful lead conversions; user engagement 	<ul style="list-style-type: none"> • Barriers: <ul style="list-style-type: none"> • High quality and reliable data sources/ accuracy and relevance of lead list • Technical challenges implementing the infrastructure (production) • Constraints: <ul style="list-style-type: none"> • Regulatory and compliance considerations • Compatibility with existing systems and workflows • Data privacy and security concerns 				

Essence of SmartList



Balancing large volumes of information
with limited time to make actionable
decision on them

- Financial research
- Media Monitoring
- Search Marketing & SEO

How it works

4steps;

- Type in selected topic of interest
- System matches keywords with articles via news API
- Embedded AI in the code delivers a read-list with major tags, minor tags
- Plus a 20 -line summary of the each article



A hand is holding a smartphone, which displays a Python script on its screen. The script is a Blender operator class for mirroring objects. It includes logic to handle different mirror operations (X, Y, Z) and to ensure exactly one object is selected. The code is written in a dark-themed code editor.

```
mirror_mod = modifier_obj
# Set mirror object to mirror
mirror_mod.mirror_object = None
if operation == "MIRROR_X":
    mirror_mod.use_x = True
    mirror_mod.use_y = False
    mirror_mod.use_z = False
elif operation == "MIRROR_Y":
    mirror_mod.use_x = False
    mirror_mod.use_y = True
    mirror_mod.use_z = False
elif operation == "MIRROR_Z":
    mirror_mod.use_x = False
    mirror_mod.use_y = False
    mirror_mod.use_z = True

# selection at the end -add
#_ob.select= 1
#_ob.select=1
context.scene.objects.active = eval("Selected" + str(modifier))
mirror_ob.select = 0
bpy.context.selected_objects.append(mirror_ob)
data.objects[one.name].select = 1
print("please select exactly one object")
#----- OPERATOR CLASSES -----
#----- MIRROR OPERATOR -----
@types.Operator:
def execute(self, context):
    # X mirror to the selected object.mirror_mirror_x
    # mirror X
    if context.active_object is not None:
        ob = context.active_object
```

How it works

- ▶ The coordinates of the area and the size of the radius
 - ▶ System returns a list of all businesses within that area

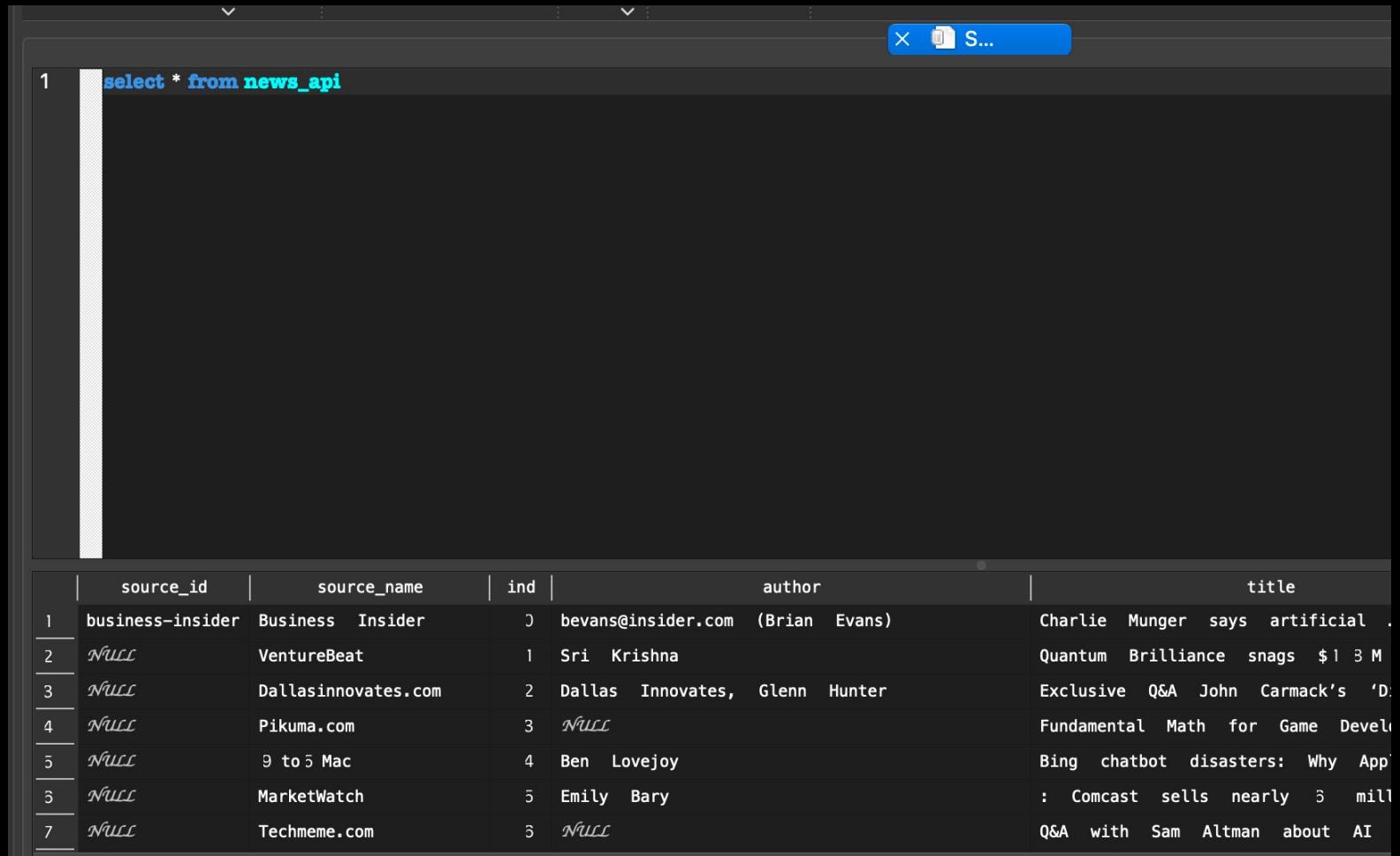


Possible use cases

- ▶ A company assessing the media perception of its sustainability record over a given period of time.
- ▶ A company trying to summarize data from various articles in order to understand the perception of their recent advertising campaign.

The Database

Scripts timestamp and store data pulled from newsapi and gmaps into one database



A screenshot of a terminal window displaying a MySQL query and its results. The query is:

```
1 | select * from news_api
```

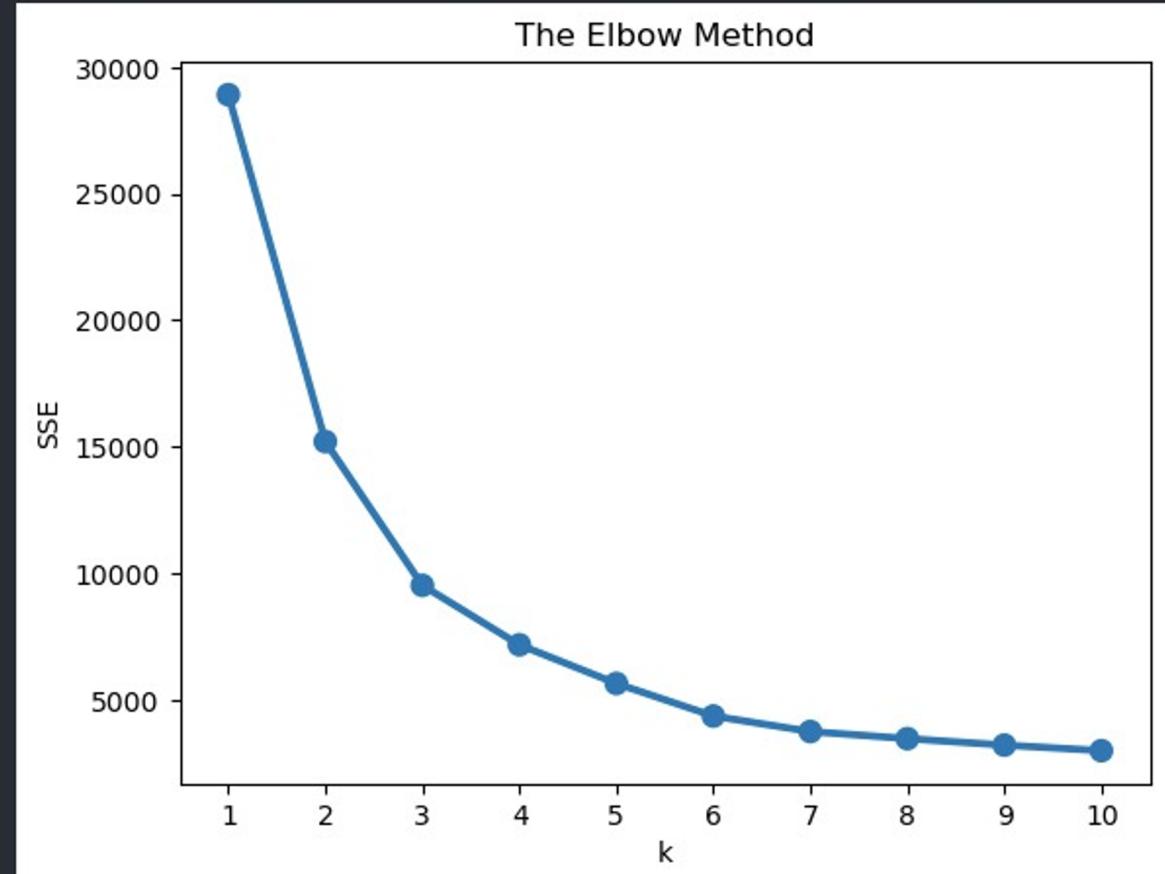
The results are displayed in a table with columns: source_id, source_name, ind, author, and title. The data includes:

	source_id	source_name	ind	author	title
1	business-insider	Business Insider	0	bevans@insider.com (Brian Evans)	Charlie Munger says artificial .
2	NULL	VentureBeat	1	Sri Krishna	Quantum Brilliance snags \$1.3 M
3	NULL	Dallasinnovates.com	2	Dallas Innovates, Glenn Hunter	Exclusive Q&A: John Carmack's 'D
4	NULL	Pikuma.com	3	NULL	Fundamental Math for Game Develo
5	NULL	9 to 5 Mac	4	Ben Lovejoy	Bing chatbot disasters: Why App
6	NULL	MarketWatch	5	Emily Bary	: Comcast sells nearly 5 milli
7	NULL	Techmeme.com	6	NULL	Q&A with Sam Altman about AI

KMeans Clustering

KMeans clusters the google businesses data set based off of the business district information and the business insight.

```
plt.title('The Elbow Method')
plt.xlabel('k'); plt.ylabel('SSE')
sns.pointplot(x=list(range(1, 11)), y=errors)
plt.savefig("Elbow.png")
```



API data acquisition(News & Google)

df.head()										
	source_id	source_name	index	author	title	description	url	uriToImage	publishedAt	content
0	None	Mishalaskin.com	0	None	Training Deep Networks with Data Parallelism ...	Misha Laskin personal website. Includes a blog...	https://www.mishalaskin.com/posts/data_parallel	https://elasticbeanstalk-us-west-2-60995241666...	2023-02-24T17:05:55Z	One of the main challenges in training large neural networks with deep learning frameworks like PyTorch or TensorFlow is the need for parallel processing across multiple GPUs. This can be achieved through various techniques such as data parallelism, which involves dividing the input data into smaller batches and processing them simultaneously on different GPUs. Another approach is model parallelism, where the computation graph is partitioned across multiple GPUs. In this article, we will focus on data parallelism and how it can be implemented using PyTorch's distributed data parallel (DDP) module.
1	None	Xataka Android	1	Pepu Ricca	Stable Diffusion en Android de manera nativa: ...	La Inteligencia Artificial está ahora más de moda...	https://www.xatakandroid.com/aplicaciones-andro...	https://i.blogs.es/763c05/qualcomm-stable-diff...	2023-02-23T16:01:23Z	La Inteligencia Artificial está ahora más de moda... La Inteligencia Artificial es una tecnología que ha revolucionado la forma en que interactuamos con los dispositivos móviles. En particular, la aplicación de la IA en los teléfonos inteligentes ha permitido la creación de aplicaciones más intuitivas y personalizadas. Una de las principales aplicaciones de la IA en los teléfonos es la generación de imágenes a través de la función de cámara. La función de cámara de los teléfonos inteligentes ha evolucionado de una simple cámara digital a una cámara que utiliza la IA para capturar imágenes más nítidas y realistas. La función de cámara de los teléfonos inteligentes ha evolucionado de una simple cámara digital a una cámara que utiliza la IA para capturar imágenes más nítidas y realistas.
2	None	Motley Fool	2	newsfeedback@fool.com (Keithen Drury)	Could Microsoft's Artificial Intelligence invest... market share ...	Even taking a 10th of Alphabet's market share ...	https://www.fool.com/investing/2023/02/18/could-m...	https://g.foolcdn.com/editorial/images/720038/...	2023-02-18T11:45:00Z	There's been one undisputed king of internet search engines for decades: Google. But could Microsoft's AI investment change that? The company has already made significant strides in AI, particularly with its Azure cloud platform and its own AI models. It's also invested heavily in its search engine, Bing, which has seen a resurgence in popularity in recent years. So, could Microsoft's AI investment change the game? It's possible, but it's not clear yet. The company will need to continue to invest in AI and develop new products and services to compete with Google. It's also possible that Google will continue to dominate the search engine market for many years to come.
3	None	Motley Fool	3	newsfeedback@fool.com (Keithen Drury)	A Bull Market Is Coming for These 3 Artificial ...	As AI becomes even more prevalent, these early...	https://www.fool.com/investing/2023/02/15/a-bull...	https://g.foolcdn.com/editorial/images/720039/...	2023-02-15T12:00:00Z	Artificial intelligence (AI) has gotten much attention in recent years, and it's clear that it's here to stay. As AI becomes more prevalent, it's likely that there will be a bull market for companies that are well-positioned to benefit from it. These three companies are worth watching: 1. Alphabet (GOOGL, GOOGL-A) - The company behind Google, Alphabet is a leader in AI research and development. It has a strong track record of innovation and is well-positioned to benefit from the growing demand for AI-powered products and services. 2. NVIDIA (NVDA) - NVIDIA is a leading provider of AI hardware and software, and it has a strong track record of success. It's well-positioned to benefit from the growing demand for AI-powered products and services. 3. Tesla (TSLA) - Tesla is a leader in electric vehicle technology, and it's well-positioned to benefit from the growing demand for electric vehicles. It's also involved in AI research and development, and it's well-positioned to benefit from the growing demand for AI-powered products and services.
4	None	New Atlas	4	Loz Blain	ChatGPT: The friendly face of your AI replacement	We are witnessing a revolution. After the stun...	https://newatlas.com/technology/chatgpt-friend...	https://assets.newatlas.com/dims4/default/c566...	2023-02-08T06:13:45Z	We are witnessing a revolution. After the stunning reveal of ChatGPT, the world is buzzing with excitement and anticipation. The AI language model developed by OpenAI has quickly become one of the most popular and widely used AI tools in the world. It's able to generate human-like text on a wide variety of topics, from answering simple questions to writing complex essays. And it's not just limited to text - ChatGPT can also generate images, code, and even music. The potential applications for ChatGPT are endless, from helping businesses automate their customer service to aiding researchers in their work. As more and more people discover ChatGPT, it's clear that it's here to stay. And with its continued evolution and improvement, it's likely to become an even more valuable tool in the future.

df									
	category	business_status	formatted_phone_number	international_phone_number	name	opening_hours	place_id	rating	types
0	accounting	OPERATIONAL	912 24 94 26	+34 912 24 94 26	BBVA	{"open_now": false, "periods": [{"close": "2023-02-24T23:59:59"}]}	ChUC4wKC5OipBIRNylnSiqc8g	2.4	[bank, atm, accounting, finance, point_of_interest]
1	accounting	OPERATIONAL	934 67 70 21	+34 934 67 70 21	BBVA	{"open_now": false, "periods": [{"close": "2023-02-24T23:59:59"}]}	ChJTCWKdeqjBIRyZbmS-5ak	2.0	[bank, atm, accounting, finance, point_of_interest]
2	accounting	OPERATIONAL	932 45 88 07	+34 932 45 88 07	Oficina Banc BBVA	{"open_now": false, "periods": [{"close": "2023-02-24T23:59:59"}]}	ChJG5hr4eWjpBIR0NaV1YhuB8g	2.0	[accounting, bank, atm, finance, point_of_interest]
3	accounting	OPERATIONAL	933 17 29 75	+34 933 17 29 75	ADD Work Systems	{"open_now": false, "periods": [{"close": "2023-02-24T23:59:59"}]}	ChJ0Y_0_CipBIR6u330Kjcw_o	Nan	[accounting, finance, point_of_interest, point_of_interest]
4	accounting	OPERATIONAL	932 72 14 11	+34 932 72 14 11	Acordia ACR	{"open_now": false, "periods": [{"close": "2023-02-24T23:59:59"}]}	ChJ_7JOJ0ipBIR209nzb8h_U	2.7	[accounting, finance, point_of_interest, establishment]
3514	veterinary_care	OPERATIONAL	637 84 43 98	+34 637 84 43 98	Clinica Veterinaria Family Vet	{"open_now": false, "periods": [{"close": "2023-02-24T23:59:59"}]}	ChUyx0ZczyjpBIRgqUje2aNj4	4.9	[veterinary_care, point_of_interest, establishment]
3515	veterinary_care	OPERATIONAL	933 23 54 44	+34 933 23 54 44	Tot Cat. Clinica felina	{"open_now": false, "periods": [{"close": "2023-02-24T23:59:59"}]}	ChJzbxb1-ipBIRy_zyfIrgs	4.6	[veterinary_care, point_of_interest, establishment]
3516	veterinary_care	OPERATIONAL	934 12 59 44	+34 934 12 59 44	Vet & Stil Cap	{"open_now": false, "periods": [{"close": "2023-02-24T23:59:59"}]}	ChJ__P6e-ipBIRxRlQ5NPjw	4.8	[veterinary_care, point_of_interest, establishment]

Article summaries with OpenAI

```
df.head()
```

✓ 0.5s

	content	Minor_Tag	Major_Tag	Summary
0	AI angst has arguably never been higher. Some ...	\n\n1. Artificial Intelligence (AI)\n2. Singul...	\n\n1. Artificial Intelligence (AI)\n2. Singul...	\n\nAI angst is high due to predictions of AI ...
1	Your résumé is polished, your interview skills...	\n\n1. Job Search\n2. Cover Letter Writing\n3....	\n\n1. Job Search\n2. Cover Letter Writing\n3....	\n\nPolished résumé and strong interview skill...
2	After a few years of staying mostly under the ...	\n\n#Instagram #KevinSystrom #MikeKrieger #Art...	\n\n#Instagram #KevinSystrom #MikeKrieger #Art...	\n\nInstagram co-founders Kevin Systrom and Mi...
3	An artificial intelligence agent recently flew...	\n\n1. Artificial Intelligence\n2. Lockheed Ma...	\n\n1. Artificial Intelligence\n2. Lockheed Ma...	
4	A viral video trend in Japan has got sushi\r\n...	\n\n1. Japan\n2. Sushi\n3. Food Tampering	\n\n1. Japan\n2. Sushi\n3. Food Tampering	\n\nViral video trend in Japan prompts sushi c...

Google processing - Kmeans

	rating	latitude	longitude	diversified_businesses	avg_ratings	avg_user_ratings_total	avg_price_leve	pcnt_businesses	has_website	Area_Eixample	Area_Gràcia
0	5.0	41.390142	2.169835	0.641975	3.763492	481.214286	0.134921	0.046341	1	0	0
1	4.4	41.388389	2.168717	0.641975	3.763492	481.214286	0.134921	0.046341	1	0	0
2	4.4	41.391270	2.172490	0.641975	3.763492	481.214286	0.134921	0.046341	1	0	0
3	4.1	41.389466	2.165171	0.641975	3.763492	481.214286	0.134921	0.046341	1	0	0
4	3.3	41.392059	2.173943	0.641975	3.763492	481.214286	0.134921	0.046341	0	0	0
...
2714	3.6	41.403078	2.157798	0.641975	3.899346	387.300654	0.326797	0.056271	1	0	1
2715	5.0	41.406276	2.162128	0.641975	3.899346	387.300654	0.326797	0.056271	1	0	1
2716	3.9	41.403091	2.159346	0.641975	3.899346	387.300654	0.326797	0.056271	1	0	1
2717	5.0	41.403917	2.156939	0.641975	3.899346	387.300654	0.326797	0.056271	1	0	1
2718	2.5	41.406168	2.162043	0.641975	3.899346	387.300654	0.326797	0.056271	1	0	1



THANK YOU