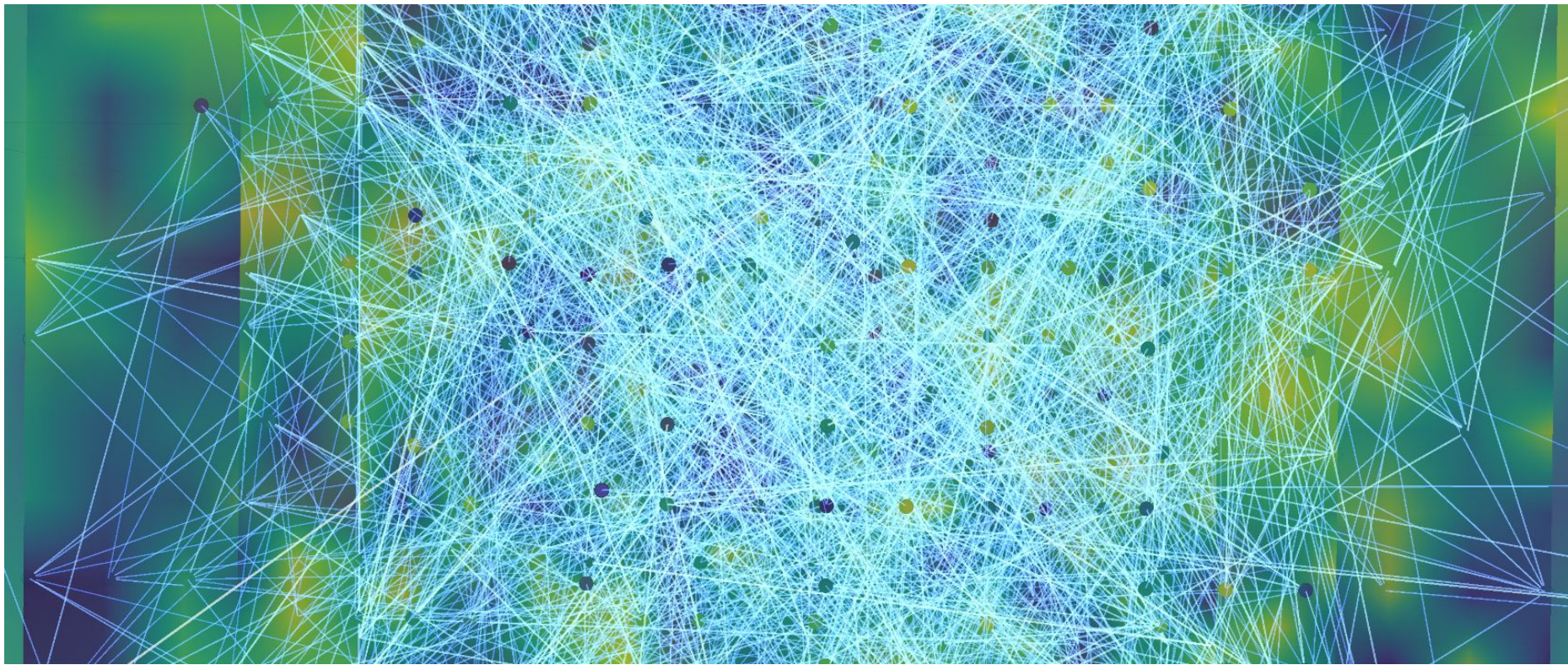




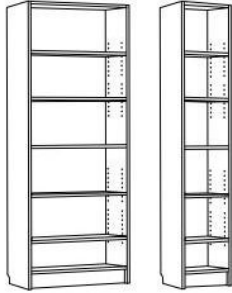
Beyond Rank Tracking

Analyzing Brand Perceptions Through Language Model Association Networks

DEJAN

STEP 1: Define your brand.

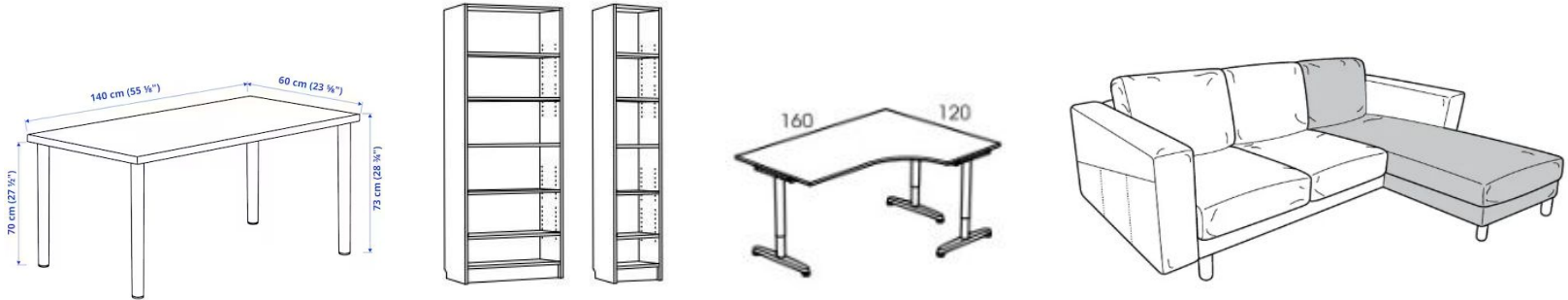
You can also pick a product, service or a person as well.



DEJAN

STEP 2: Define primary entities.

Think “tracked keywords”, but it can be any entity associated with your brand.



STEP 3: Brand → Entities

Prompt AI for entity associations with your brand.

List ten things that you associate with a brand called [BRAND] in [LOCATION].

STEP 3: Brand → Entities

Prompt AI for entity associations with your brand.

Respond in json enumerated list. Association only, no explanations or meta information.

List ten things that you associate with a brand called **IKEA** in **Australia**.

STEP 4: Entity → Brands

Prompt AI for brands associated with your entities.

List ten brands in [LOCATION] that you
associate with [ENTITY].

STEP 4: Entity → Brands

Prompt AI for brands associated with your entities.

Respond in json enumerated list. Brand name only, no explanations or meta information.

List ten brands in **Australia** that you associate with **two seater sofas**.

Bidirectional Model Probing

Run a daily probe for brand and all its associated entities.

Store results in database, txt, json or csv.

Brand → Entities

Bidirectional Model Probing

Run a daily probe for brand and all its associated entities.

Store results in database, txt, json or csv.

Brand → Entities

Entity → Brands

```
{  
  "1": "Flat-pack furniture",  
  "2": "Meatballs",  
  "3": "Showrooms",  
  "4": "Swedish design",  
  "5": "Home decor",  
  "6": "Self-assembly",  
  "7": "Affordable prices",  
  "8": "Blue and yellow logo",  
  "9": "Warehouse layout",  
  "10": "Catalogues"  
}
```

```
{  
  "1": "Flat-pack furniture",  
  "2": "Meatballs",  
  "3": "Showrooms",  
  "4": "Swedish design",  
  "5": "Home decor",  
  "6": "Self-assembly",  
  "7": "Affordable prices",  
  "8": "Blue and yellow logo",  
  "9": "Warehouse layout",  
  "10": "Catalogues"  
}
```

```
{  
  "1": "Flat-pack furniture",  
  "2": "Meatballs",  
  "3": "Showrooms",  
  "4": "Affordable prices",  
  "5": "Do-it-yourself assembly",  
  "6": "Home decor",  
  "7": "Swedish design",  
  "8": "Kitchenware",  
  "9": "Self-service warehouse",  
  "10": "Blue and yellow"  
}
```

```
{  
  "1": "Flat-pack furniture",  
  "2": "Meatballs",  
  "3": "Showrooms",  
  "4": "Swedish design",  
  "5": "Home decor",  
  "6": "Self-assembly",  
  "7": "Affordable prices",  
  "8": "Blue and yellow logo",  
  "9": "Warehouse layout",  
  "10": "Catalogues"  
}
```

```
{  
  "1": "Flat-pack furniture",  
  "2": "Meatballs",  
  "3": "Showrooms",  
  "4": "Affordable prices",  
  "5": "Do-it-yourself assembly",  
  "6": "Home decor",  
  "7": "Swedish design",  
  "8": "Kitchenware",  
  "9": "Self-service warehouse",  
  "10": "Blue and yellow"  
}
```

```
{  
  "1": "Flat-pack furniture",  
  "2": "Swedish meatballs",  
  "3": "Affordable home goods",  
  "4": "Showroom layout",  
  "5": "Assembly instructions",  
  "6": "Yellow and blue colors",  
  "7": "Self-service warehouse",  
  "8": "Modern design",  
  "9": "Scandinavian names",  
  "10": "Sustainable products"  
}
```



Output Variability

Observed daily rank changes are primarily the result of temperature and random sampling.

Less frequently, existing models are fine-tuned and new models are released.

Finally grounded results have the capacity to significantly influence model's output.

- 1. Stochastic sampling.**
- 2. Fine-Tuning.**
- 3. Model Releases.**
- 4. Grounding.**

Data Processing

Rank tracking graphs and data can get very messy over time so it's important to apply a level of data processing to keep things tidy.

- **Auto-Normalization (IKEA, Ikea, ikea, ikea.com, 2.IKEA)**
- **Manual Canonicalization (meatballs → swedish meatballs)**
- **Weekly rank aggregation**
- **Cross-model data merging**

1. Flat-pack furniture
2. Meatballs
3. Showrooms
4. Swedish design
5. Home decor
6. Self-assembly
7. Affordable prices
8. Blue and yellow logo
9. Warehouse layout
10. Catalogues
11. Do-it-yourself assembly
12. Self-service warehouse
13. Blue and yellow
14. Swedish meatballs
15. Affordable home goods
16. Showroom layout
17. Assembly instructions
18. Yellow and blue colors
19. Modern design
20. Scandinavian names
21. Sustainable products
22. Kitchenware

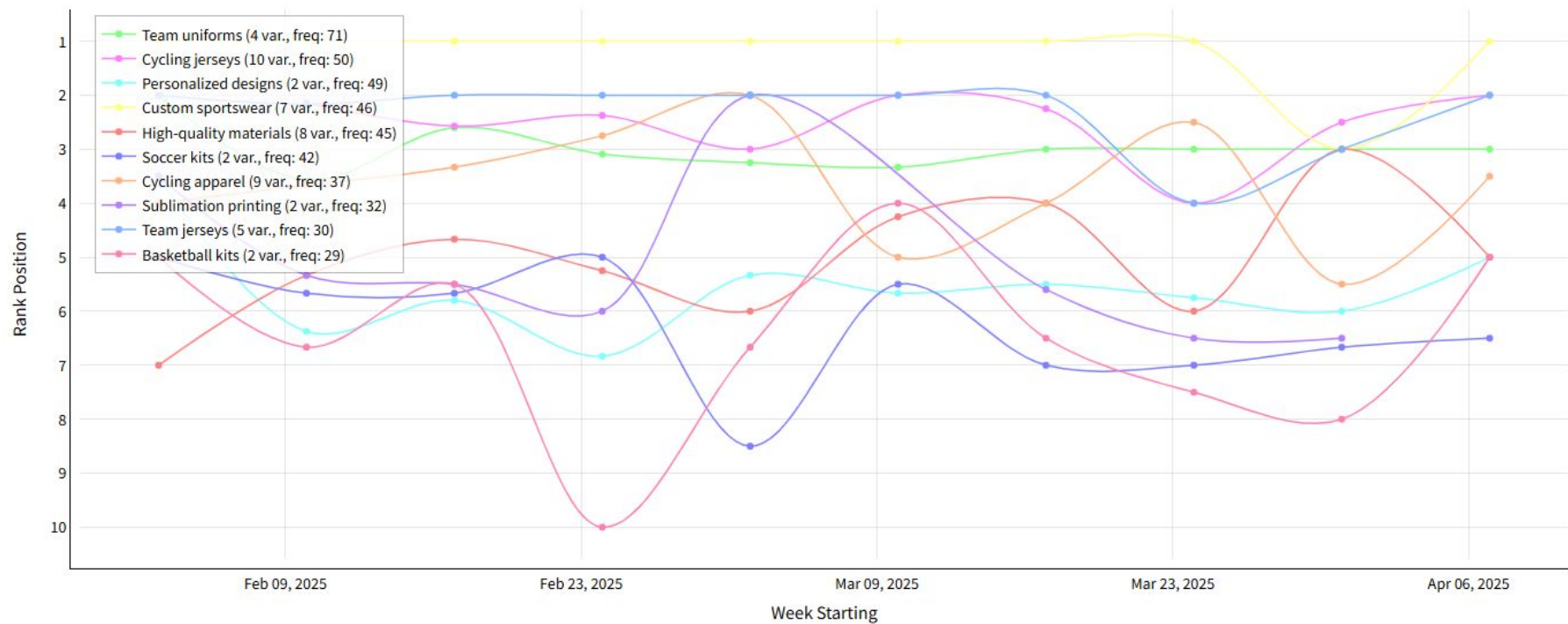
Primary Dimensions:

- Frequency
- Rank

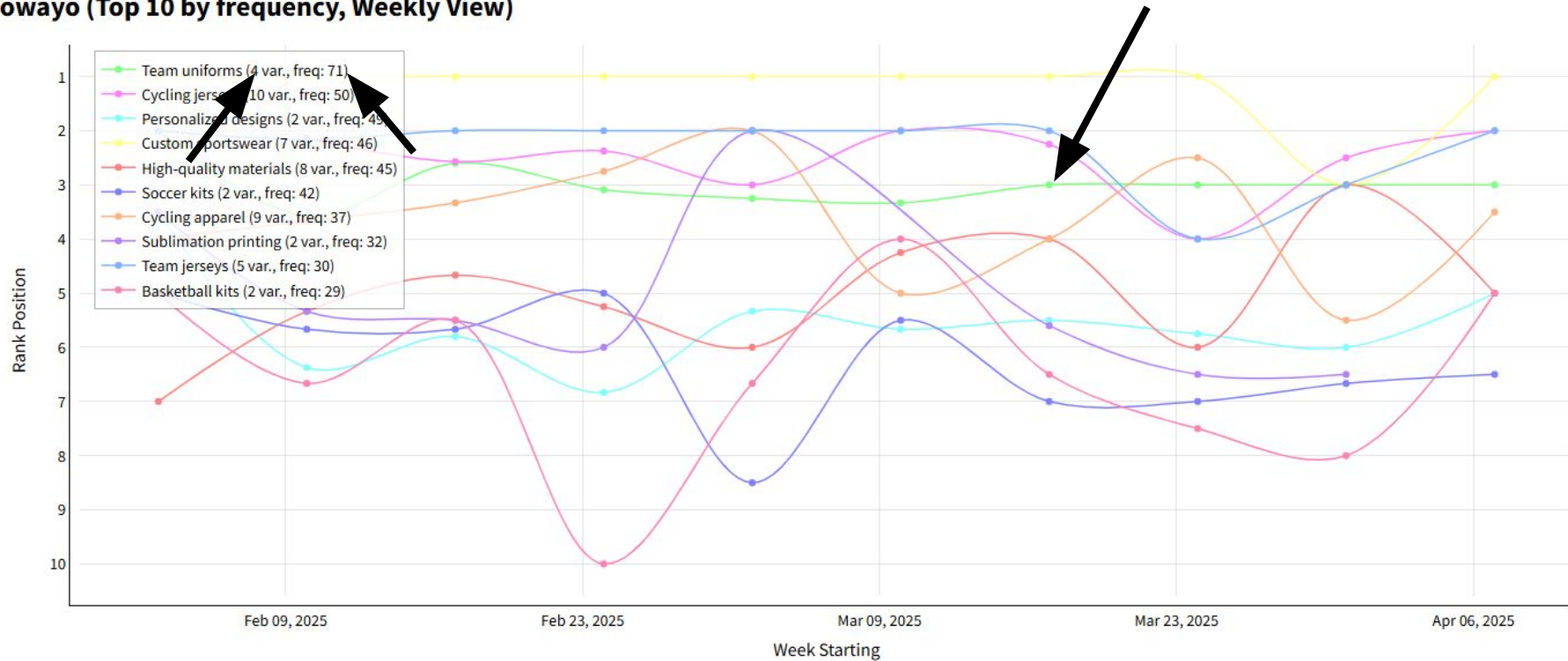
Real-World Example

Owayo is a brand which does custom cycling jerseys.
They're interested in being in model's internal memory.

owayo (Top 10 by frequency, Weekly View)



owayo (Top 10 by frequency, Weekly View)

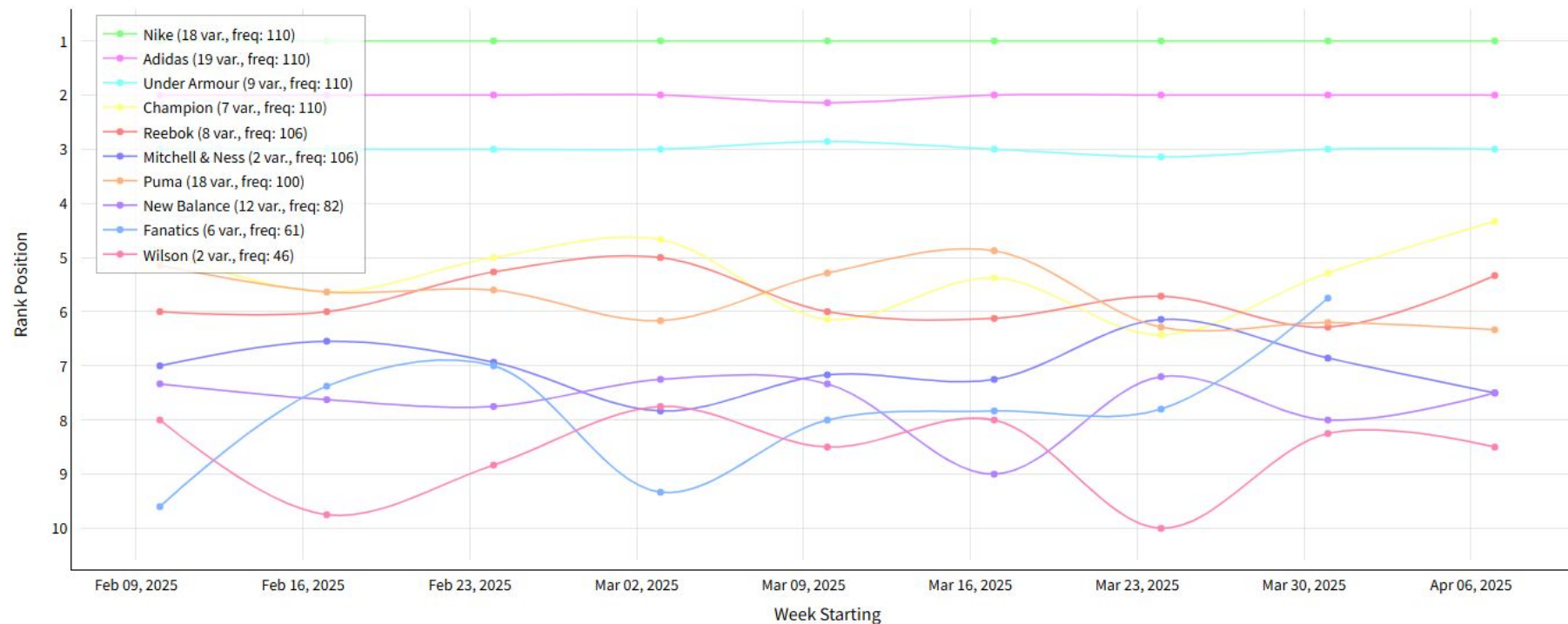


INSIGHT:

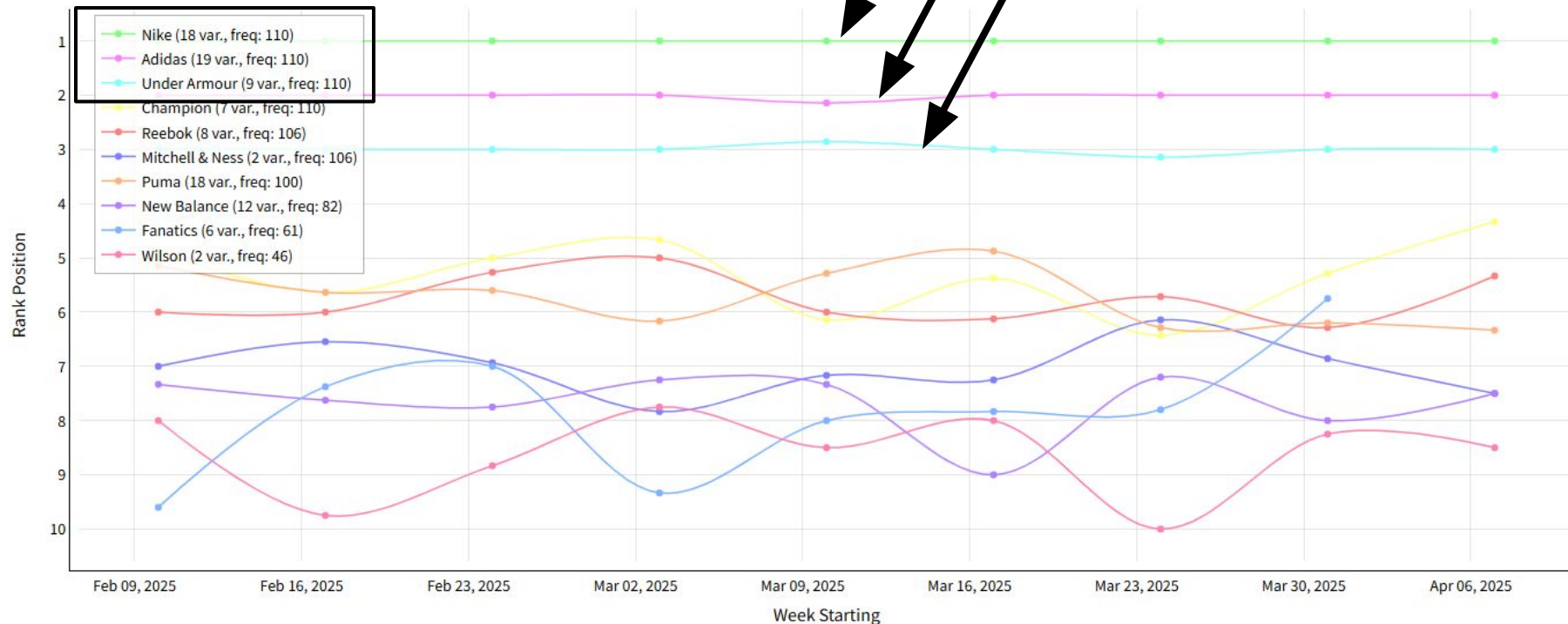
Frequency as an expression of strength of brand to entity association in the model.

DEJAN

Custom Basketball Jerseys (Top 10 by frequency, Weekly View)



Custom Basketball Jerseys (Top 10 by frequency, Weekly View)



INSIGHT:

Volatility level as an inverse expression of brand authority.
High oscillations suggest lower model confidence.

DEJAN

Top 20 Entities

Entities Als associate with your brand.

	Entity	Frequency	Avg Position	Weighted Score
1	Team uniforms	50	2.96	0.704
2	Custom sportswear	41	1.44	0.702
3	Cycling apparel	41	3.39	0.542
4	Cycling jerseys	35	2.69	0.512
5	High-quality materials	45	5.49	0.406
6	Custom sports apparel	19	1.00	0.342
7	Team jerseys	20	2.30	0.308
8	1. Custom team apparel	17	1.00	0.306
9	Personalized designs	37	6.00	0.296
10	Custom sports jerseys	15	1.00	0.270

Top 20 Brands

Brands Als associate with your tracked phrases.

	Entity	Frequency	Avg Position	Weighted Score
1	Nike	790	1.56	0.852
2	Adidas	791	2.46	0.770
3	Under Armour	713	3.74	0.585
4	Puma	493	4.59	0.355
5	Champion	494	5.74	0.288
6	Reebok	485	5.66	0.288
7	New Balance	380	6.68	0.179
8	Primal Wear	156	3.95	0.124
9	Fanatics	266	6.95	0.117
10	Mitchell & Ness	309	7.63	0.111

Top 20 Entities

Entities AIs associate with your brand.

	Entity	Frequency	Avg Position	Weighted Score
1	Team uniforms	50	2.96	0.704
2	Custom sportswear	41	1.44	0.702
3	Cycling apparel	41	3.39	0.542
4	Cycling jerseys	35	2.69	0.512
5	High-quality materials	45	5.49	0.406
6	Custom sports apparel	19	1.00	0.342
7	Team jerseys	20	2.30	0.308
8	1. Custom team apparel	17	1.00	0.306
9	Personalized designs	37	6.00	0.296
10	Custom sports jerseys	15	1.00	0.270

Top 20 Brands

Brands AIs associate with your tracked phrases.

	Entity	Frequency	Avg Position	Weighted Score
1	Nike	790	1.56	0.852
2	Adidas	791	2.46	0.770
3	Under Armour	713	3.74	0.585
4	Puma	493	4.59	0.355
5	Champion	494	5.74	0.288
6	Reebok	485	5.66	0.288
7	New Balance	380	6.68	0.179
8	Primal Wear	156	3.95	0.124
9	Fanatics	266	6.95	0.117
10	Mitchell & Ness	309	7.63	0.111

$$\text{normalized_freq} = \frac{f}{f_{\max}}$$

$$\text{normalized_pos} = 1 - \frac{p}{p_{\max}}$$

$$\text{weighted_score} = \left(\frac{f}{f_{\max}} \right) \cdot \left(1 - \frac{p}{p_{\max}} \right)$$

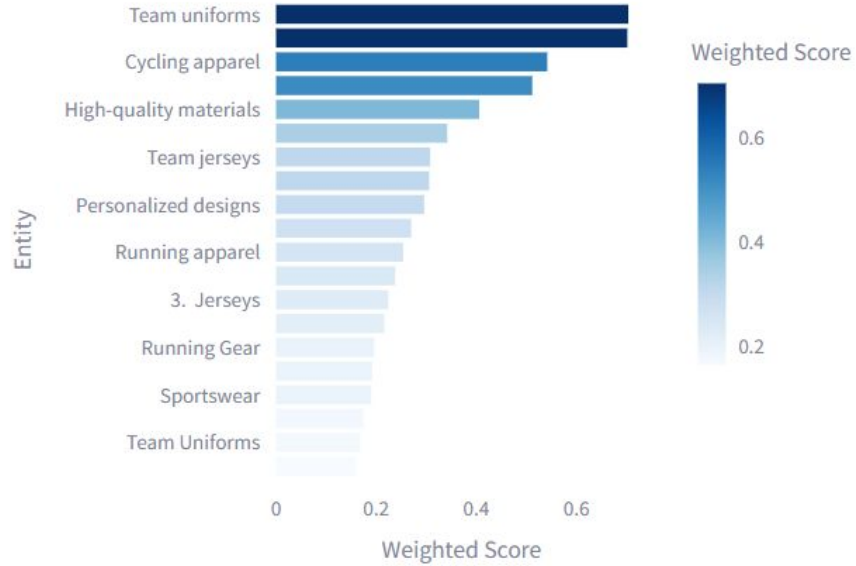
f = frequency of the entity

p = average position of the entity

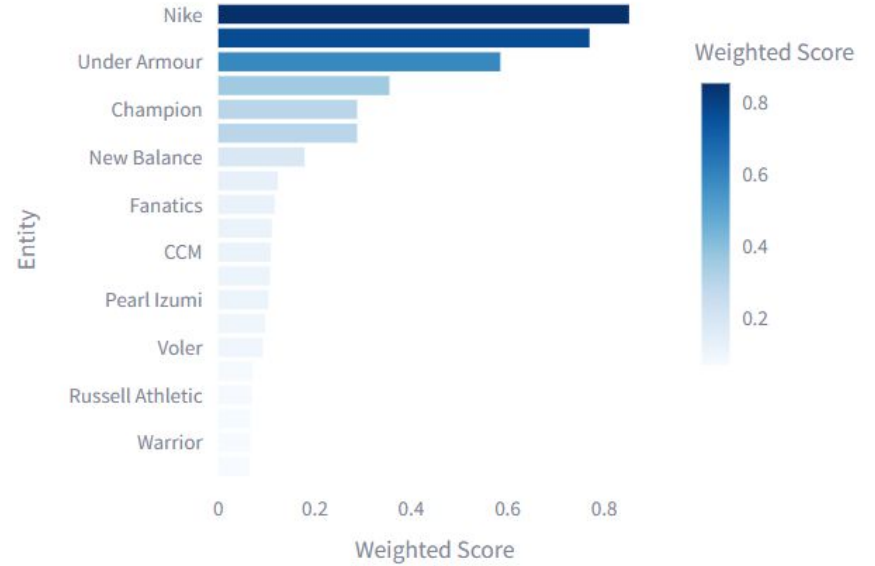
$f_{\max}$ = maximum frequency across all entities

$p_{\max}$ = maximum average position across all entities

Top Associations



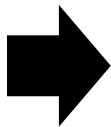
Top Associations



Quick Recap

Before we dive deeper.

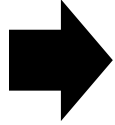
DEJAN



Define Target Brands: Identify the brand(s) to be analyzed. This could be a single brand, a set of competitors, or a broader category of brands.

2. **Define Tracked Phrases (Entities):** Select relevant entities, keywords, concepts, or phrases related to the brand's industry, products, or services.
3. **Brand-to-Entity (B→E):** "List ten things that you associate with a brand called [Brand Name]." This reveals the concepts and entities most strongly linked to the brand.
4. **Entity-to-Brand (E→B):** "List ten brands that you associate with [Entity/Keyword]." This identifies competitors and reveals the brands most strongly associated with a specific concept.
5. **Entity Extraction:** Extract individual entities from the LLM responses. This involves cleaning and standardizing the text.
6. **Canonicalization:** Group variant forms of the same entity (e.g., "OWAYO", "owayo", "Owayo") under a single canonical representation.
7. **Ranking:** Assign ranks to the entities based on their position in the LLM's response. Typically, the first item in a list is considered rank 1, the second rank 2, and so on.

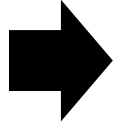
1. **Define Target Brands:** Identify the brand(s) to be analyzed. This could be a single brand, a set of competitors, or a broader category of brands.



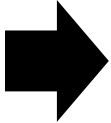
Define Tracked Phrases (Entities): Select relevant entities, keywords, concepts, or phrases related to the brand's industry, products, or services.

3. **Brand-to-Entity (B→E):** "List ten things that you associate with a brand called [Brand Name]." This reveals the concepts and entities most strongly linked to the brand.
4. **Entity-to-Brand (E→B):** "List ten brands that you associate with [Entity/Keyword]." This identifies competitors and reveals the brands most strongly associated with a specific concept.
5. **Entity Extraction:** Extract individual entities from the LLM responses. This involves cleaning and standardizing the text.
6. **Canonicalization:** Group variant forms of the same entity (e.g., "OWAYO", "owayo", "Owayo") under a single canonical representation.
7. **Ranking:** Assign ranks to the entities based on their position in the LLM's response. Typically, the first item in a list is considered rank 1, the second rank 2, and so on.

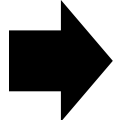
1. **Define Target Brands:** Identify the brand(s) to be analyzed. This could be a single brand, a set of competitors, or a broader category of brands.
2. **Define Tracked Phrases (Entities):** Select relevant entities, keywords, concepts, or phrases related to the brand's industry, products, or services.



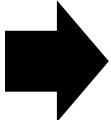
3. **Brand-to-Entity (B→E):** "List ten things that you associate with a brand called [Brand Name]." This reveals the concepts and entities most strongly linked to the brand.
4. **Entity-to-Brand (E→B):** "List ten brands that you associate with [Entity/Keyword]." This identifies competitors and reveals the brands most strongly associated with a specific concept.
5. **Entity Extraction:** Extract individual entities from the LLM responses. This involves cleaning and standardizing the text.
6. **Canonicalization:** Group variant forms of the same entity (e.g., "OWAYO", "owayo", "Owayo") under a single canonical representation.
7. **Ranking:** Assign ranks to the entities based on their position in the LLM's response. Typically, the first item in a list is considered rank 1, the second rank 2, and so on.

1. **Define Target Brands:** Identify the brand(s) to be analyzed. This could be a single brand, a set of competitors, or a broader category of brands.
2. **Define Tracked Phrases (Entities):** Select relevant entities, keywords, concepts, or phrases related to the brand's industry, products, or services.
3. **Brand-to-Entity (B→E):** "List ten things that you associate with a brand called [Brand Name]." This reveals the concepts and entities most strongly linked to the brand.
-  **Entity-to-Brand (E→B):** "List ten brands that you associate with [Entity/Keyword]." This identifies competitors and reveals the brands most strongly associated with a specific concept.
5. **Entity Extraction:** Extract individual entities from the LLM responses. This involves cleaning and standardizing the text.
6. **Canonicalization:** Group variant forms of the same entity (e.g., "OWAYO", "owayo", "Owayo") under a single canonical representation.
7. **Ranking:** Assign ranks to the entities based on their position in the LLM's response. Typically, the first item in a list is considered rank 1, the second rank 2, and so on.

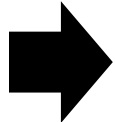
1. **Define Target Brands:** Identify the brand(s) to be analyzed. This could be a single brand, a set of competitors, or a broader category of brands.
2. **Define Tracked Phrases (Entities):** Select relevant entities, keywords, concepts, or phrases related to the brand's industry, products, or services.
3. **Brand-to-Entity (B→E):** "List ten things that you associate with a brand called [Brand Name]." This reveals the concepts and entities most strongly linked to the brand.
4. **Entity-to-Brand (E→B):** "List ten brands that you associate with [Entity/Keyword]." This identifies competitors and reveals the brands most strongly associated with a specific concept.

 **Entity Extraction:** Extract individual entities from the LLM responses. This involves cleaning and standardizing the text.

6. **Canonicalization:** Group variant forms of the same entity (e.g., "OWAYO", "owayo", "Owayo") under a single canonical representation.
7. **Ranking:** Assign ranks to the entities based on their position in the LLM's response. Typically, the first item in a list is considered rank 1, the second rank 2, and so on.

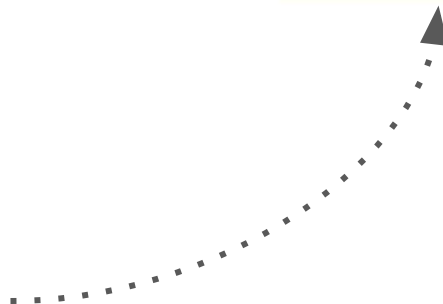
1. **Define Target Brands:** Identify the brand(s) to be analyzed. This could be a single brand, a set of competitors, or a broader category of brands.
 2. **Define Tracked Phrases (Entities):** Select relevant entities, keywords, concepts, or phrases related to the brand's industry, products, or services.
 3. **Brand-to-Entity (B→E):** "List ten things that you associate with a brand called [Brand Name]." This reveals the concepts and entities most strongly linked to the brand.
 4. **Entity-to-Brand (E→B):** "List ten brands that you associate with [Entity/Keyword]." This identifies competitors and reveals the brands most strongly associated with a specific concept.
 5. **Entity Extraction:** Extract individual entities from the LLM responses. This involves cleaning and standardizing the text.
- 
- Canonicalization:** Group variant forms of the same entity (e.g., "OWAYO", "owayo", "Owayo") under a single canonical representation.
7. **Ranking:** Assign ranks to the entities based on their position in the LLM's response. Typically, the first item in a list is considered rank 1, the second rank 2, and so on.

1. **Define Target Brands:** Identify the brand(s) to be analyzed. This could be a single brand, a set of competitors, or a broader category of brands.
2. **Define Tracked Phrases (Entities):** Select relevant entities, keywords, concepts, or phrases related to the brand's industry, products, or services.
3. **Brand-to-Entity (B→E):** "List ten things that you associate with a brand called [Brand Name]." This reveals the concepts and entities most strongly linked to the brand.
4. **Entity-to-Brand (E→B):** "List ten brands that you associate with [Entity/Keyword]." This identifies competitors and reveals the brands most strongly associated with a specific concept.
5. **Entity Extraction:** Extract individual entities from the LLM responses. This involves cleaning and standardizing the text.
6. **Canonicalization:** Group variant forms of the same entity (e.g., "OWAYO", "owayo", "Owayo") under a single canonical representation.

 **Ranking:** Assign ranks to the entities based on their position in the LLM's response. Typically, the first item in a list is considered rank 1, the second rank 2, and so on.

You can do all that via **AI Rank**

dejan.ai



AI Rank Login

Taking in to the next step.

```
PS C:\projects\airank\network> python export_brand_story.py
[2025-04-10 12:41:04] Starting Brand Story Export for: 'Owayo'
  Database: data.db
  Input Graph: full_network_with_pagerank.graphml
  Use Canonical: True
  Output JSON: brand_story_owayo.json
-----
Database connection successful: data.db
Using cleaned brand name for analysis: 'Owayo'
Loading graph 'full_network_with_pagerank.graphml' for PageRank...
Graph loaded (33.33s). Nodes: 656415, Edges: 1230160
Fetching overall metrics for 'Owayo'...
  Total Mentions: 688
  PageRank: 1.6238244869969221e-06
Fetching direct associations (B->E)...
  Found 293 direct associations meeting min frequency.
Fetching contextual appearances (E->B)...
  Found 17 contexts where brand appears meeting min frequency.
Calculating top associated concepts...
  Found 15 top associated concepts.
Identifying top competitors in shared contexts...
  Found 3260 potential competitors meeting min frequency.
Exporting brand story to: brand_story_owayo.json...
JSON export successful.
[2025-04-10 12:41:56] Database connection closed.
-----
[2025-04-10 12:41:56] Brand story export process finished. Total time: 52.29 seconds.
PS C:\projects\airank\network>
```

Controls

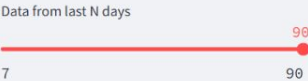
Select a project

DEJAN

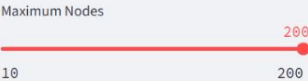
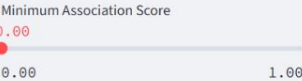
Data Options

- ☒ Use Canonical Entities ?
- ☒ Show Second-Order Connections ?

Time Range



Network Parameters



Graph Layout

Select Layout Type

Force-Directed (Spring)

This visualization shows the interconnected network of brands and entities, revealing relationships that go beyond simple rank tracking.

Association Network Brand Visibility Brand Authority Your Brand Tracking

Network Statistics

Brands	Tracked Phrases	Result Entities	Result Brands
3	25	562	1623

Network Insights

Central Nodes

These are the most connected entities in the network:

- Australian SEO Agency (Centrality: 0.160)
- Australian SEO Consultant (Centrality: 0.135)
- SEO Consultant (Centrality: 0.133)
- dan petrovic (Centrality: 0.128)
- Dan Petrovic (Centrality: 0.124)

Brand Similarities

Brands that share similar entity associations:

- DEJAN SEO and SEO Company Australia share 3 entities (Similarity: 0.01)
- DEJAN SEO and Boostability share 3 entities (Similarity: 0.01)
- DEJAN SEO and Go Click On share 3 entities (Similarity: 0.01)
- DEJAN SEO and SOCIALFUEL Media share 3 entities (Similarity: 0.01)

Bridge Nodes

These entities connect different parts of the network:

- Digital Nomads HQ (Betweenness: 0.011)
- Clearwater Agency (Betweenness: 0.011)
- Digital Eagles (Betweenness: 0.011)
- Loopex Digital (Betweenness: 0.011)
- Online Marketing Gurus (Betweenness: 0.011)

Entity Similarities

Entities that share similar brand associations:

- Google search ranking help and SEO services share 67 brands (Similarity: 0.41)
- SEO consultant and best SEO experts share 72 brands (Similarity: 0.38)
- Australian SEO and SEO Consultant share 145 brands (Similarity: 0.37)
- Google search ranking help and best SEO experts share 64 brands (Similarity: 0.36)



Controls

Select a project

DEJAN

Data Options

☒ Use Canonical Entities ?

☒ Show Second-Order Connections ?

Time Range

Data from last N days

7

90

Network Parameters

Minimum Association Score

0.00

1.00

Maximum Nodes

10

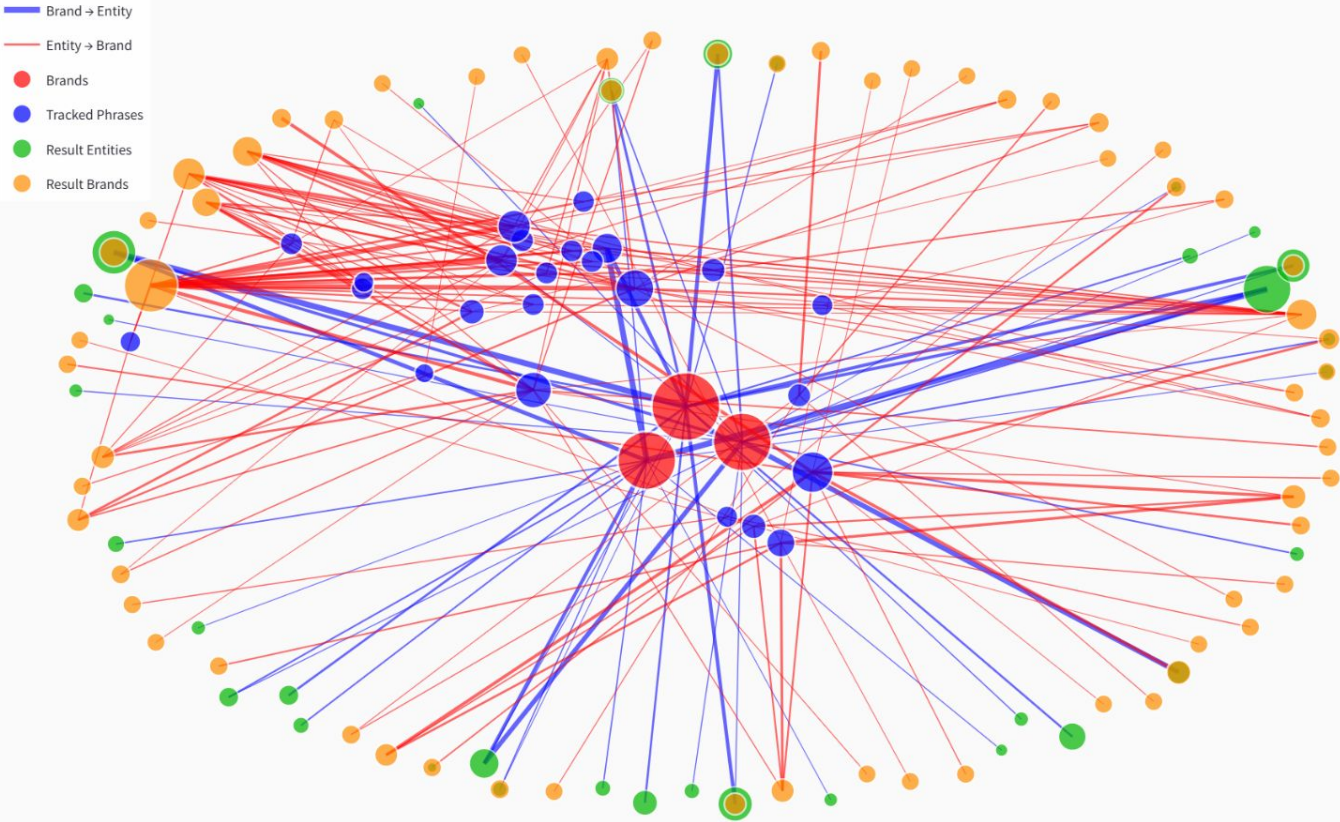
200

Graph Layout

Select Layout Type

Force-Directed (Spring)

Brand and Entity Association Network



Controls

Select a project

DEJAN

Data Options

- ☒ Use Canonical Entities ?
- ☒ Show Second-Order Connections ?

Time Range

Data from last N days

90

7

90

Network Parameters

Minimum Association Score

0.00

0.00

1.00

Maximum Nodes

200

10

200

Graph Layout

Select Layout Type

Concentric Circles

AI Rank: Brand-Entity Association Networks

This visualization shows the interconnected network of brands and entities, revealing relationships that go beyond simple rank tracking.

Association Network **Brand Visibility** Brand Authority Your Brand Tracking

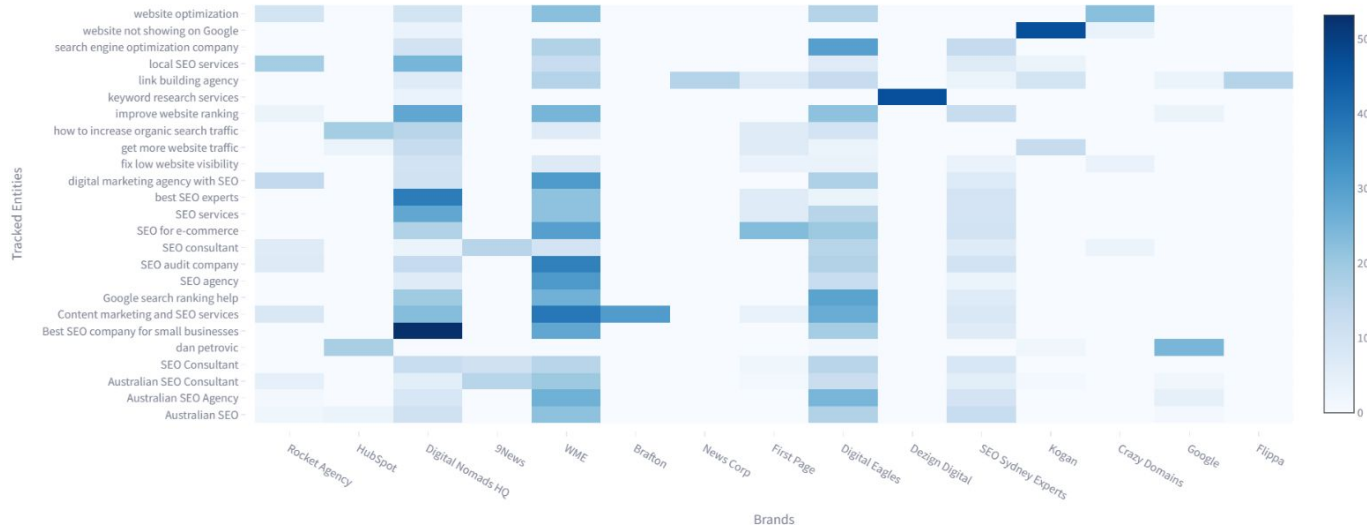
Brand Visibility Analysis

This section shows how often brands appear in AI model responses for specific tracked entities. The data provides a clear view of brand visibility and market share across different concept areas.

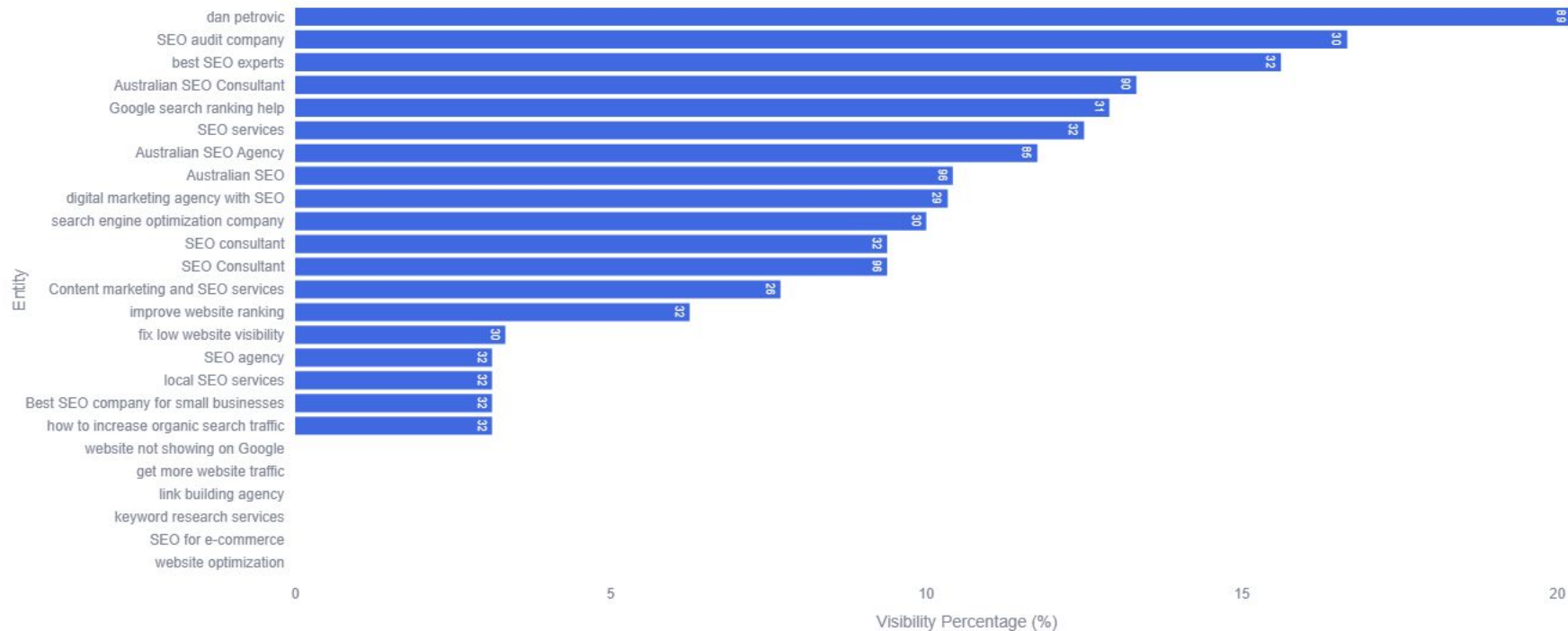
Select Entity to Analyze

All Entities

Brand Visibility Heatmap Across Tracked Entities



'Dejan SEO' Visibility by Entity



Controls

Select a project

owayo.com

Data Options

- ☒ Use Canonical Entities ⓘ
- ☒ Show Second-Order Connections ⓘ

Time Range

Data from last N days

790

Network Parameters

Minimum Association Score

0.001.00

Maximum Nodes

10200

Graph Layout

Select Layout Type

Force-Directed (Spring)

Brand Authority Details

Rank	Brand	Authority Score	Avg Visibility %	Total Appearances	Avg Position
1	Nike	92.154	86.34	414	1.72
2	Primal Wear	87.46	74.78	86	4.18
3	Castelli	83.33	71.3	82	4.47
4	CCM	81.56	64.84	59	3.06
5	Under Armour	78.974	78.91	378	4.07
6	Adidas	77.285	72.22	414	3.13
7	Pearl Izumi	71.89	55.65	64	3.4
8	Bauer	70.47	50.55	46	2.29
9	Voler	65.78	50.43	58	3.81
10	Puma	64.0775	64.56	248	4.88

Brand Performance By Entity

See how top brands perform across different tracked entities:

Select Brands to Compare

Nike x

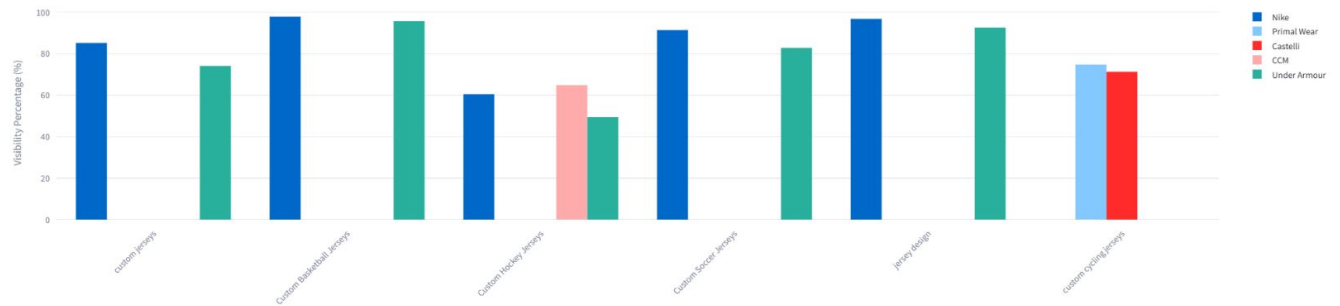
Primal Wear x

Castelli x

CCM x

Under Armour x

Brand Visibility Across Entities



Controls

Select a project

owayo.com

Data Options

☒ Use Canonical Entities ?

☒ Show Second-Order Connections ?

Time Range

Data from last N days

7

90

90

Network Parameters

Minimum Association Score

0.00

0.00

1.00

Maximum Nodes

10

200

Graph Layout

Select Layout Type

Force-Directed (Spring)

AI Rank: Brand-Entity Association Networks

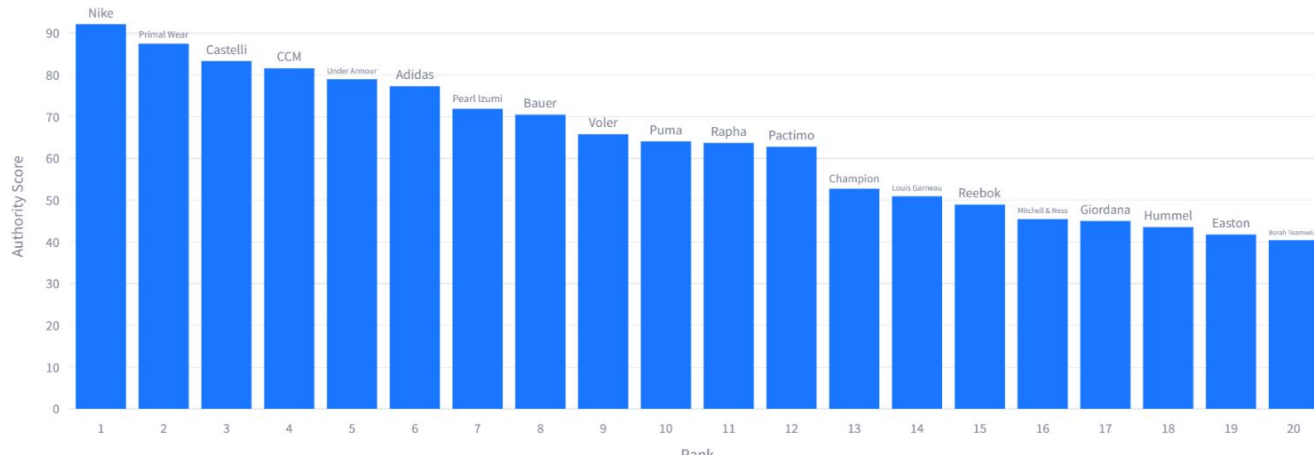
This visualization shows the interconnected network of brands and entities, revealing relationships that go beyond simple rank tracking.

Association Network Brand Visibility **Brand Authority** Your Brand Tracking

Brand Authority Index ⇄

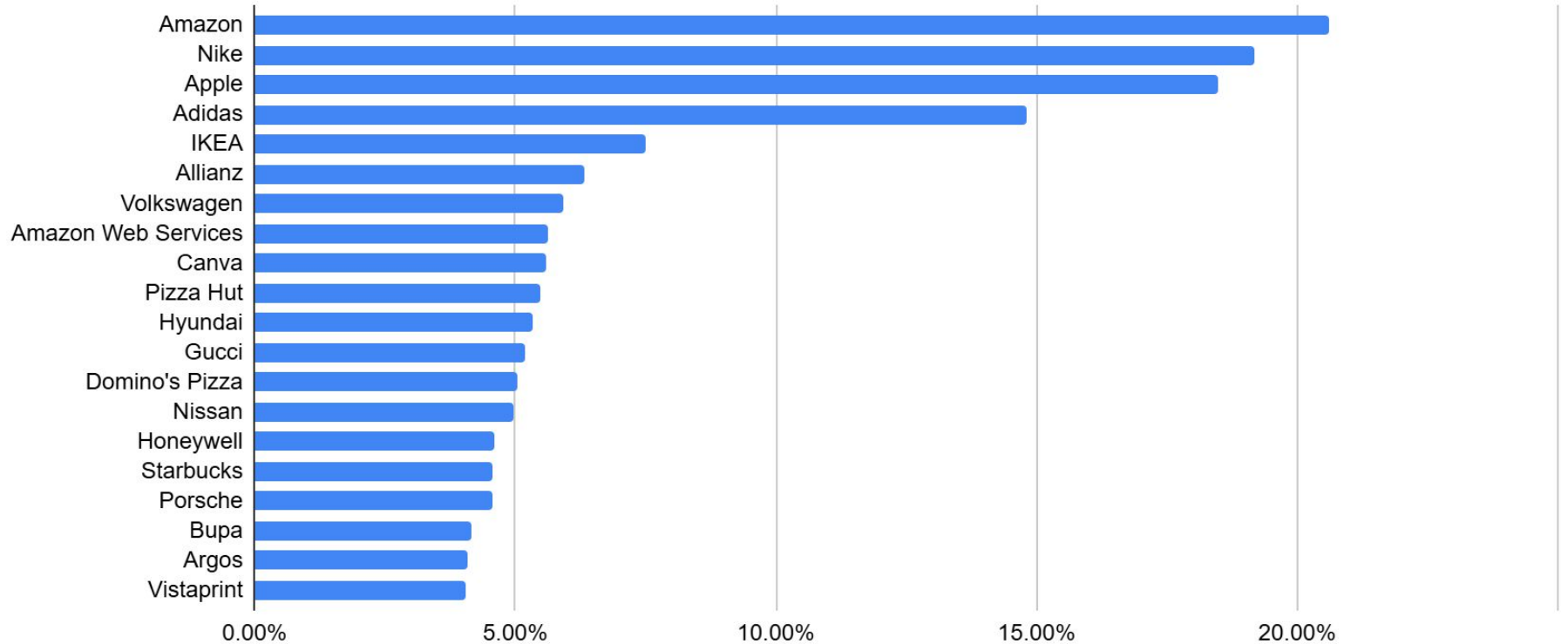
The Brand Authority Index measures how strongly brands are associated with the tracked entities. It considers both how frequently a brand appears and its average position in responses.

Brand Authority Index (Top 20)

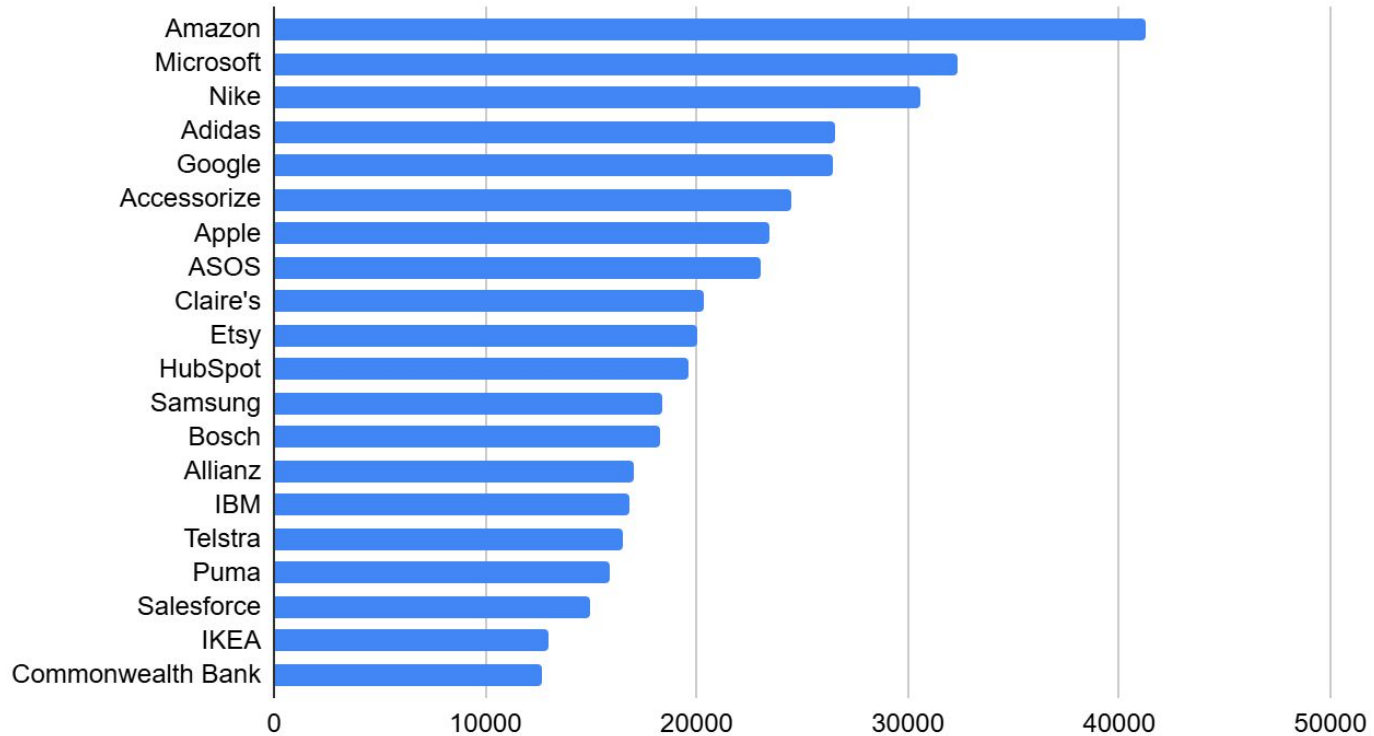


DEJAN

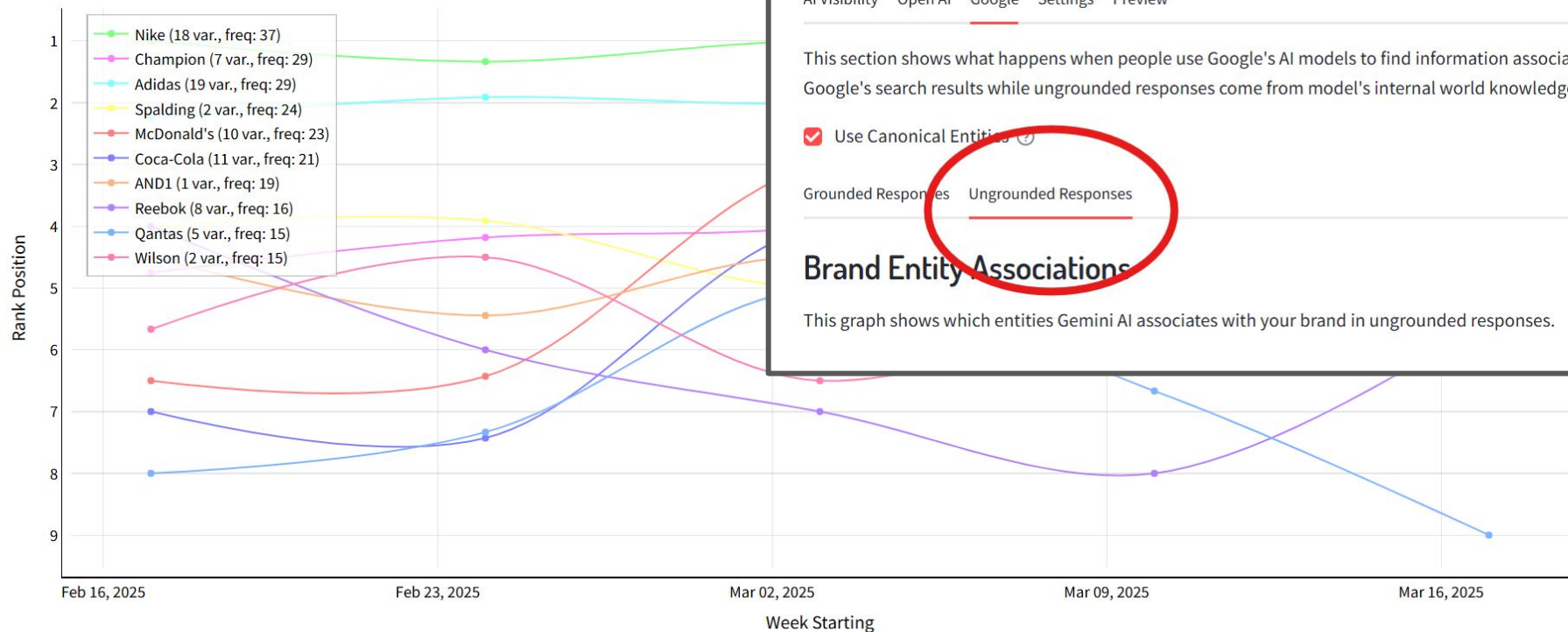
Most Influential Brands



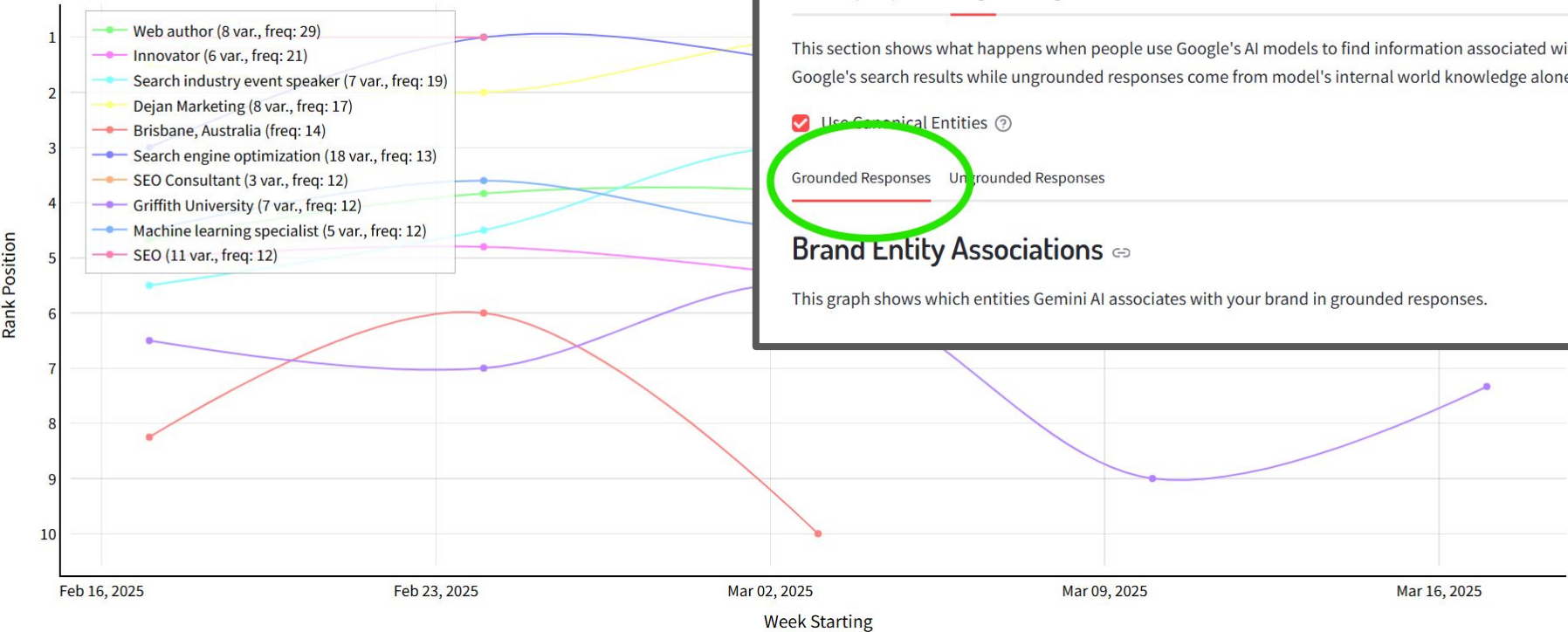
Most Mentioned Brands

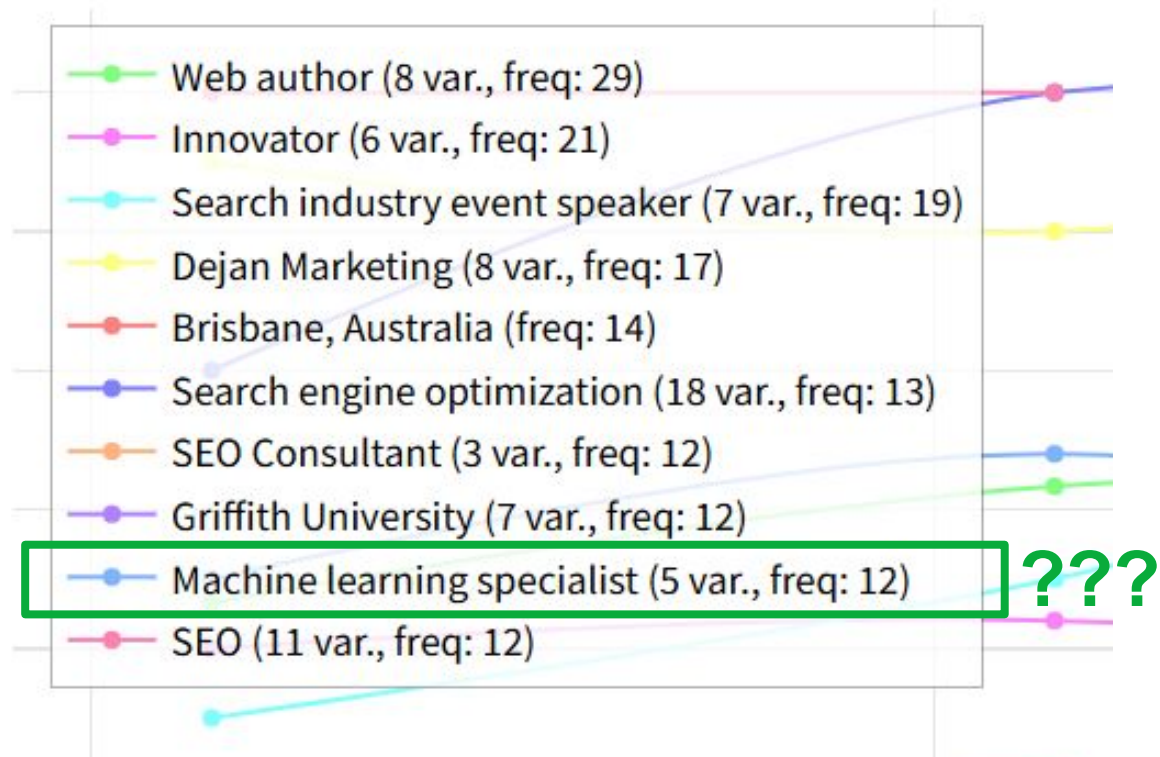


dan petrovic (Top 10 by frequency, Weekly View)



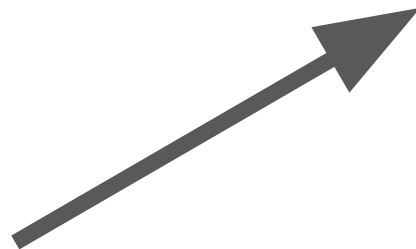
Dan Petrovic (Top 10 by frequency, Weekly View)





Dan Petrovic is the managing director of [DEJAN](#) and a well-known name in the field of search engine optimisation. Dan is a machine learning specialist and a highly regarded search industry event speaker.

Connect with Dan on [Twitter](#) or [LinkedIn](#)



I just like...
WROTE IT DOWN.
And that's it.



Lily Ray 🧐 🗨️

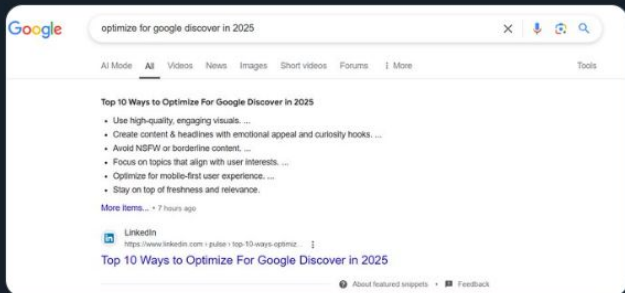
@lilyraynyc



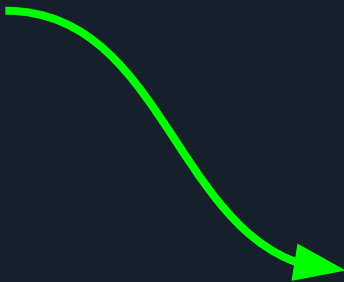
SEO test confirmed. I wrote this 7 hours ago.

LinkedIn Pulse for the win.

(Also, this is so dumb, I can't believe it actually works)



7:31 AM · Mar 26, 2025 · 75.7K Views

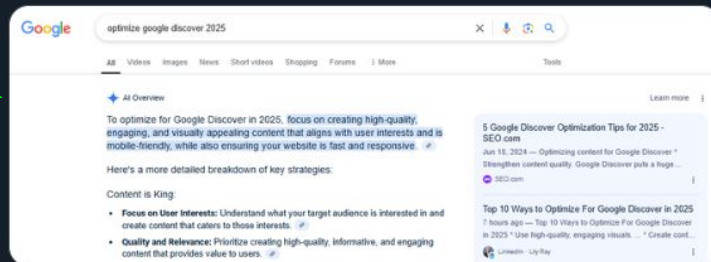


Lily Ray 🧐 🗨️

@lilyraynyc



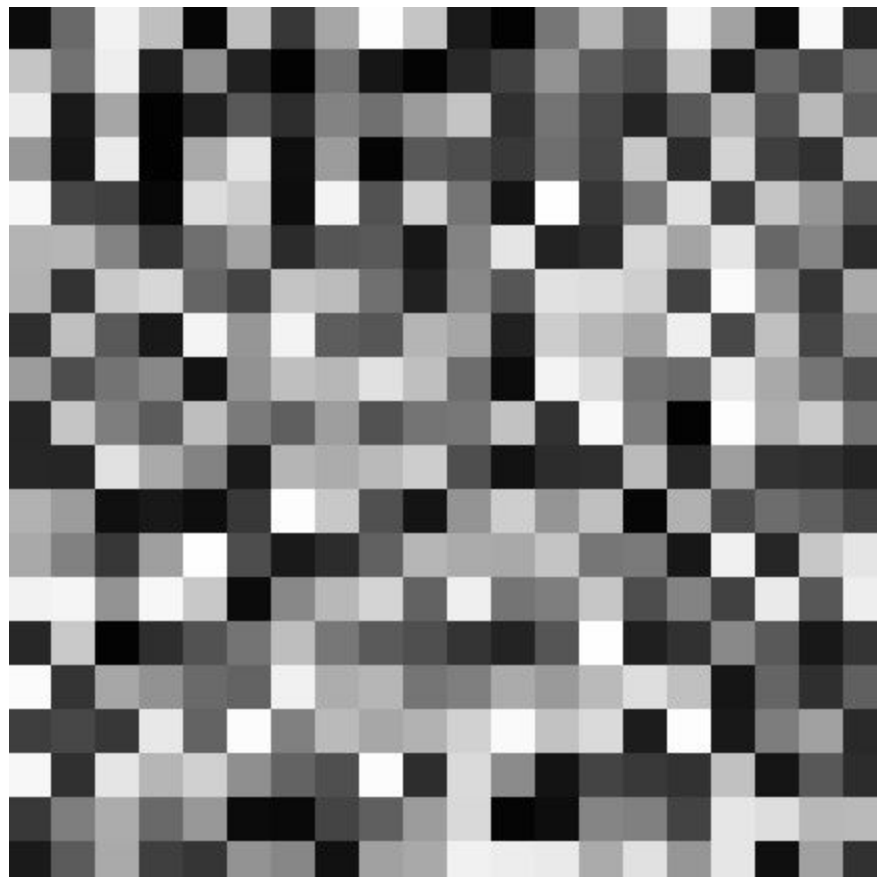
And in AIO now too.



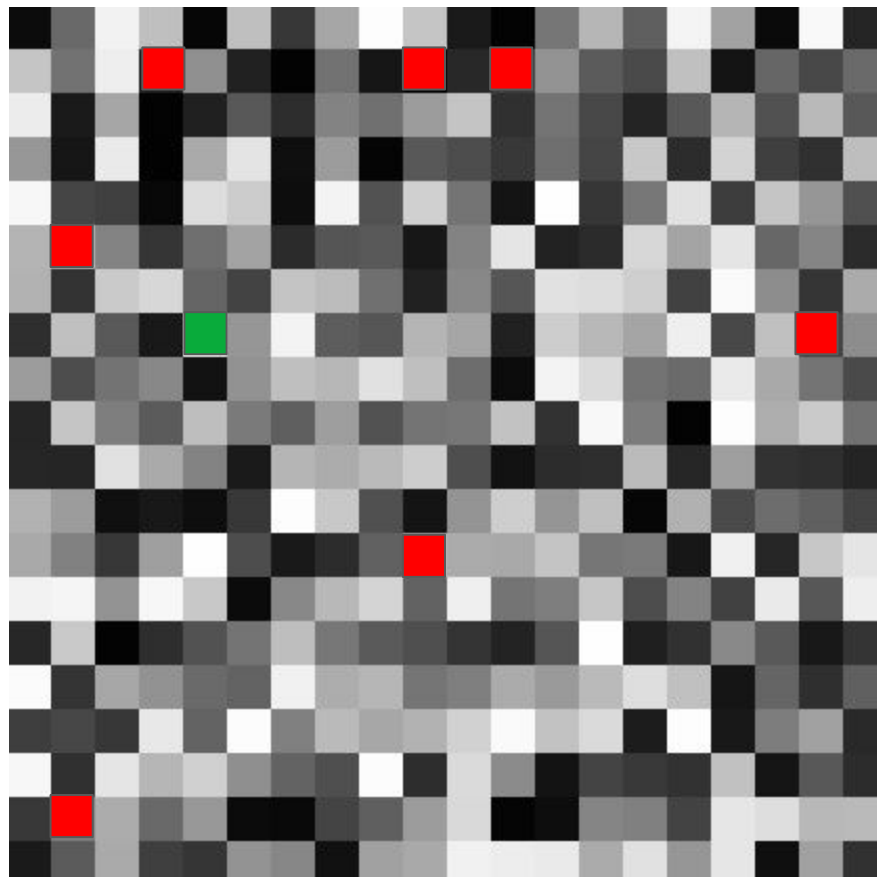
7:40 AM · Mar 26, 2025 · 7,975 Views

LLM visibility tracking. Check.
How to actually influence the models?

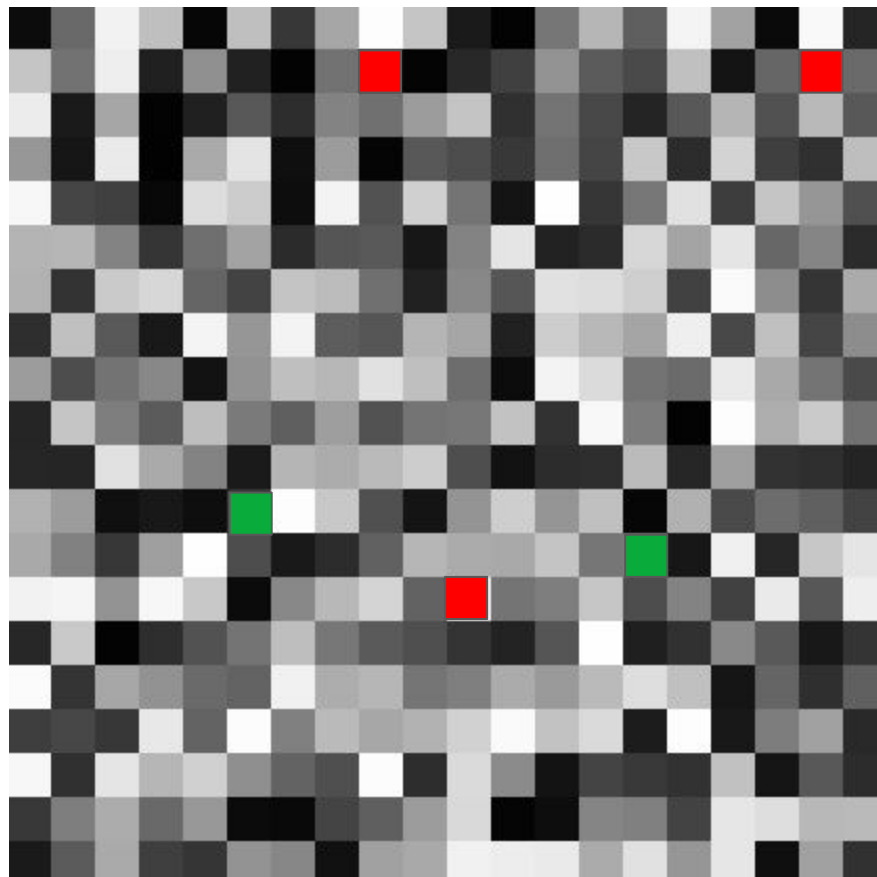
The segue.



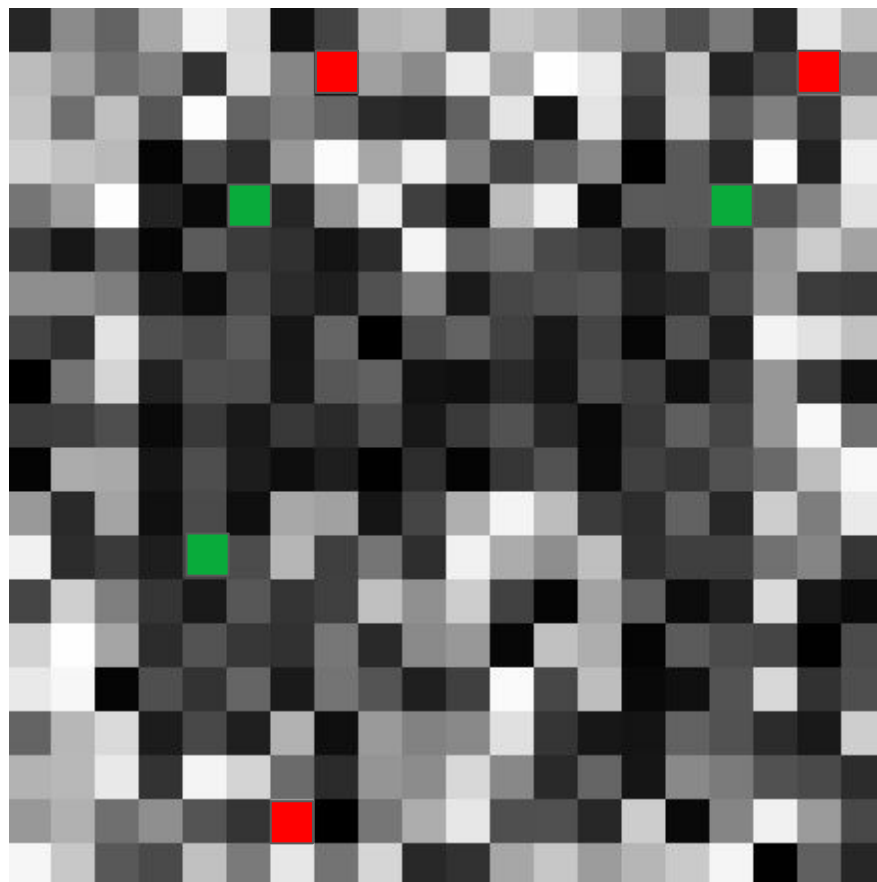
DEJAN



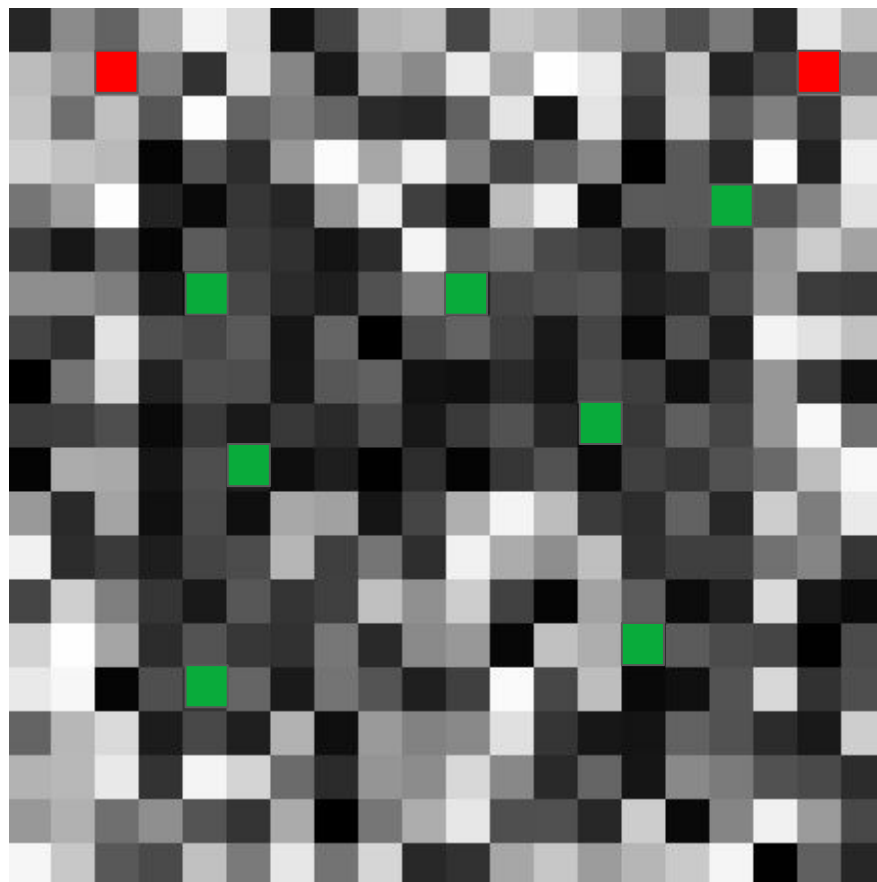
DEJAN



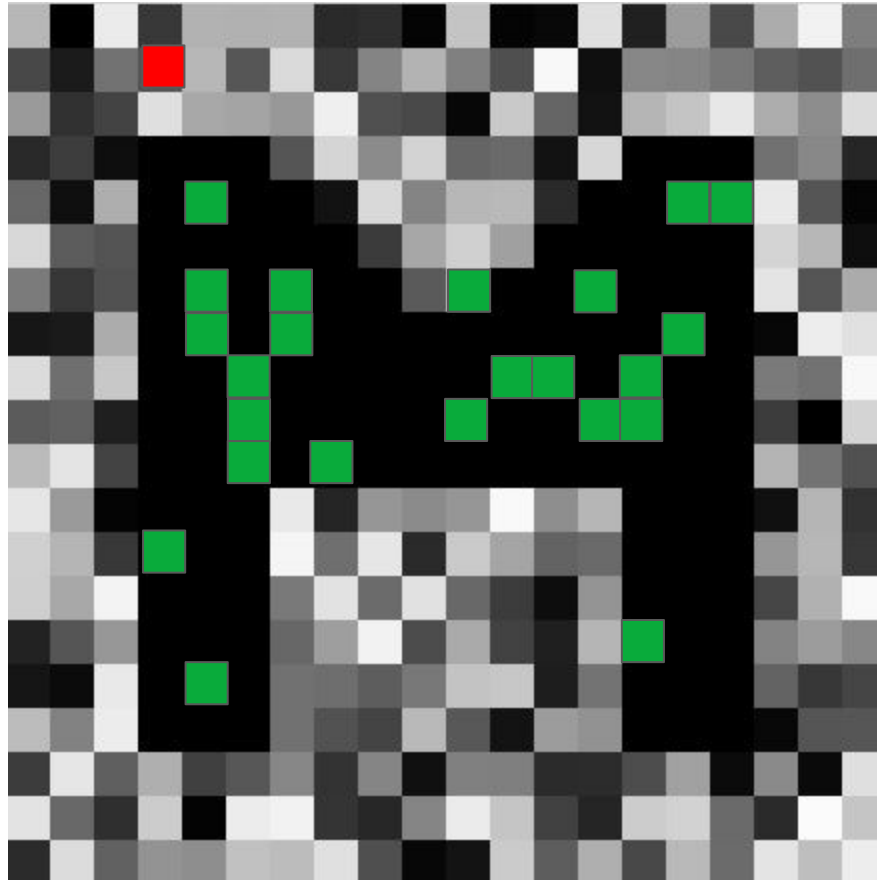
DEJAN



DEJAN



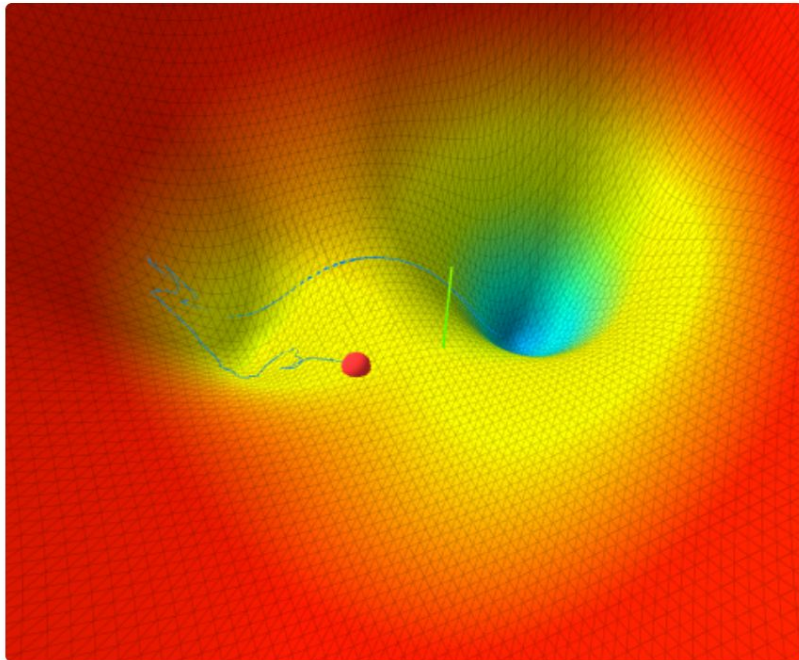
DEJAN



DEJAN

Model Optimization Loss Landscape

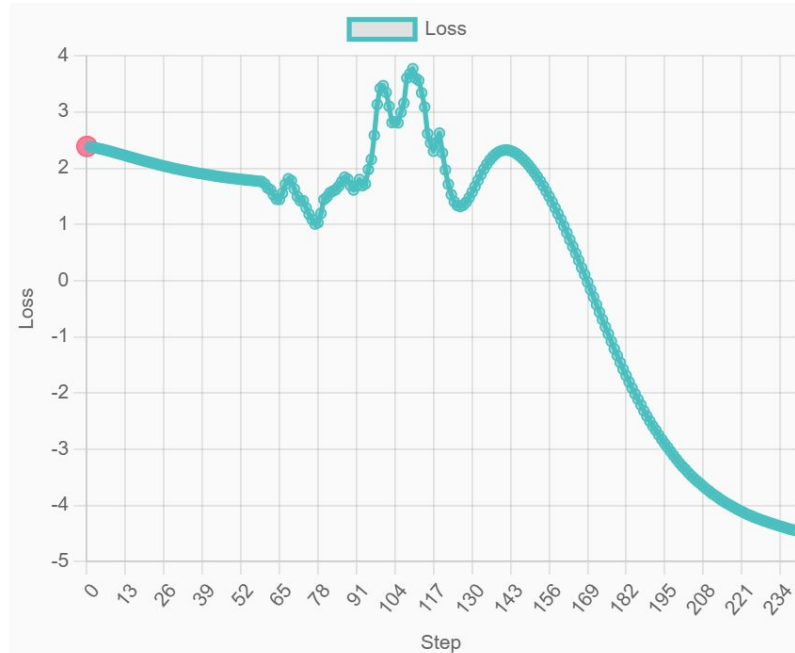
3D Loss Landscape



Position: x: 2.00, z: 0.00

Loss: 2.3867

Loss Over Time

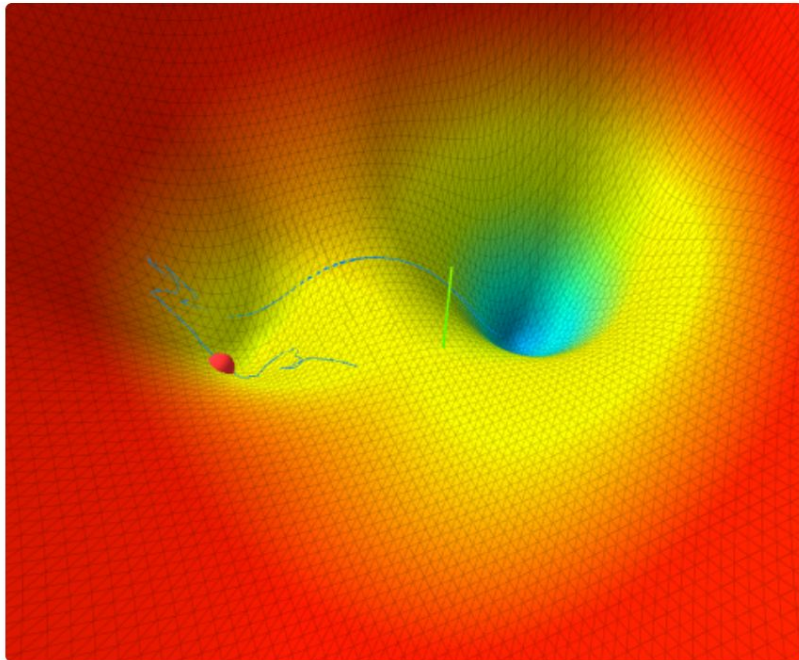


Gradient: 0.5341

Learning Rate: variable

Model Optimization Loss Landscape

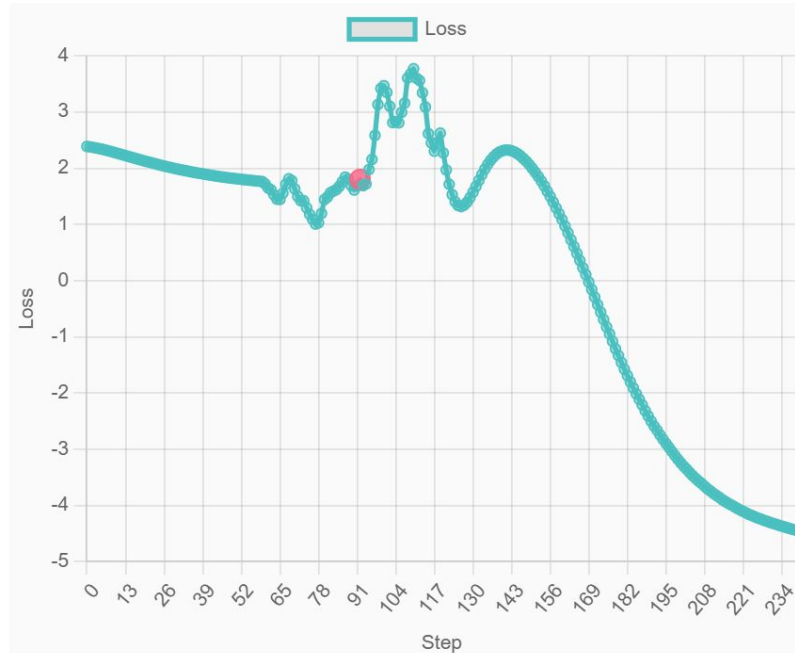
3D Loss Landscape



Position: x: 4.57, z: 1.40

Loss: 1.7998

Loss Over Time

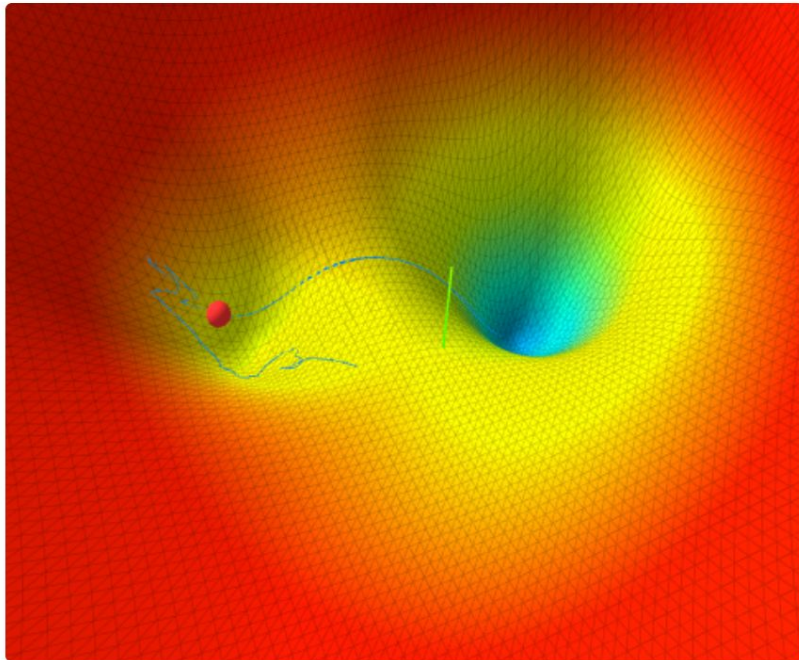


Gradient: 0.4543

Learning Rate: variable

Model Optimization Loss Landscape

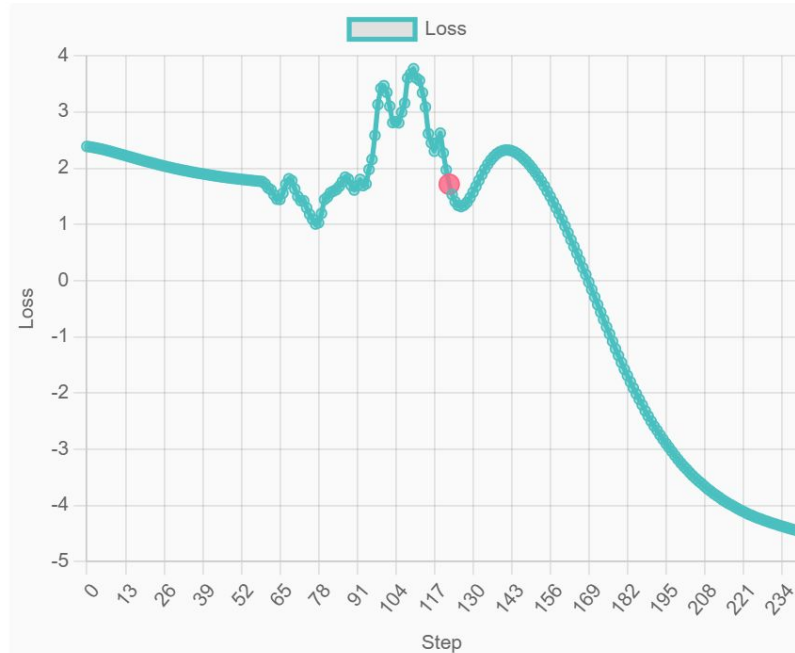
3D Loss Landscape



Position: x: 4.25, z: 2.70

Loss: 1.7139

Loss Over Time

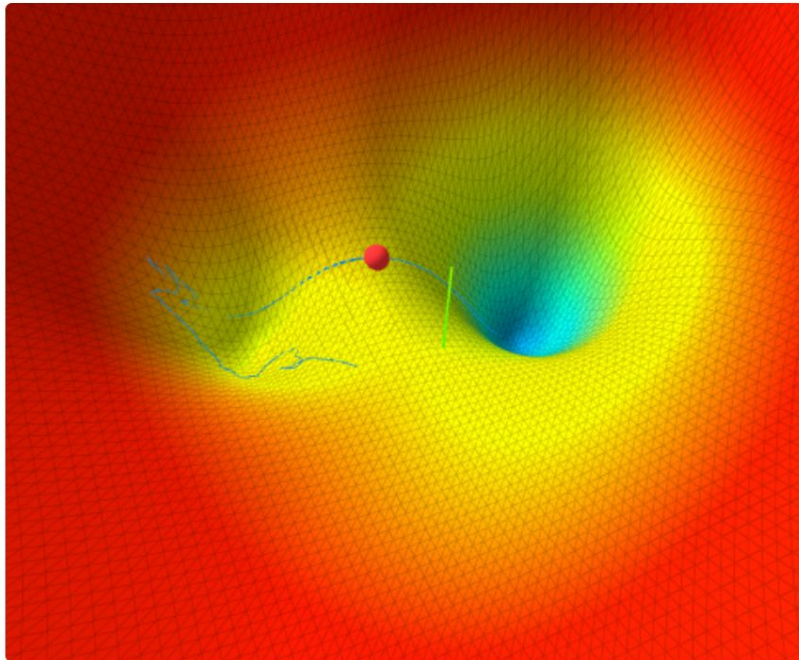


Gradient: 1.2710

Learning Rate: variable

Model Optimization Loss Landscape

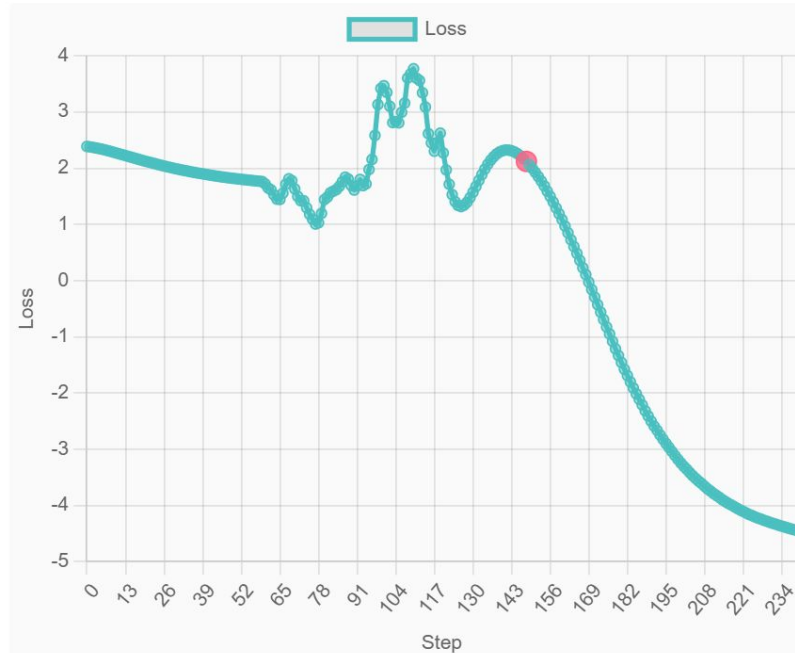
3D Loss Landscape



Position: x: 0.57, z: 2.38

Loss: 2.1195

Loss Over Time

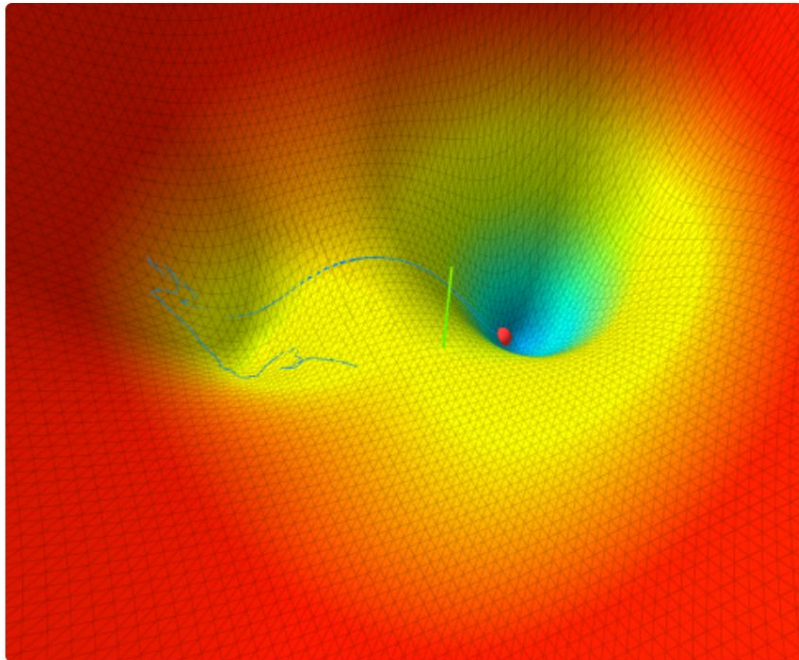


Gradient: 0.7033

Learning Rate: variable

Model Optimization Loss Landscape

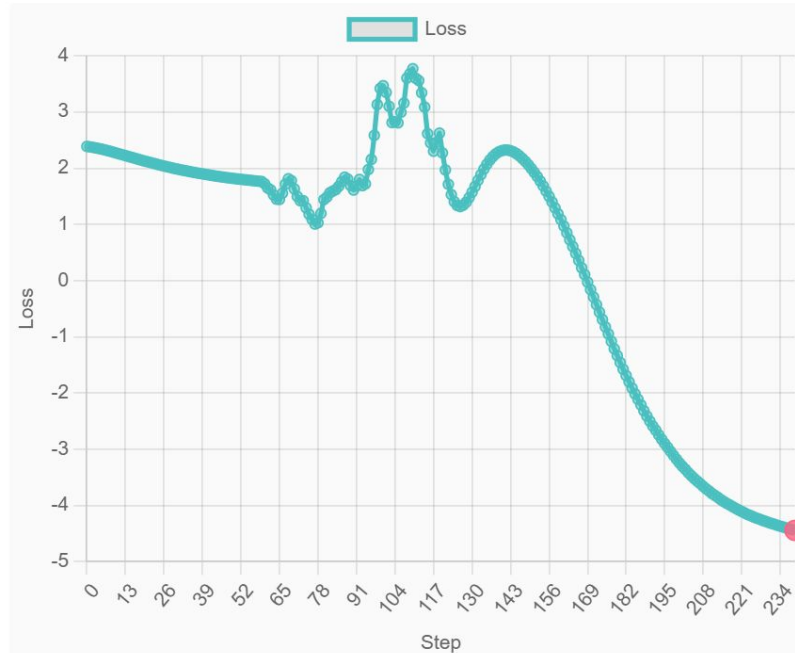
3D Loss Landscape



Position: x: -3.21, z: 2.06

Loss: -4.4442

Loss Over Time



Gradient: 0.1203

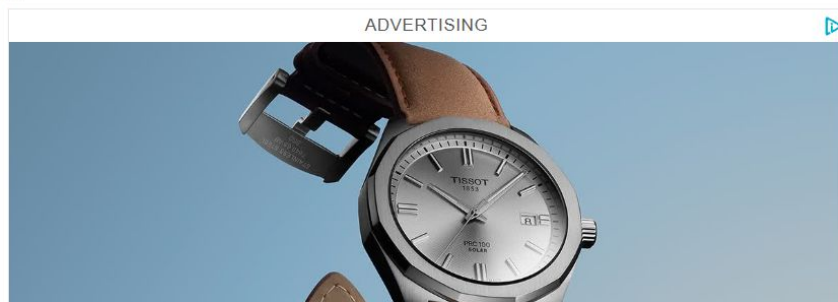
Learning Rate: variable

And so that's how I trained DEJAN-LM.
From scratch. Using masked language modeling.

 > Sports

MAAP Women has recently released new cycling bib shorts which are marketed to be all about performance.

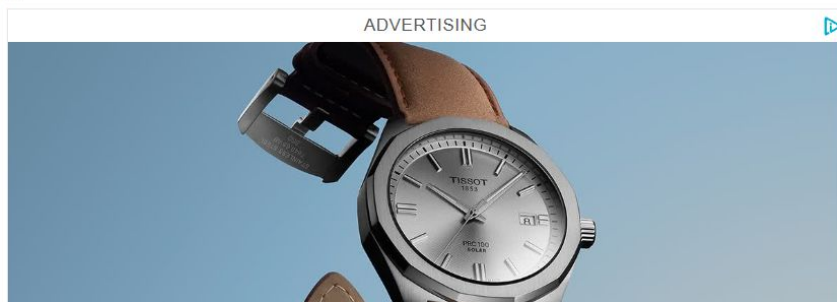
The Bib Evo Cargo stands out with its integrated cargo pockets, an innovation that was pioneered by MAAP Women. The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more storage without having to pack on more baggage. The ability to ride with just a jersey or tee opens up new possibilities for style and performance.



 > Sports

MAAP Women has recently released new cycling bib shorts which are marketed to be all about performance.

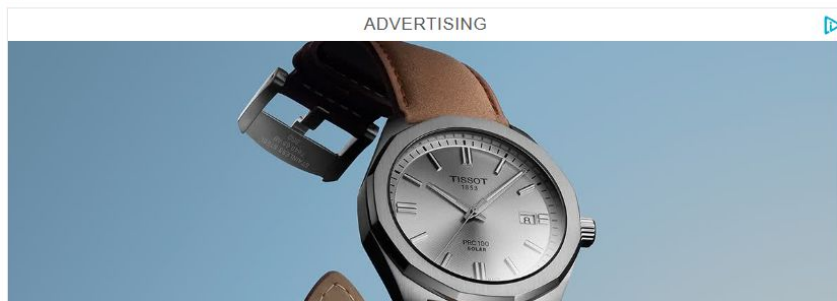
The Bib Evo Cargo stands out with its integrated cargo pockets, an innovation that was pioneered by MAAP Women. The cargo [redacted] are thoughtfully designed for [redacted] access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more [redacted] without having to pack on more [redacted]. The ability to ride with just a jersey or tee opens up new possibilities for style and performance.



 > Sports

MAAP Women has recently released new cycling bib shorts which are marketed to be all about performance.

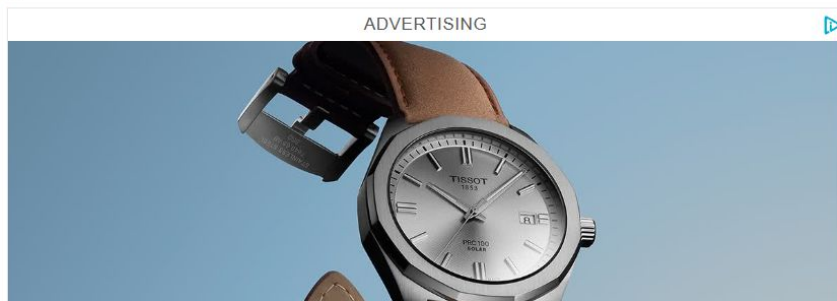
The Bib Evo Cargo stands out with its integrated cargo pockets, an innovation that was pioneered by MAAP Women. The cargo [REDACTED] are thoughtfully designed for [REDACTED] access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more [REDACTED] without having to pack on more [REDACTED]. The ability to ride with just a jersey or tee opens up new possibilities for style and performance.



 > Sports

MAAP Women has recently released new cycling bib shorts which are marketed to be all about performance.

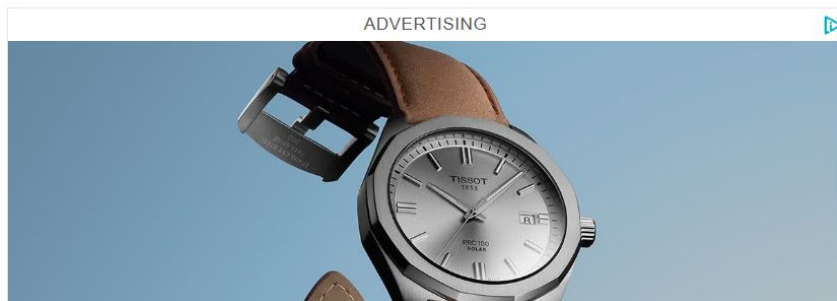
The Bib Evo Cargo stands out with its integrated cargo pockets, an innovation that was pioneered by MAAP Women. The cargo [REDACTED] are thoughtfully designed for [REDACTED] access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more [REDACTED] without having to pack on more [REDACTED]. The ability to ride with just a jersey or tee opens up new possibilities for style and performance.



[M](#) > Sports

MAAP Women has recently released new cycling bib shorts which are marketed to be all about performance.

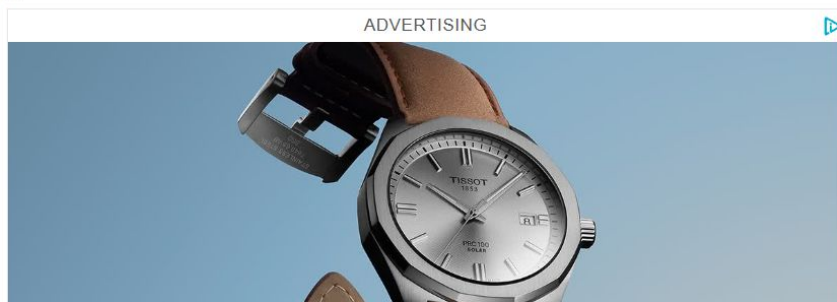
The Bib Evo Cargo stands out with its integrated cargo pockets, an innovation that was pioneered by MAAP Women. The cargo [REDACTED] are thoughtfully designed for [REDACTED] access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more [REDACTED] without having to pack on more [REDACTED]. The ability to ride with just a jersey or tee opens up new possibilities for style and performance.



 > Sports

MAAP Women has recently released new cycling bib shorts which are marketed to be all about performance.

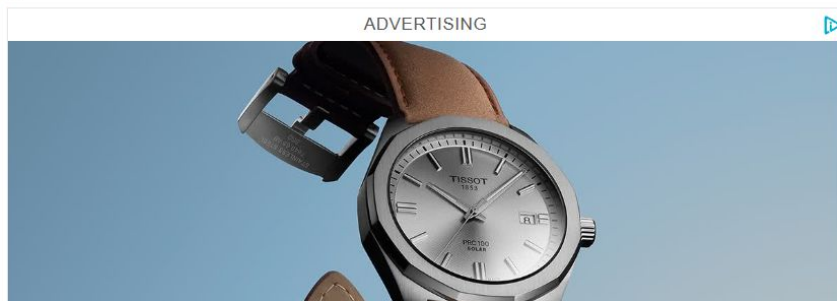
The Bib Evo Cargo stands out with its integrated cargo pockets, an innovation that was pioneered by MAAP Women. The cargo [redacted] are thoughtfully designed for [redacted] access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more [green] without having to pack on more [redacted]. The ability to ride with just a jersey or tee opens up new possibilities for style and performance.



 > Sports

MAAP Women has recently released new cycling bib shorts which are marketed to be all about performance.

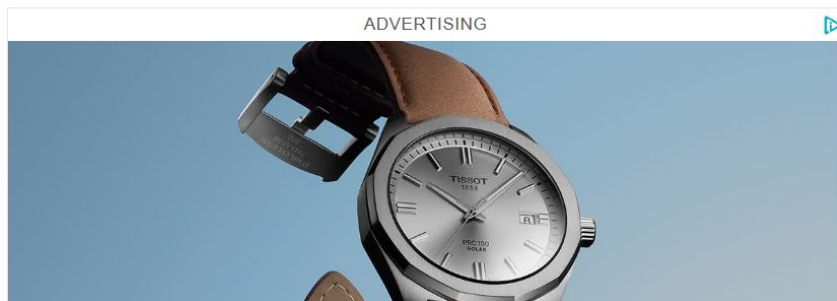
The Bib Evo Cargo stands out with its integrated cargo pockets, an innovation that was pioneered by MAAP Women. The cargo [redacted] are thoughtfully designed for [redacted] access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more [green] without having to pack on more [green]. The ability to ride with just a jersey or tee opens up new possibilities for style and performance.



 > Sports

MAAP Women has recently released new cycling bib shorts which are marketed to be all about performance.

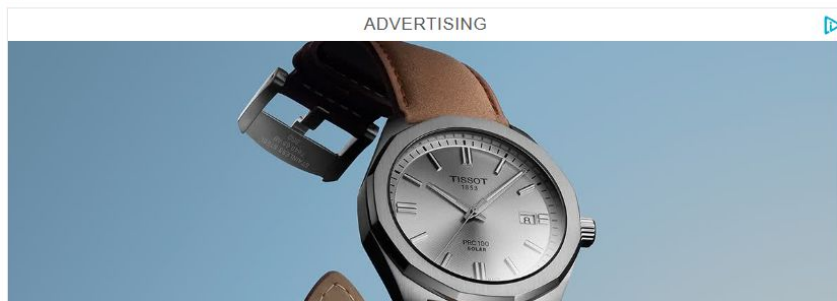
The Bib Evo Cargo stands out with its integrated cargo pockets, an innovation that was pioneered by MAAP Women. The cargo [REDACTED] are thoughtfully designed for [REDACTED] access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more [REDACTED] without having to pack on more [REDACTED]. The ability to ride with just a jersey or tee opens up new possibilities for style and performance.



 > Sports

MAAP Women has recently released new cycling bib shorts which are marketed to be all about performance.

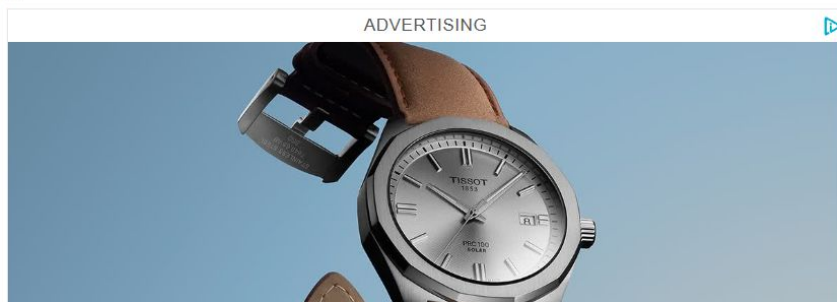
The Bib Evo Cargo stands out with its integrated cargo pockets, an innovation that was pioneered by MAAP Women. The cargo [redacted] are thoughtfully designed for [redacted] access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more [redacted] without having to pack on more [redacted]. The ability to ride with just a jersey or tee opens up new possibilities for style and performance.



 > Sports

MAAP Women has recently released new cycling bib shorts which are marketed to be all about performance.

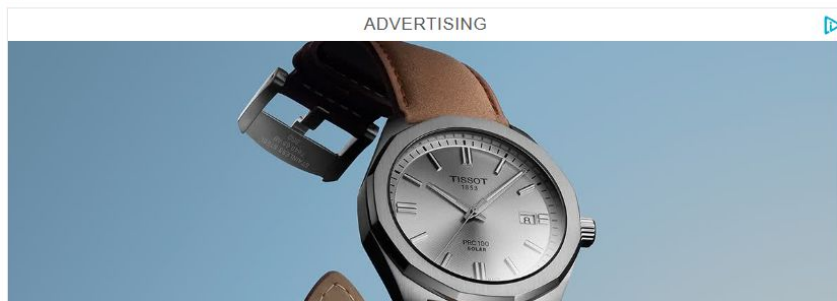
The Bib Evo Cargo stands out with its integrated cargo pockets, an innovation that was pioneered by MAAP Women. The cargo [redacted] are thoughtfully designed for [redacted] access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more [redacted] without having to pack on more [redacted]. The ability to ride with just a jersey or tee opens up new possibilities for style and performance.



 > Sports

MAAP Women has recently released new cycling bib shorts which are marketed to be all about performance.

The Bib Evo Cargo stands out with its integrated cargo pockets, an innovation that was pioneered by MAAP Women. The cargo [redacted] are thoughtfully designed for [redacted] access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more [redacted] without having to pack on more [redacted]. The ability to ride with just a jersey or tee opens up new possibilities for style and performance.



Overview Sweep: cbgow78j

Workspace

Search runs

Filters

Runs

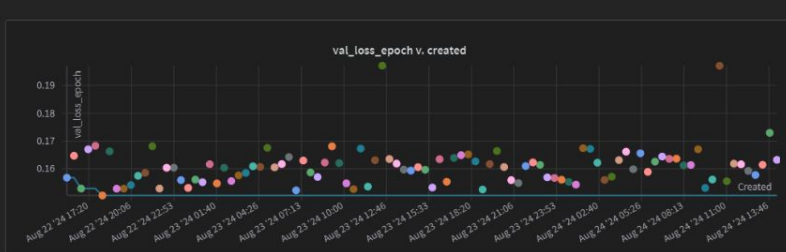
Agents

Controls

Logs

Name (100 visualized)

- youthful-sweep-45
- wild-sweep-92
- copper-sweep-37
- exalted-sweep-32
- dark-sweep-21
- sweet-sweep-42
- misunderstood-sweep-13
- bright-sweep-83
- lively-sweep-28
- vital-sweep-4
- clear-sweep-57
- golden-sweep-77
- fanciful-sweep-89
- glamorous-sweep-62
- autumn-sweep-97
- kind-sweep-36
- happy-sweep-95
- trim-sweep-71
- silvery-sweep-12
- olive-sweep-81



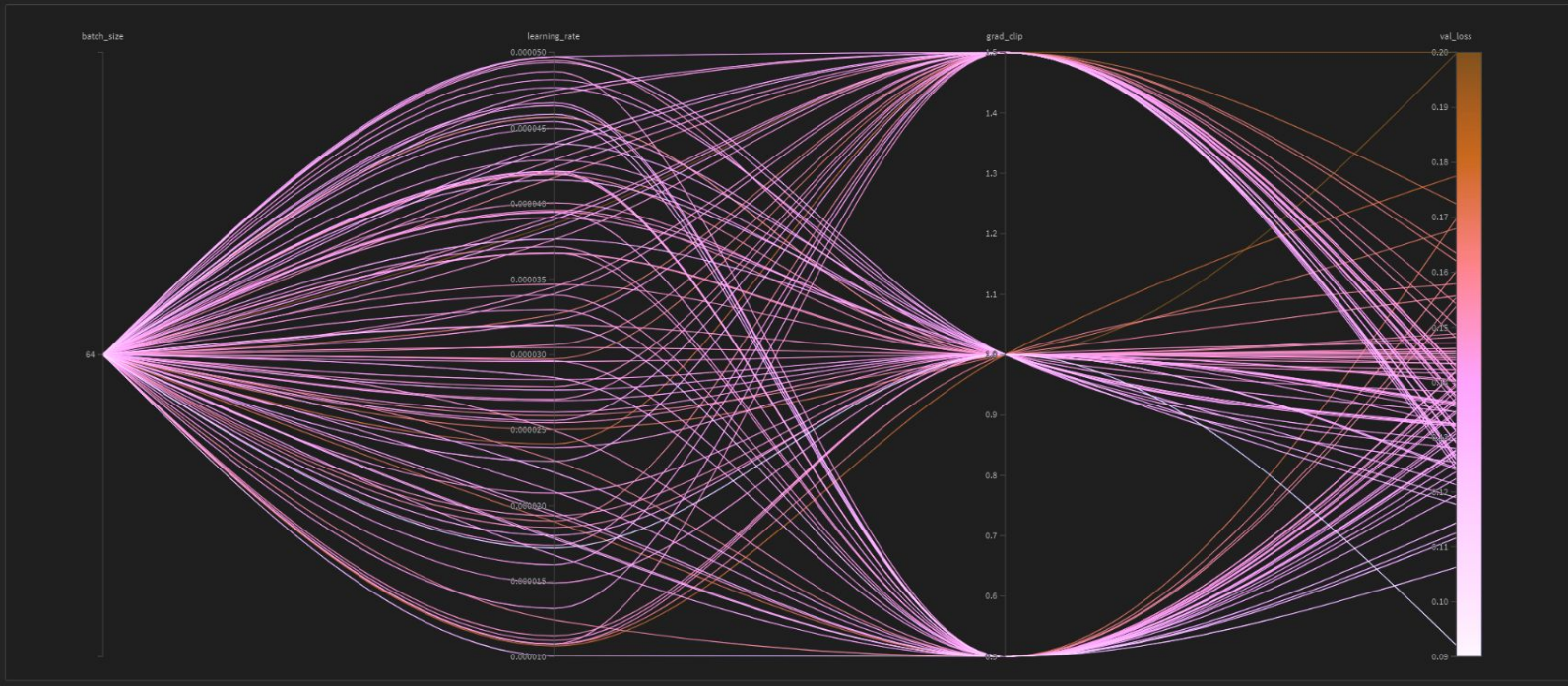
Parameter importance with respect to **val_loss_epoch**

Search

Parameters

1-7 of 7

Config parameter	Importance	Correlation
Runtime	High	Low
learning_rate	Medium	High
grad_clip	Low	High



DEJAN

Overview

Runs (17)

Search runs

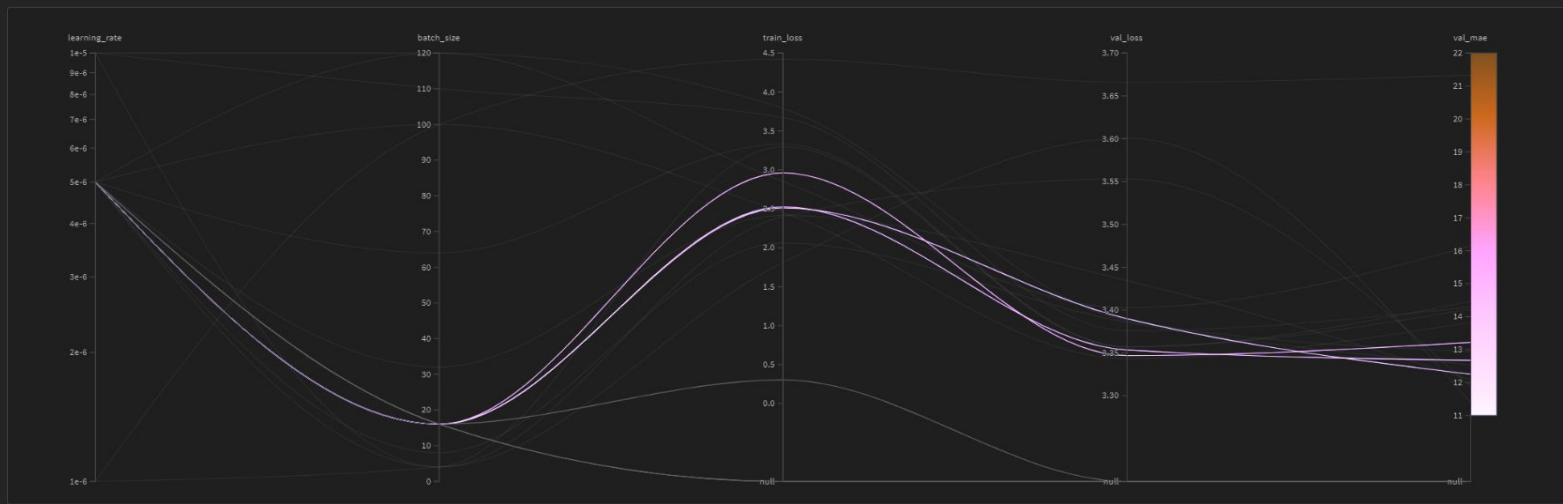
Workspace

Runs

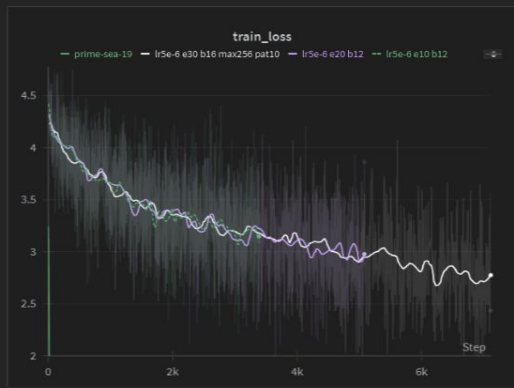
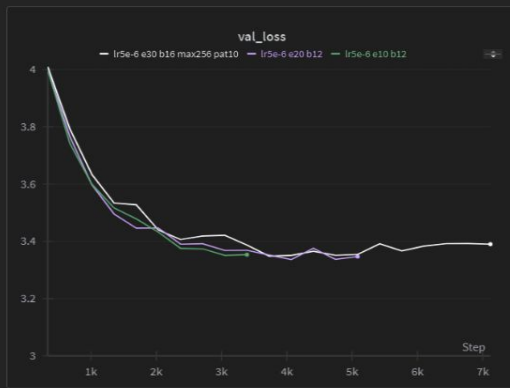
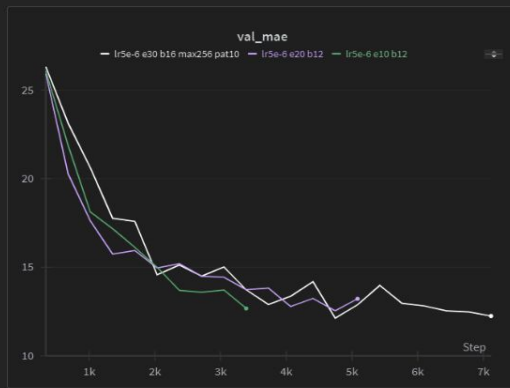
Name (6 visualized)

- prime-sea-19
- rural-glitter-18
- rare-plasma-17
- lr5e-6 e30 b16 max256 pat10
- jumping-firebrand-15
- lr1e-5 e30 b4 max256 pat10
- lr5e-6 e30 b4 max256 pat5
- lr1e-6 e30 b4 max256 pat5
- lr5e-6 e30 b8 max256 pat5
- lr1e-5 e30 b120 max256 pat5
- lr5e-6 e30 b120 max256
- lr1e-5 e30 b110 max256
- lr1e-6 e30 b100 max256
- lr5e-6 e30 b64 max256
- lr5e-6 e20 b64 max256
- lr5e-6 e20 b12
- lr5e-6 e10 b12

1-17 of 17



Charts 3

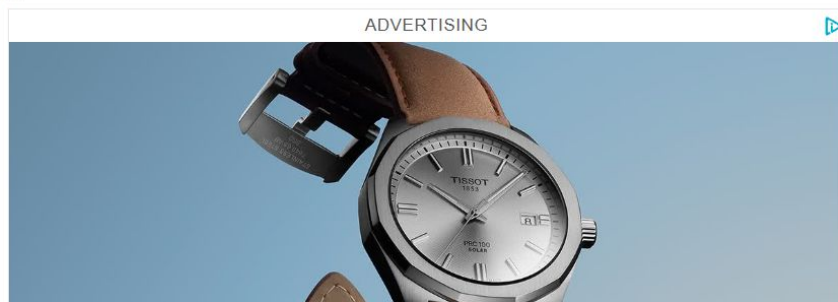


DEJAN

 > Sports

MAAP Women has recently released new cycling bib shorts which are marketed to be all about performance.

The Bib Evo Cargo stands out with its integrated cargo pockets, an innovation that was pioneered by MAAP Women. The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more storage without having to pack on more baggage. The ability to ride with just a jersey or tee opens up new possibilities for style and performance.



Input Sentence:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more storage without having to pack on more baggage.

Click on tokens to mask/unmask them:

<S> [MASK] cargo pockets [MASK] thoughtfully [MASK] for [MASK] access while [MASK]
its aerodynam ic performance and comfort , providing we arers the convenience
[MASK] having [MASK] storage [MASK] having [MASK] pack on more baggage .
</S>

Predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort , providing wearers the convenience of having more storage without having to pack on more baggage .

Input Sentence:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more storage without having to pack on more baggage.

Click on tokens to mask/unmask them:

Interactive token grid for masking/unmasking:

<S>	[MASK]	cargo	pockets	[MASK]	thoughtfully	[MASK]	for	[MASK]	access	while	[MASK]
its	aerodynam	ic	performance	and	comfort	,	providing	we	arers	the	convenience
[MASK]	having	[MASK]	storage	[MASK]	having	[MASK]	pack	on	more	baggage	.
</S>											

Three arrows point from the masked tokens in the first row to the reconstructed sentence below:

- Arrow 1: From the first [MASK] token to "are".
- Arrow 2: From the second [MASK] token to "designed".
- Arrow 3: From the third [MASK] token to "maintaining".

Predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing we arers the convenience of having more storage without having to pack on more baggage.

Input Sentence:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more storage without having to pack on more baggage.

Click on tokens to mask/unmask them:

<S> [MASK] cargo pockets [MASK] thoughtfully [MASK] for [MASK] access while [MASK]
its aerodynam ic performance and comfort , providing we arers the [MASK]
[MASK] having [MASK] storage [MASK] having [MASK] pack on more baggage .
</S>

Predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort , providing we arers the
option of having more storage without having to pack on more baggage .

Input Sentence:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more storage without having to pack on more baggage.

Click on tokens to mask/unmask them:

<S> [MASK] cargo pockets [MASK] thoughtfully [MASK] for [MASK] access while [MASK]
its aerodynam ic performance and [MASK] , providing we arers the [MASK]
[MASK] having [MASK] storage [MASK] having [MASK] pack on more baggage .
</S>

Predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and durability , providing we arers the option of having more storage without having to pack on more baggage .

Pay close attention...

...to what happens next.

DEJAN

Input Sentence:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more storage without having to pack on more baggage.

Click on tokens to mask/unmask them:

<S> [MASK] cargo pockets [MASK] thoughtfully [MASK] for [MASK] access while [MASK]
its aerodynam ic performance and [MASK] , providing we arers the [MASK]
[MASK] having [MASK] storage [MASK] having [MASK] pack on more baggage .
</S>

Predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and durability , providing wearers the option of having more storage without having to pack on more baggage .

Input Sentence:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more storage without having to pack on more baggage.

Click on tokens to mask/unmask them:

<S>	[MASK]	cargo	pockets	[MASK]	thoughtfully	[MASK]	for	[MASK]	access	[MASK]	[MASK]
its	aerodynam	ic	performance	and	[MASK]	,	providing	we	arers	the	[MASK]
[MASK]	having	[MASK]	storage	[MASK]	having	[MASK]	pack	on	more	baggage	.
</S>											

Predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for providing access to for its aerodynamic performance and durability , providing wearers the option of having more storage without having to pack on more baggage .

Did you catch that?

Input Sentence:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more storage without having to pack on more baggage.

Click on tokens to mask/unmask them:

<S> [MASK] cargo pockets [MASK] thoughtfully [MASK] for [MASK] access while [MASK]
its aerodynam ic performance and [MASK] , providing we arers the [MASK]
[MASK] having [MASK] storage [MASK] having [MASK] pack on more baggage .
</S>

Predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and durability , providing wearers the option of having more storage without having to pack on more baggage .

Input Sentence:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more storage without having to pack on more baggage.

Click on tokens to mask/unmask them:

Interface for masking/unmasking tokens in the input sentence. The tokens are displayed in a grid, and the word "while" is highlighted with a black border.

<s>	[MASK]	cargo	pockets	[MASK]	thoughtfully	[MASK]	for	[MASK]	access	while	[MASK]
its	aerodynam	ic	performance	and	[MASK]	,	providing	we	arers	the	[MASK]
[MASK]	having	[MASK]	storage	[MASK]	having	[MASK]	pack	on	more	baggage	.
</s>											

Predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and durability, providing wearers the option of having more storage without having to pack on more baggage.

Input Sentence:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more storage without having to pack on more baggage.

Click on tokens to mask/unmask them:

Interface for masking/unmasking tokens in the input sentence. The tokens are displayed in a grid, with some tokens masked as [MASK]. The token "while" is highlighted with a black border, indicating it is the current selection.

<s>	[MASK]	cargo	pockets	[MASK]	thoughtfully	[MASK]	for	[MASK]	access	while	[MASK]
its	aerodynam	ic	performance	and	[MASK]	,	providing	we	arers	the	[MASK]
[MASK]	having	[MASK]	storage	[MASK]	having	[MASK]	pack	on	more	baggage	.
</s>											

Predictions:

Reconstructed sentence with predictions:

Reconstructed sentence with predictions. The sentence is displayed with various tokens highlighted in different colors (green, blue, red) to indicate predictions. Arrows point from the "while" token in the input sentence to the "while" token in the reconstructed sentence, and from the "easy" token in the input sentence to the "easy" token in the reconstructed sentence.

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and durability, providing we arers the option of having more storage without having to pack on more baggage.

Input Sentence:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more storage without having to pack on more baggage.

Click on tokens to mask/unmask them:

Interface for masking/unmasking tokens in the input sentence. The tokens are displayed in a grid, and the "[MASK]" token is highlighted with a red box.

<S>	[MASK]	cargo	pockets	[MASK]	thoughtfully	[MASK]	for	[MASK]	access	[MASK]	
its	aerodynam	ic	performance	and	[MASK]	,	providing	we	arers	the	[MASK]
[MASK]	having	[MASK]	storage	[MASK]	having	[MASK]	pack	on	more	baggage	.
</S>											

Predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and durability, providing wearers the option of having more storage without having to pack on more baggage.

Input Sentence:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more storage without having to pack on more baggage.

Click on tokens to mask/unmask them:

Interface for masking/unmasking tokens in the input sentence. The tokens are displayed in a grid, with some tokens masked as [MASK]. The token "[MASK]" at the end of the first row is highlighted with a red border, indicating it is the current token being interacted with.

<s>	[MASK]	cargo	pockets	[MASK]	thoughtfully	[MASK]	for	[MASK]	access	[MASK]	
its	aerodynam	ic	performance	and	[MASK]	,	providing	we	arers	the	[MASK]
[MASK]	having	[MASK]	storage	[MASK]	having	[MASK]	pack	on	more	baggage	.
</s>											

Predictions:

Reconstructed sentence with predictions:

Reconstructed sentence with predictions. The original sentence is shown with some words highlighted in green. The predicted words are shown in boxes: "?", "to", and "???", which correspond to the masked tokens in the input sentence. A curved arrow points from the highlighted word "to" in the reconstructed sentence to the highlighted "[MASK]" token in the input sentence.

The cargo pockets are thoughtfully designed for ? access to ??? its aerodynamic performance and durability, providing wearers the option of having more storage without having to pack on more baggage.

Input Sentence:

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and comfort, providing wearers the convenience of having more storage without having to pack on more baggage.

Click on tokens to mask/unmask them:

Interactive token grid for masking/unmasking:

<s>	[MASK]	cargo	pockets	[MASK]	thoughtfully	[MASK]	for	[MASK]	access	[MASK]	
its	aerodynam	ic	performance	and	[MASK]	,	providing	we	arers	the	[MASK]
[MASK]	having	[MASK]	storage	[MASK]	having	[MASK]	pack	on	more	baggage	.
</s>											

Predictions:

Reconstructed sentence with predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for providing access to for its aerodynamic performance and durability, providing we arers the option of having more storage without having to pack on more baggage.

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and durability, providing wearers the option of having more storage without having to pack on more baggage.

The cargo pockets are thoughtfully designed for providing access to for its aerodynamic performance and durability, providing wearers the option of having more storage without having to pack on more baggage.

← Bidirectional →

The cargo pockets are thoughtfully designed for easy access while maintaining its aerodynamic performance and durability, providing wearers the option of having more storage without having to pack on more baggage.

The cargo pockets are thoughtfully designed for providing access to for its aerodynamic performance and durability, providing wearers the option of having more storage without having to pack on more baggage.

Encoder

[976, 25950, 42061, 553, 169783, 6884, 395, 4224, 3158, 2049, 26513, 1617, 198179, 6198, 326, 42008, 11, 9072, 11599, 409, 290, 5317, 328, 4566, 945, 7928, 2935, 4566, 316, 5356, 402, 945, 94710, 13]

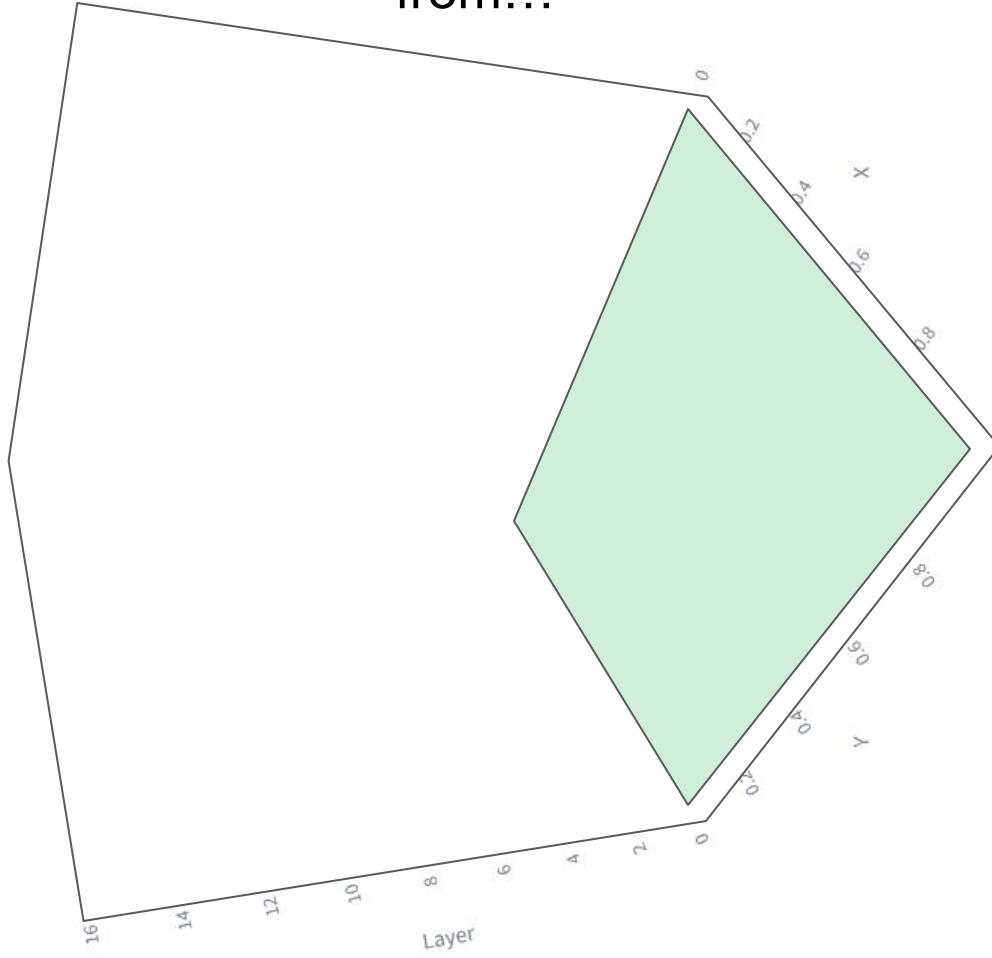
[976, 25950, 42061, 553, 169783, 6884, 395, 9072, 3158, 316, 395, 1617, 198179, 6198, 326, 42008, 11, 9072, 11599, 409, 290, 5317, 328, 4566, 945, 7928, 2935, 4566, 316, 5356, 402, 945, 94710, 13]

Representations

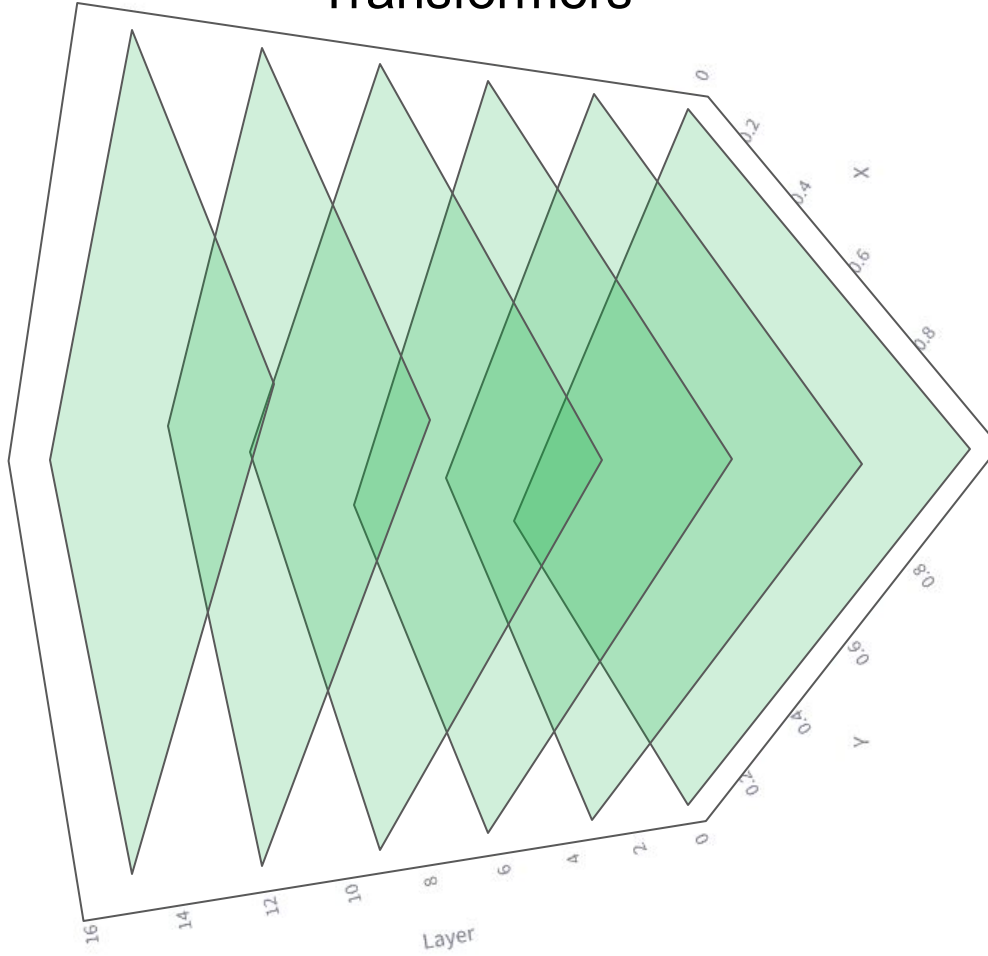
[0.1328, -0.9844, 1.5625, -0.4375, 0.0000, 3.1406, -2.1875, 0.7031,
-1.3281, 2.7188, 4.3750, -3.6250, 1.2500, -5.8125, 0.5469, 6.3125,
-0.2344, 1.8750, -1.6719, 2.3125, 0.3906, -0.7812, -2.4062, 3.4688,
0.2734, 4.2500, -0.0938, -3.1406, 1.1562, -4.0000, 0.8125, -6.5000,
5.9375, 0.4688, -0.3594, 1.6719, -1.8750, 2.9688, 3.7812, -2.9688,
-1.0156, 0.1172, -3.8750, 2.5000, -2.7500, 1.3906, 0.8594, 5.6250,
-4.1250, -0.6250, 3.0469, 6.5000, -0.1875, 0.1719, -0.4688, -3.2188,
4.1875, 2.2031, -2.2812, -1.0938, 5.3125, 3.3125, -5.6250, 0.9375,
-0.0781, -4.6250, 1.3125, 4.6250, 0.6562, -2.6406, 1.4844, 3.9844,
-3.5312, -6.3125, 0.0469, 2.6250, -0.7031, 1.7344, -2.0625, 2.8594,
5.0625, -3.3125, -0.5156, 1.7969, 3.2500, -4.2500, 2.4375, 0.3594,
-1.7656, 0.4062, 4.8125, -5.1250, -3.7188, 0.2188, -2.4844, 3.9062,
6.1250, -0.8906, 2.1406, -6.1250]

[-1.4375, 0.9844, -0.0781, 3.3125, -2.5938, 1.1406, -3.7500, 5.2500,
0.5469, -6.3125, 2.7188, 0.0781, -1.8125, 4.1250, -0.9688, 2.1562,
-3.3750, 0.7344, 1.6719, -4.5000, 6.5000, -2.9844, 3.8750, -0.3281,
1.3438, -5.4375, 0.0000, 0.4844, -2.1719, 3.2188, 0.2656, -1.1250,
5.7500, -6.5000, 0.8906, -3.0469, 1.0156, 4.8125, -2.3125, 3.5781,
-0.6250, 2.0000, -5.6250, 0.4062, 4.0000, -1.9531, 1.4062, 3.0312,
-0.2188, 5.1250, -4.1250, 0.3125, 2.9062, -6.0000, 1.7656, -0.1406,
-2.6250, 0.9844, -3.8750, 4.4062, 2.3281, -0.5156, -1.2500, 3.7344,
0.2188, 6.3125, -2.8125, 5.3750, -0.8750, 1.5781, -3.0469, 0.1406,
-1.5469, 4.6250, -2.4688, 2.5000, -6.1250, 0.6719, 3.4688, -5.8125,
1.8906, -0.4531, 2.2344, -4.7500, 3.9531, 0.0781, -2.3594, 1.0938,
-3.2812, 6.0000, -0.3438, 2.0469, -1.4219, 5.5625, -4.5938, 0.6250,
3.6250, -1.0781, -6.4375, 1.9844]

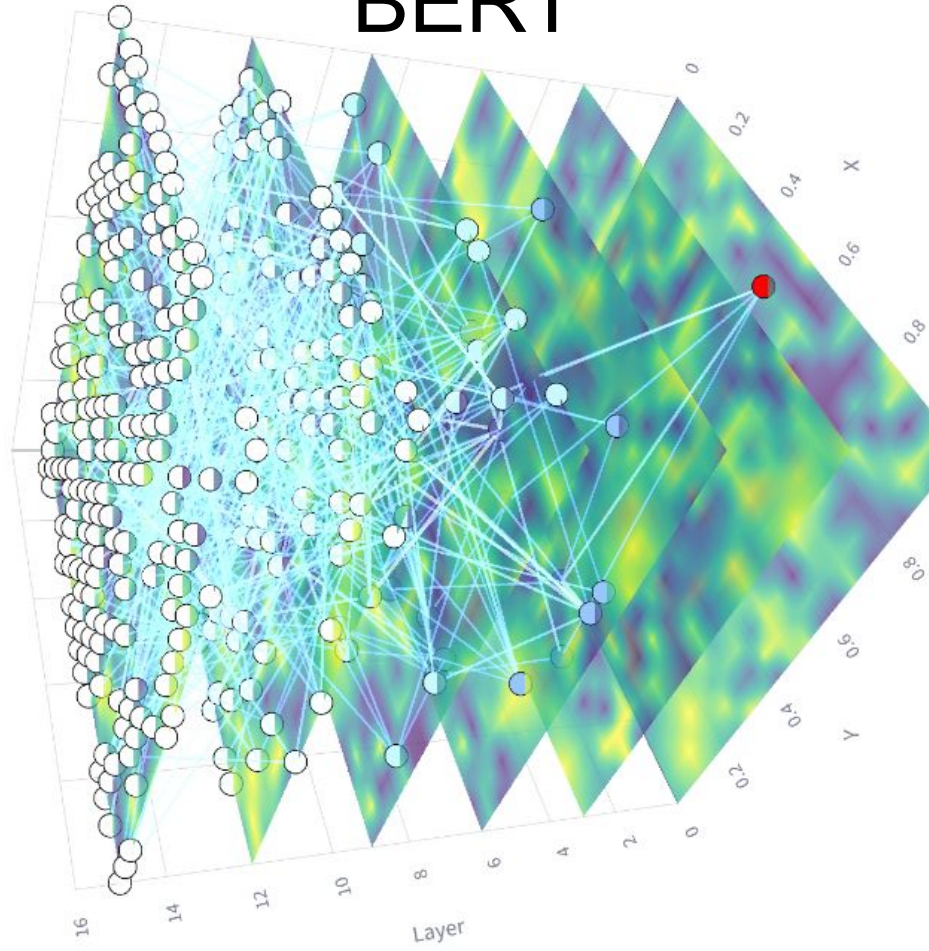
from...



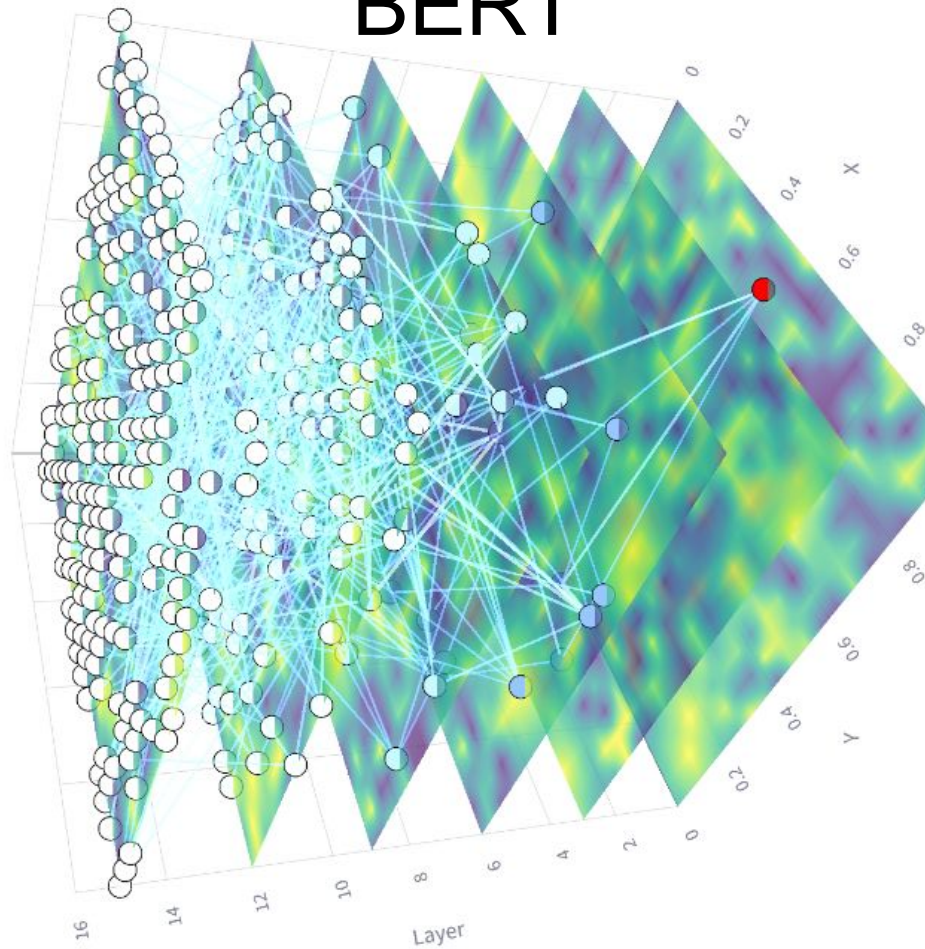
Transformers



BERT



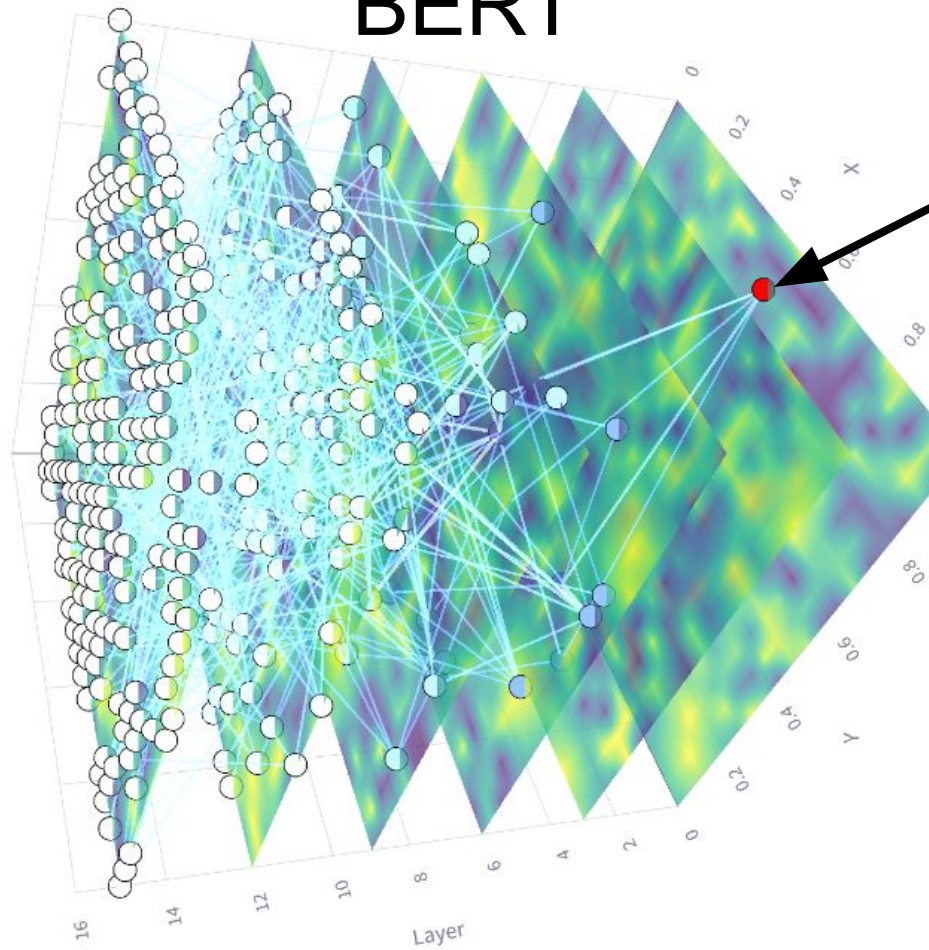
BERT



The cargo pockets are thoughtfully designed for easy access **while** maintaining its aerodynamic performance and durability, providing wearers the option of having more storage without having to pack on more baggage.

DEJAN

BERT

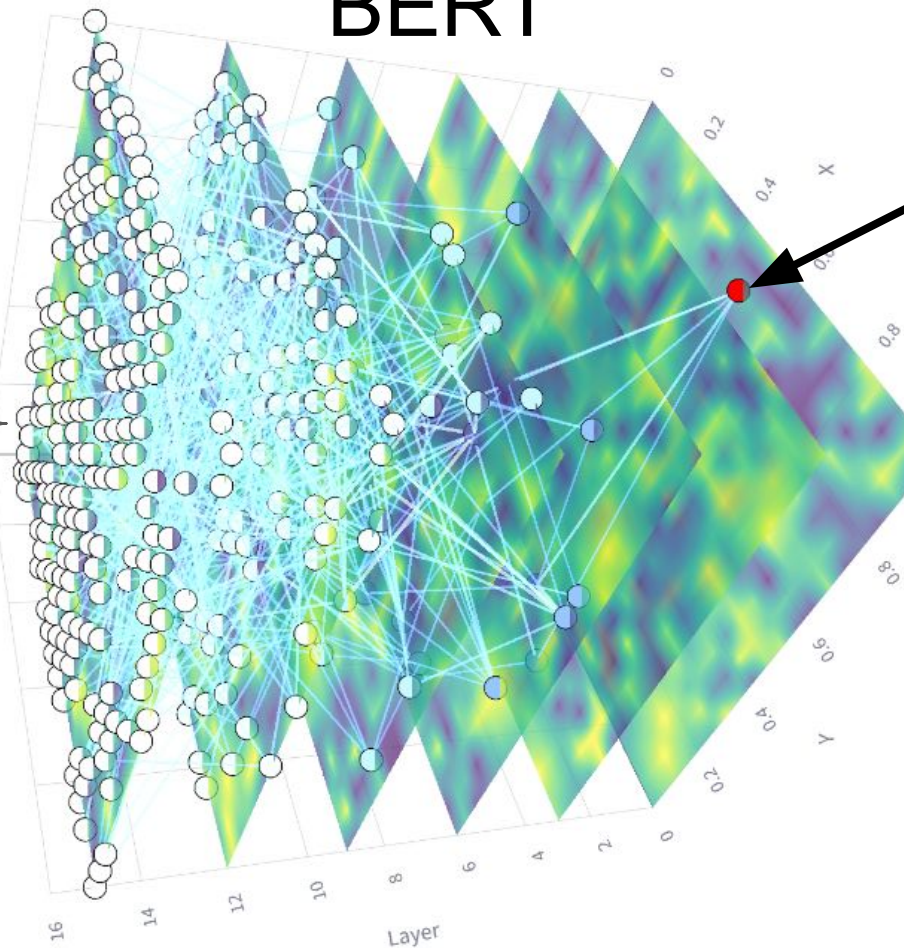


2049

DEJAN

BERT

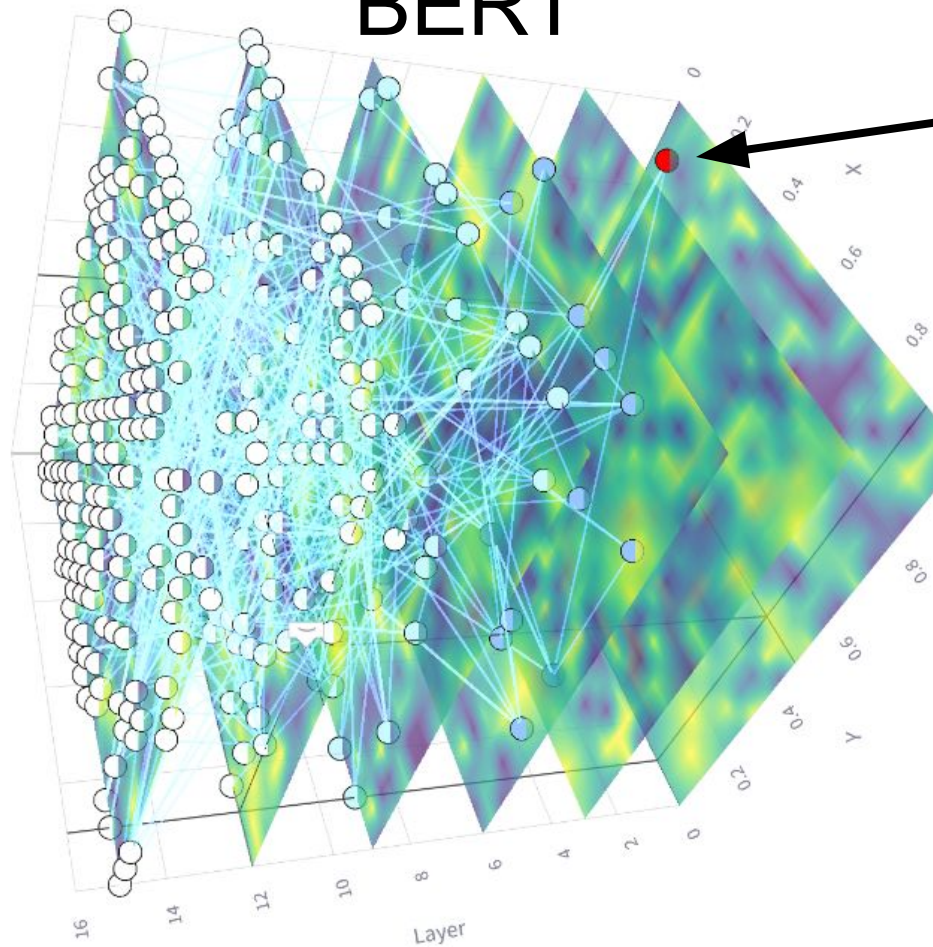
[0.1328, -0.9844, 1.5625, -0.4375,
0.0000, 3.1406, -2.1875, 0.7031,
-1.3281, 2.7188, 4.3750, -3.6250,
1.2500, -5.8125, 0.5469, 6.3125,
-0.2344, 1.8750, -1.6719, 2.3125,
0.3906, -0.7812, -2.4062, 3.4688,
0.2734, 4.2500, -0.0938, -3.1406,
1.1562, -4.0000, 0.8125, -6.5000,
5.9375, 0.4688, -0.3594, 1.6719,
-1.8750, 2.9688, 3.7812, -2.9688,
-1.0156, 0.1172, -3.8750, 2.5000,
-2.7500, 1.3906, 0.8594, 5.6250,
-4.1250, -0.6250, 3.0469, 6.5000,
-0.1875, 0.1719, -0.4688, -3.2188,
4.1875, 2.2031, -2.2812, -1.0938,
5.3125, 3.3125, -5.6250, 0.9375,
-0.0781, -4.6250, 1.3125, 4.6250,
0.6562, -2.6406, 1.4844, 3.9844,
-3.5312, -6.3125, 0.0469, 2.6250,
-0.7031, 1.7344, -2.0625, 2.8594,
5.0625, -3.3125, -0.5156, 1.7969,
3.2500, -4.2500, 2.4375, 0.3594,
-1.7656, 0.4062, 4.8125, -5.1250,
-3.7188, 0.2188, -2.4844, 3.9062,
6.1250, -0.8906, 2.1406, -6.1250]



2049

DEJAN

BERT

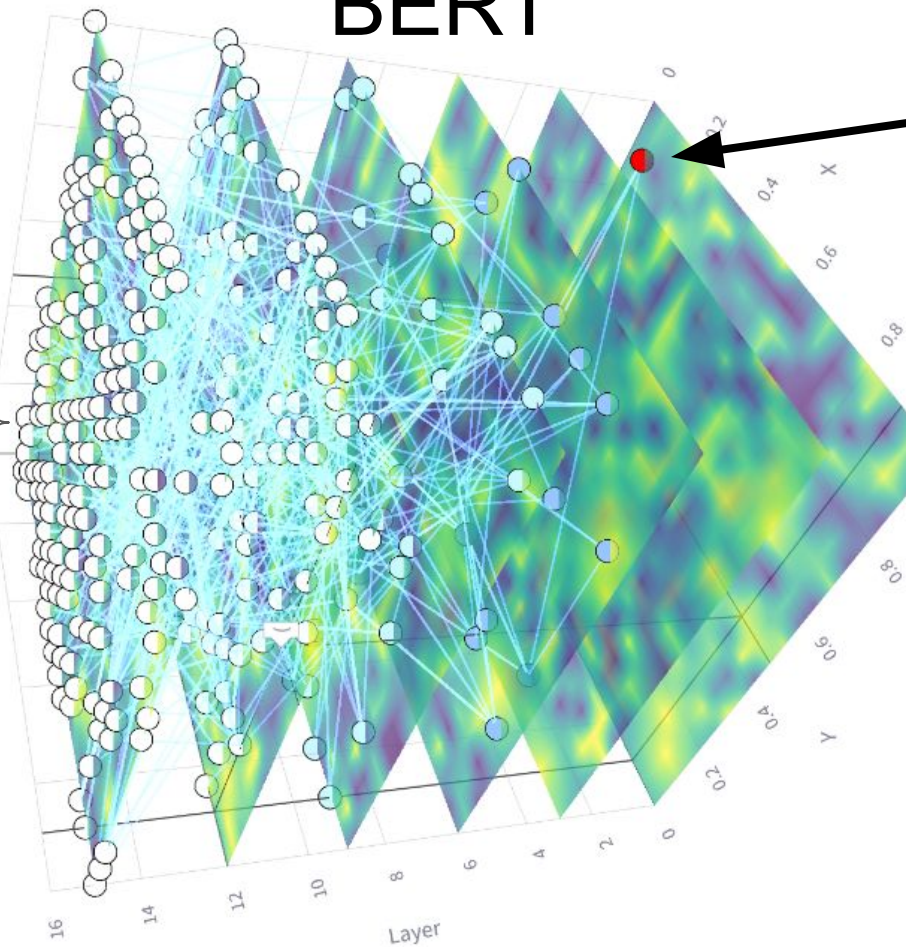


316

DEJAN

BERT

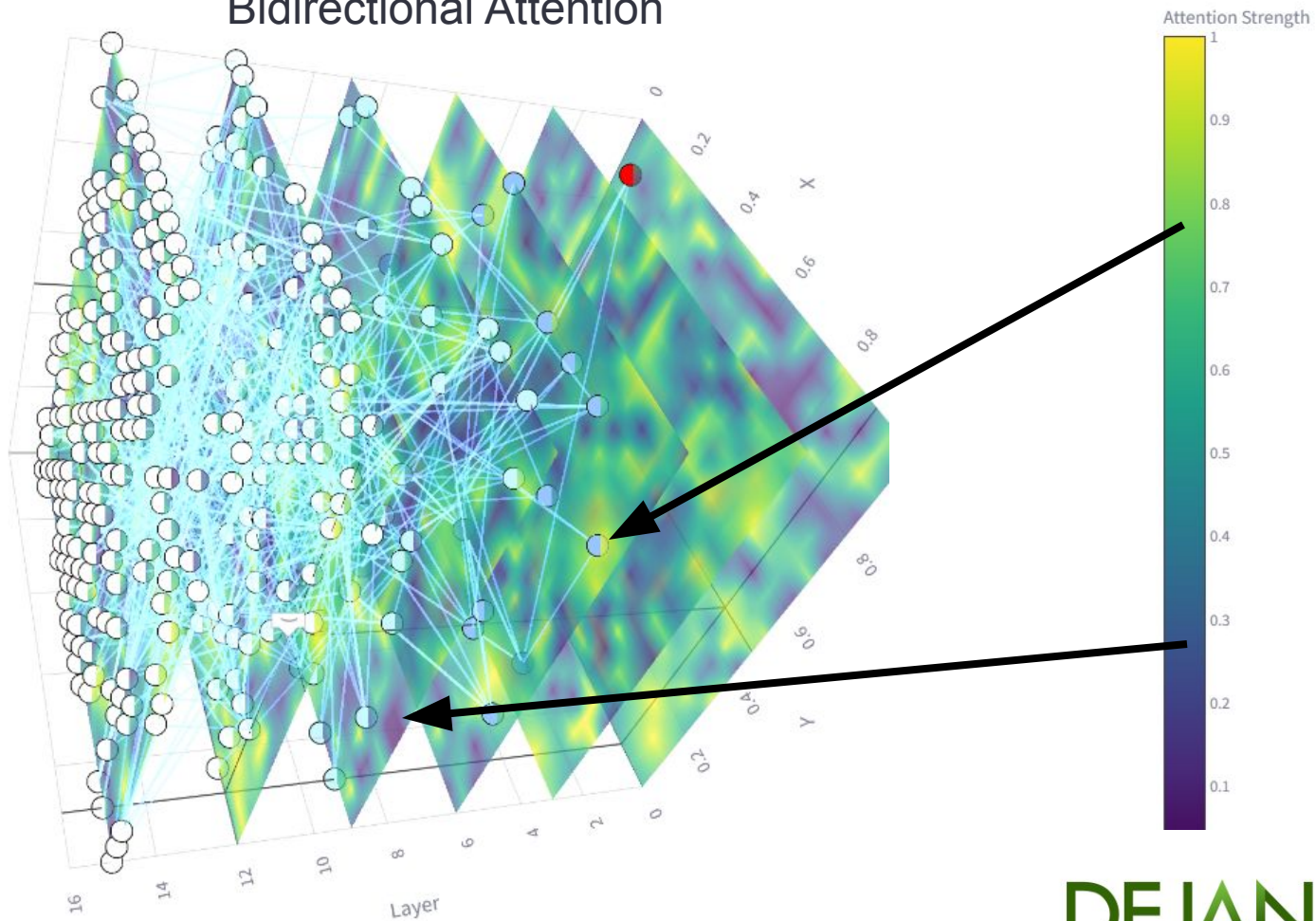
[-1.4375, 0.9844, -0.0781, 3.3125,
-2.5938, 1.1406, -3.7500, 5.2500,
0.5469, -6.3125, 2.7188, 0.0781,
-1.8125, 4.1250, -0.9688, 2.1562,
-3.3750, 0.7344, 1.6719, -4.5000,
6.5000, -2.9844, 3.8750, -0.3281,
1.3438, -5.4375, 0.0000, 0.4844,
-2.1719, 3.2188, 0.2656, -1.1250,
5.7500, -6.5000, 0.8906, -3.0469,
1.0156, 4.8125, -2.3125, 3.5781,
-0.6250, 2.0000, -5.6250, 0.4062,
4.0000, -1.9531, 1.4062, 3.0312,
-0.2188, 5.1250, -4.1250, 0.3125,
2.9062, -6.0000, 1.7656, -0.1406,
-2.6250, 0.9844, -3.8750, 4.4062,
2.3281, -0.5156, -1.2500, 3.7344,
0.2188, 6.3125, -2.8125, 5.3750,
-0.8750, 1.5781, -3.0469, 0.1406,
-1.5469, 4.6250, -2.4688, 2.5000,
-6.1250, 0.6719, 3.4688, -5.8125,
1.8906, -0.4531, 2.2344, -4.7500,
3.9531, 0.0781, -2.3594, 1.0938,
-3.2812, 6.0000, -0.3438, 2.0469,
-1.4219, 5.5625, -4.5938, 0.6250,
3.6250, -1.0781, -6.4375, 1.9844]



316

DEJAN

Bidirectional Attention

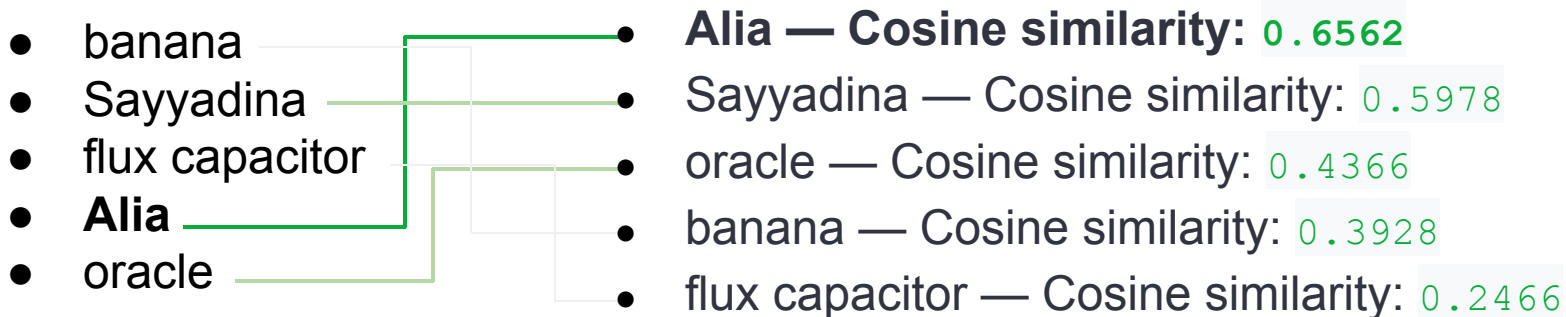


DEJAN

Nice to be able to do **math with text**.

Muad'Dib - Male + Female = ?

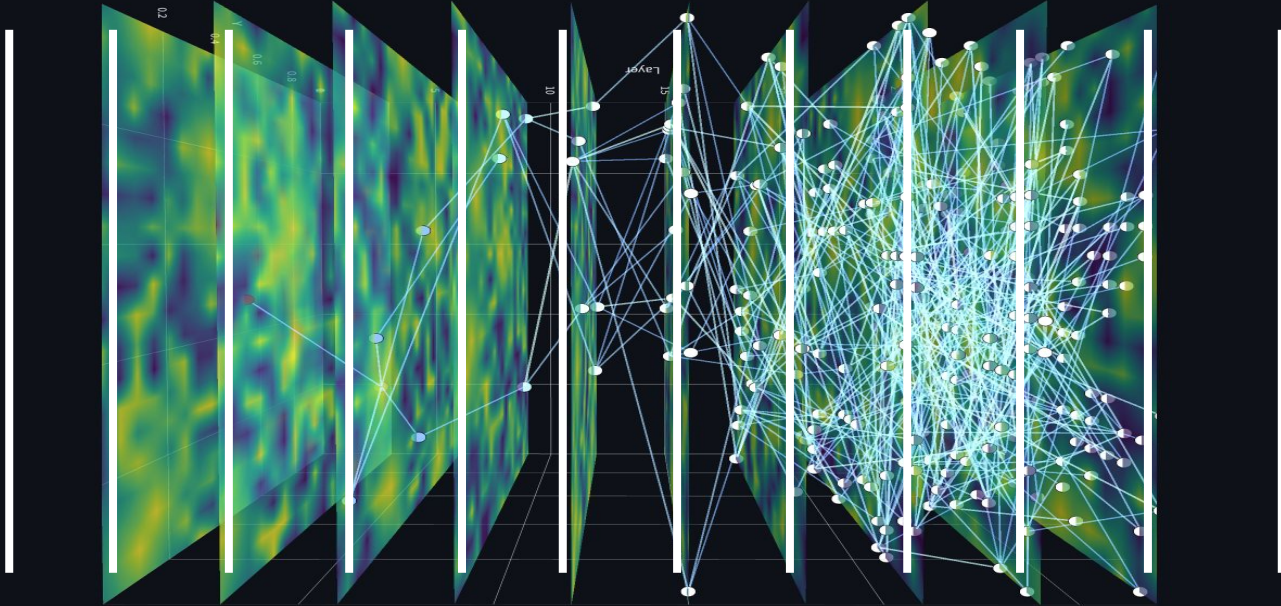
Muad'Dib - Male + Female



Transformer
Encoder
Bidirectional Attention

BERT

12



DEJAN

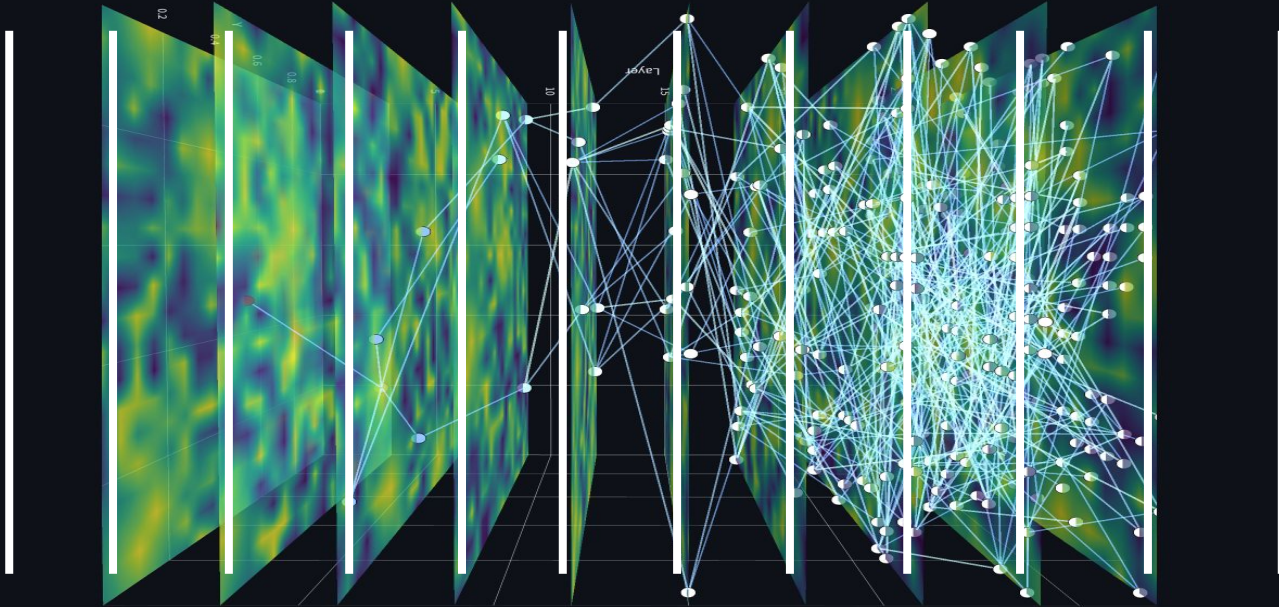
Transformer

Decoder

Causal Attention + Autoregressive Capability

GPT-2

12



DEJAN

GPT-3

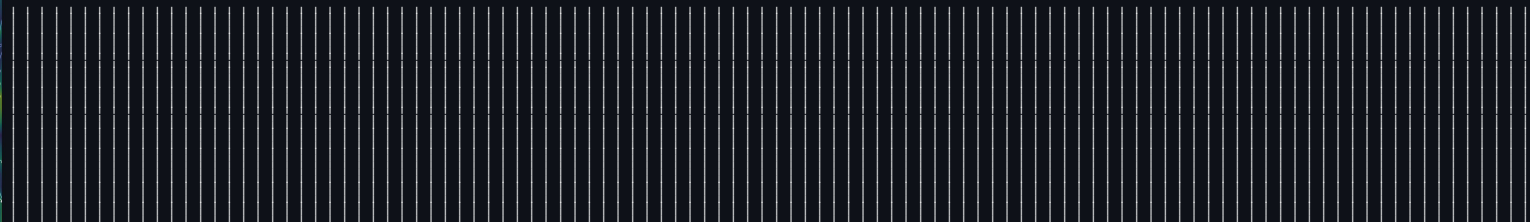
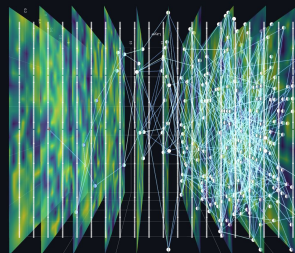
96



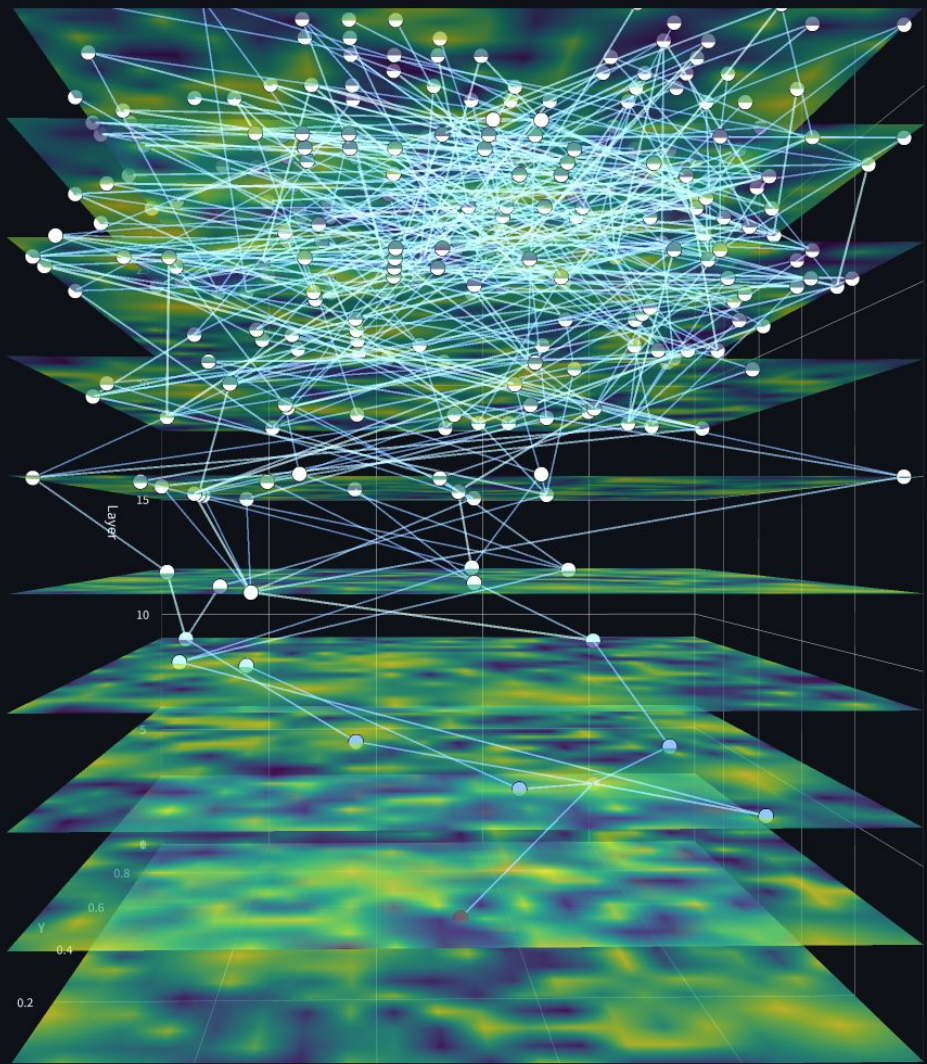
DEJAN

GPT-4

120+



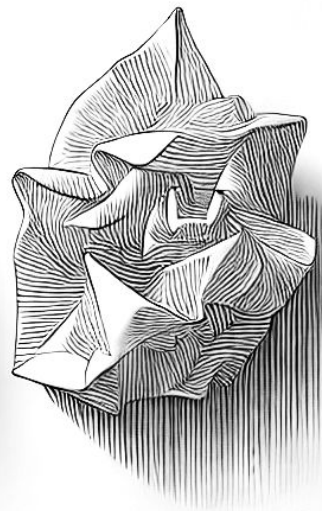
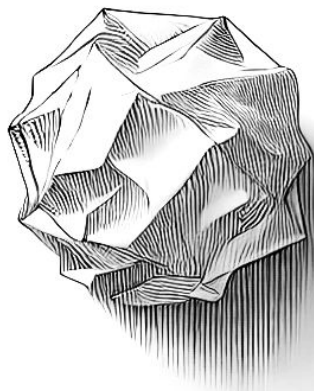
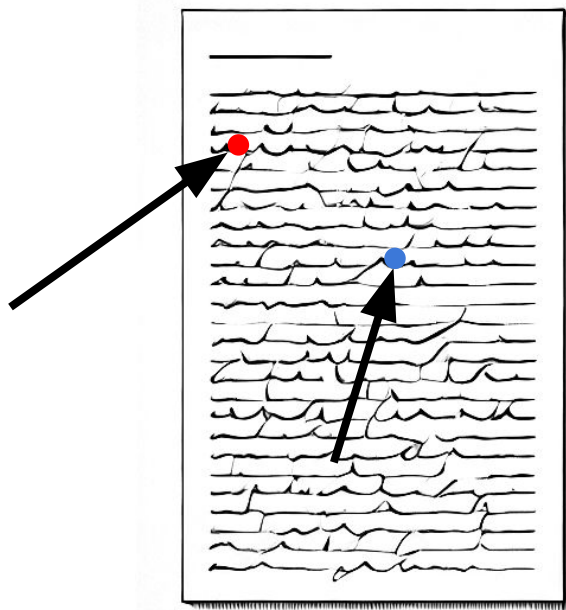
DEJAN



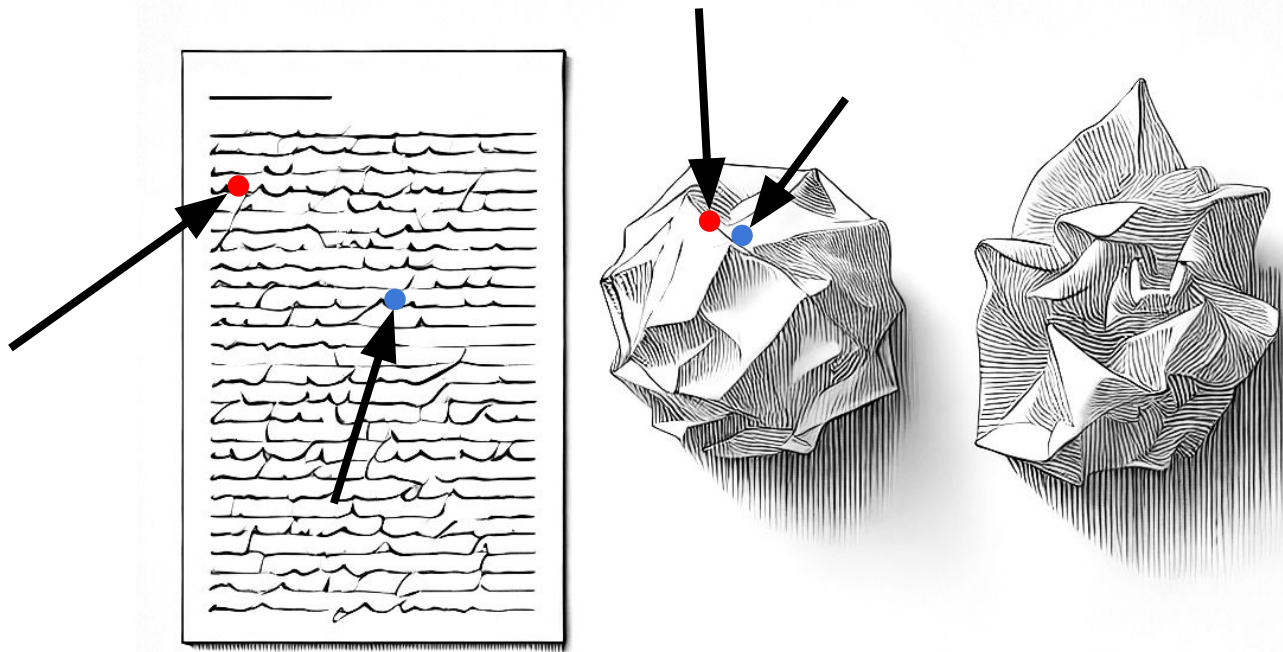
Transformer attention creates dynamic, context-dependent computational graphs where any token can influence any other **regardless of their distance in text** and simultaneously represent multiple relationship types.

Certain linguistic patterns trigger cascading activations through specialized neural circuits with early-layer patterns having compounding effects through the network.

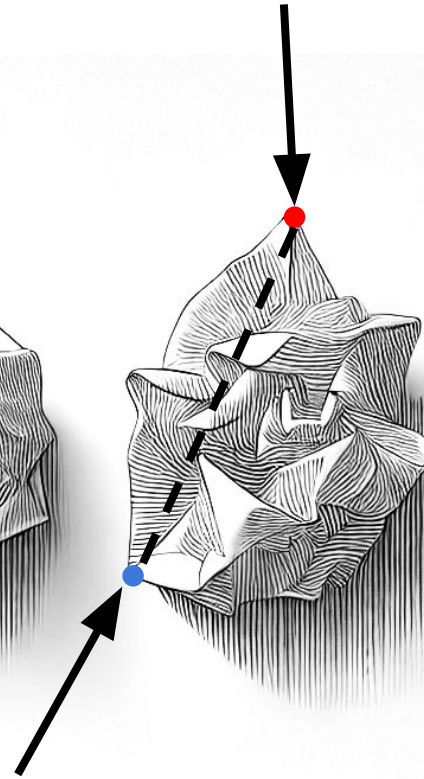
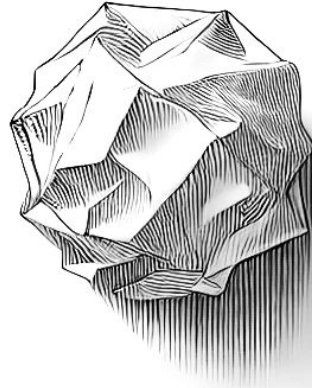
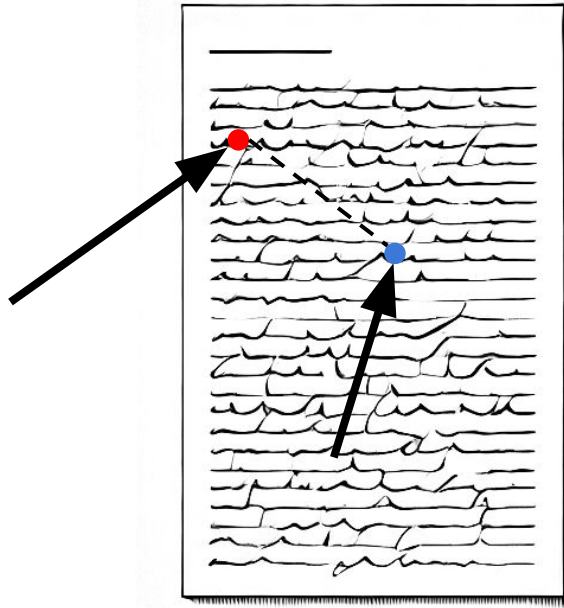
Analogy.



DEJAN



DEJAN



DEJAN

This is why LLMs can generate text using words that **don't appear close to each other** in training data.

Predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for providing access to for its aerodynamic performance and durability , providing we arers the option of having more storage without having to pack on more baggage .

Top predictions for each masked token:

Token The at position 1 - ☒ Original token was the top prediction

	Rank	Predicted Token	Probability
0	1	The	0.2995
1	2	These	0.1409
2	3	Its	0.1177
3	4	While	0.0509
4	5	But	0.0358

Predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for providing access to for its aerodynamic performance and durability , providing we arers the option of having more storage without having to pack on more baggage .

Top predictions for each masked token:

Token designed at position 6 -  Original token was the top prediction

	Rank	Predicted Token	Probability
0	1	designed	0.9549
1	2	intended	0.0075
2	3	meant	0.0069
3	4	tailored	0.0032
4	5	built	0.0028

Predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for providing access to for its aerodynamic performance and durability , providing wearers the option of having more storage without having to pack on more baggage .

Top predictions for each masked token:

Token designed at position 6 - ☒ Original token was the top prediction

	Rank	Predicted Token	Probability
0	1	designed	0.9549
1	2	intended	0.0075
2	3	meant	0.0069
3	4	tailored	0.0032
4	5	built	0.0028

Predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for providing access to for its aerodynamic performance and durability , providing we arers the option of having more storage without having to pack on more baggage .

Top predictions for each masked token:

Token easy at position 8 -  Original token was prediction #2

	Rank	Predicted Token	Probability
0	1	providing	0.1048
1	2	easy	0.0823
2	3	its	0.0595
3	4	quick	0.0488
4	5	extended	0.0306

Predictions:

Reconstructed sentence with predictions:

The cargo pockets are thoughtfully designed for providing access to for its aerodynamic performance and durability , providing we arers the option of having more storage without having to pack on more baggage .

Top predictions for each masked token:

Token convenience at position 23 -  Original token was prediction #4

	Rank	Predicted Token	Probability
0	1	option	0.1171
1	2	luxury	0.0768
2	3	flexibility	0.0763
3	4	convenience	0.0622
4	5	experience	0.0518

The butterfly effect.
One word can change everything.

Input Sentence:

The butterfly effect. One word can change everything.

Click on tokens to mask/unmask them:

<s> The butterf effect . One word can change everyth . </s>

Click on tokens above to mask them and see predictions.

Input Sentence:

The butterfly effect. One mask can change everything.

Click on tokens to mask/unmask them:

<s> The butterf effect . One mask can change everyth . </s>

Click on tokens above to mask them and see predictions.

Input Sentence:

The butterfly effect. One word can change everything.

Click on tokens to mask/unmask them:

<S> The butterfly effect . One [MASK] can change everyth . </S>

Predictions:

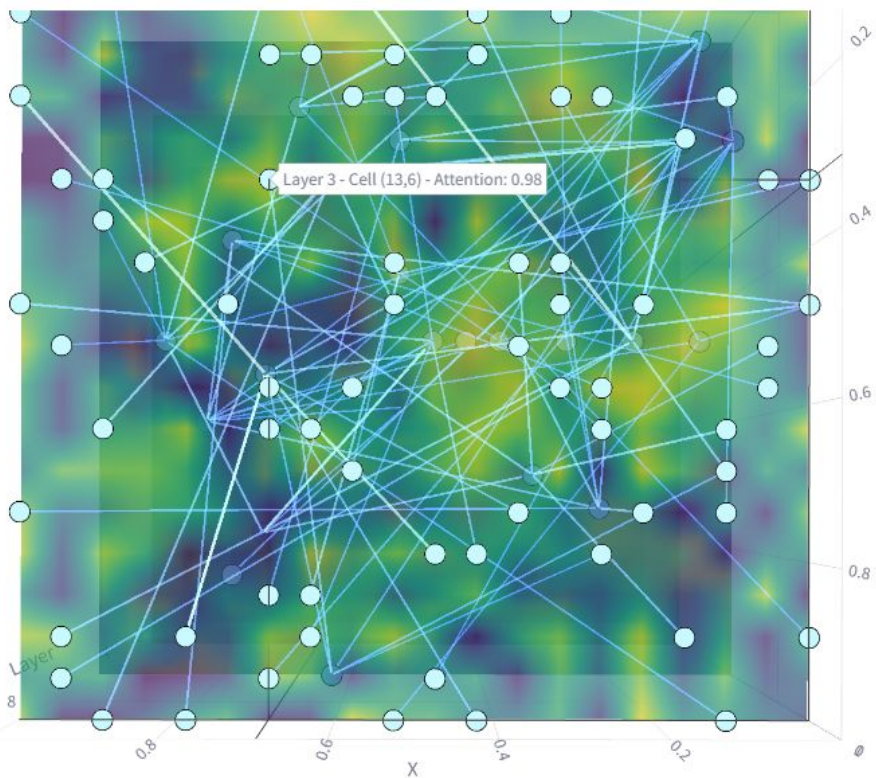
Reconstructed sentence with prediction:

The butterfly effect . One person can change everything .

Top predictions for each masked token:

Token word at position 6 - ❌ Original token not in top 5 predictions

	Rank	Predicted Token	Probability
0	1	person	0.0806
1	2	,	0.0634
2	3	that	0.0585
3	4	effect	0.0564
4	5	thing	0.0277



Strategic positioning within transformer attentional hotspots creates disproportionate impact on how information gets encoded and retrieved.

This creates optimisation pathways that traditional SEO completely misses.

In Practice

Settings

Brand Name:

Dejan Marketing

Generation Settings

Number of prompts to generate:

100 - +

Temperature: ?

1.00
0.10

Generate Prompts

Testing Settings

Model for testing: ?

gpt-4o

Test Mode: ?

- ☒ Limited (safer)
☐ All Prompts (costs more)
☐ Normalise

Number of prompts to test:

10 - +

Run Tests

Reverse Prompt Generator

Generate unique questions for brand mentions

This app generates questions that would lead to a specific brand as an answer. It uses OpenAI's API to create variations and stores them in a database.

Database Stats

	brand_name	prompt_count	test_count	success_count	overall_success_rate
		299	897	108	12
1	Ubank	10	0	None	0
2	Ubank Australia	10	10	0	0
3	Dejan Marketing	0	0	None	0

Generated Prompts Test Results Database Explorer

Generating prompt 15/100...

Generating 100 prompts for 'Dejan Marketing'

	prompt	attempt	is_unique
0	What is an Australian digital marketing agency known for helping businesses grow th	1	☒
1	What digital marketing agency specializes in SEO and has a strong reputation in Aust	2	☒
2	Which digital marketing agency is known for its expertise in SEO and is headquartere	3	☒
3	What is the name of the Australian-based SEO agency known for its innovative search	4	☒

DEJAN

Existing prompts for 'Dejan Marketing'

	prompt_text
76	What digital marketing agency is known for providing innovative SEO solutions and strategies for businesses in Australia?
77	Which Australian digital marketing agency is highly regarded for its innovative SEO strategies and has been recognized for its contributions to increasing online visibility for
78	Which digital agency is known for helping clients enhance their online presence through innovative strategies and creative solutions in Australia?
79	Which digital marketing agency specializes in SEO and is well-known for its innovative strategies and industry-leading techniques in Australia?
80	What digital marketing agency based in Australia is known for its expertise in SEO and content strategy?
81	What is a well-known marketing agency that specializes in SEO and digital marketing strategies in Australia?
82	What digital marketing agency is known for providing services such as SEO, PPC, and content strategy, particularly in Australia?
83	What is a top digital marketing agency based in Australia known for its expertise in SEO and content marketing strategies?
84	Which digital marketing agency is known for its expertise in SEO strategies and has gained a reputation in Australia for helping businesses enhance their online presence?
85	What digital marketing agency is renowned for its expertise in search engine optimization and innovative online strategies, specifically catering to businesses in Australia ar
86	What digital agency specializes in SEO services and content marketing strategies in Toronto?
87	Which agency is known for providing innovative digital marketing solutions and strategies in Australia, focusing on SEO and online growth?
88	What digital marketing agency specializes in SEO and has been recognized for its excellence in helping companies improve their online presence and search engine ranking

Settings

Brand Name:

Dejan Marketing

Generation Settings

Number of prompts to generate:

100 - +

Temperature: 1.00 ?

0.10 2.00

Generate Prompts

Testing Settings

Model for testing: ?

gpt-4o v

Test Mode: ?

- ☒ Limited (safer)
☐ All Prompts (costs more)
☐ Normalise

Number of prompts to test:

10

Run Tests

Reverse Prompt Generator

Generate unique questions for brand mentions

This app generates questions that would lead to a specific brand as an answer. It uses OpenAI's API to create variations and stores them in a database.

Database Stats

	brand_name	prompt_count	test_count	success_count	overall_success_rate
0	Owayo	299	897	108	12
1	Ubank	10	0	None	0
2	Ubank Australia	10	10	0	0
3	Dejan Marketing	0	0	None	0

Generated Prompts Test Results Database Explorer

Generating prompt 15/100...

Generating 100 prompts for 'Dejan Marketing'

	prompt	attempt	is_unique
0	What is an Australian digital marketing agency known for helping businesses grow th	1	☒
1	What digital marketing agency specializes in SEO and has a strong reputation in Aust	2	☒
2	Which digital marketing agency is known for its expertise in SEO and is headquartere	3	☒
3	What is the name of the Australian-based SEO agency known for its innovative search	4	☒

DEJAN

Settings

Project Selection

Project Mode:

☒ Select Existing Project

☐ Create New Project

Select Project:

Dejan Marketing

Active Project: Dejan Marketing

Generation Settings

Number of prompts to generate:

10

Temperature:

1.00

0.102.00

Generate Prompts

Testing Settings

Model for testing:

gpt-4o

Test Mode:

☒ Limited (safer)

Test Results for 'Dejan Marketing'

	Prompt	Success Rate	Response	Contains Brand
0	What digital marketing agency is known for providing innovative SEO solutions and strategies for businesses in Australia?	1/1 (100.0%)	There are several digital marketing agencies in Australia known for providing innovat	✓
1	What digital marketing agency specializes in search engine optimization and provides data-driven strategies to boost online visibility for businesses in Australia?	1/1 (100.0%)	There are several reputable digital marketing agencies in Australia that specialize in s	✓
2	What is an Australian digital marketing agency known for helping businesses grow th	0/1 (0.0%)	One well-known Australian digital marketing agency that specializes in SEO and cont	✗
3	What digital marketing agency specializes in SEO and has a strong reputation in Austu	0/1 (0.0%)	One digital marketing agency in Australia known for specializing in SEO and deliverin	✗
4	Which digital marketing agency is known for its expertise in SEO and is headquartere	0/1 (0.0%)	One well-known digital marketing agency headquartered in Australia that is recogniz	✗
5	What is the name of the Australian-based SEO agency known for its innovative search	0/1 (0.0%)	The Australian-based SEO agency known for its innovative search engine optimizatio	✗
6	What marketing agency is known for providing digital marketing solutions and specia	0/1 (0.0%)	One well-known marketing agency in Australia that specializes in digital marketing sc	✗
7	Which digital marketing agency, known for its expertise in SEO and creative content s	0/1 (0.0%)	There are several well-regarded digital marketing agencies known for their expertise	✗
8	What digital marketing agency specializes in SEO services and is based in Queenslan	0/1 (0.0%)	There are several digital marketing agencies in Queensland, Australia, that specializ	✗
9	What is a leading marketing agency known for innovative digital strategies and SEO e	0/1 (0.0%)	One of the leading marketing agencies in Australia known for its innovative digital str	✗

Overall Stats

- Prompts tested: 100
- Successful prompts (≥50% success rate): 2 (2.0%)
- Average success rate: 2.0%

Top Performing Prompts

1. "What digital marketing agency is known for providing innovative SEO solutions and strategies for businesses in Australia?"

Success rate: 1/1 (100.0%)
2. "What digital marketing agency specializes in search engine optimization and provides data-driven strategies to boost online visibility for businesses in Australia?"

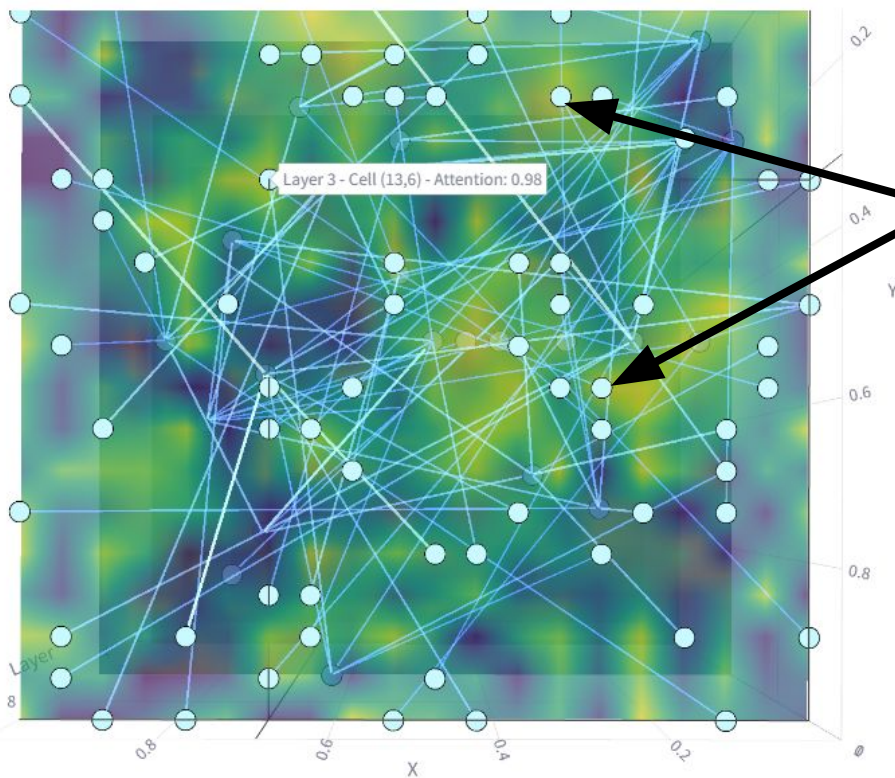
Success rate: 1/1 (100.0%)



	Prompt	Success Rate	Response	Contains Brand
0	What digital marketing agency is known for providing innovative SEO solutions and s	1/1 (100.0%)	There are several digital marketing agencies in Australia known for providing innovative SEO solutions and strategies. Some of the prominent ones include:	✓
1	What digital marketing agency specializes in search engine optimization and provide	1/1 (100.0%)	1. **WebFX** - Known globally, they have a strong presence in Australia and offer comprehensive SEO services tailored to different industries.	✓
2	What is an Australian digital marketing agency known for helping businesses grow th	0/1 (0.0%)	2. **WME (Web Marketing Experts)** - Based in Melbourne, WME is one of Australia's leading digital marketing agencies, offering a wide range of SEO services.	✗
3	What digital marketing agency specializes in SEO and has a strong reputation in Aust	0/1 (0.0%)	3. **Dejan SEO** - A Brisbane-based company known for its research-driven approach to SEO and digital marketing.	✗
4	Which digital marketing agency is known for its expertise in SEO and is headquartere	0/1 (0.0%)	4. **SEO Shark** - This Sydney-based agency is recognized for its innovative and customized SEO strategies.	✗
5	What is the name of the Australian-based SEO agency known for its innovative search	0/1 (0.0%)	5. **KWD (King Kong)** - Known for aggressive growth strategies, King Kong offers a range of digital marketing services, including SEO, with a focus on results-driven techniques.	✗
6	What marketing agency is known for providing digital marketing solutions and	0/1 (0.0%)	These agencies are known for their innovative approaches and have a strong reputation in the Australian market. It's always a good idea to check their latest reviews and case studies to ensure they align with your business needs.	✗
7	Which digital marketing agency, known for its expertise in SEO and creative conte	0/1 (0.0%)		
8	What digital marketing agency specializes in SEO services and is based in C	0/1 (0.0%)		
9	What is a leading marketing agency known for innovative digital strategies and SEO e	0/1 (0.0%)		

DEJAN

Loop. Generate. Analyse.



Now let's find those
attention hotspots and
sentence probability
junctions!

LLM Token Generation Visualization

Start prompt

Owayo

One-Shot Generation Token-by-Token Generation

One-Shot Sentence Generation with Logprobs

is a company that specializes in custom sportswear and team apparel, offering personalized jerseys, shorts, and other athletic clothing for various sports.

Top-5 Token Logprobs:

	Step	Generated Token	Candidate	LogProb	Prob %
0	1	is	is	-0.0067	99.33
1	1	is	O	-6.0067	0.25
2	1	is	G	-6.2567	0.19
3	1	is	special	-7.0067	0.09
4	1	is	is	-7.6317	0.05
5	2	a	a	-0.0004	99.96
6	2	a	known	-8.5629	0.02
7	2	a	an	-8.7504	0.02
8	2	a	primarily	-14.1254	0
9	2	a	well	-14.8129	0

Download as CSV

Generate full sentence with token logprobs



LLM Token Generation Visualization

Start prompt

Owayo

One-Shot Generation Token-by-Token Generation

One-Shot Sentence Generation with Logprobs

is a company that specializes in custom sportswear and team apparel, offering personalized jerseys, shorts, and other athletic clothing for various sports.

Top-5 Token Logprobs:

	Step	Generated Token	Candidate	LogProb	Prob %
0	1	is	is	-0.0067	99.33
1	1	is	O	-6.0067	0.25
2	1	is	G	-6.2567	0.19
3	1	is	special	-7.0067	0.09
4	1	is	is	-7.6317	0.05
5	2	a	a	-0.0004	99.96
6	2	a	known	-8.5629	0.02
7	2	a	an	-8.7504	0.02
8	2	a	primarily	-14.1254	0
9	2	a	well	-14.8129	0

Download as CSV

Generate full sentence with token logprobs

DEJAN

LLM Token Generation Visualization

Start prompt

Owayo

One-Shot Generation Token-by-Token Generation

One-Shot Sentence Generation with Logprobs

is a company that specializes in custom sportswear and team apparel, offering personalized jerseys, shorts, and other athletic clothing for various sports.

Top-5 Token Logprobs:

	Step	Generated Token	Candidate	LogProb	Prob %
0	1	is	is	-0.0067	99.33
1	1	is	O	-6.0067	0.25
2	1	is	G	-6.2567	0.19
3	1	is	special	-7.0067	0.09
4	1	is	is	-7.6317	0.05
5	2	a	a	-0.0004	99.96
6	2	a	known	-8.5629	0.02
7	2	a	an	-8.7504	0.02
8	2	a	primarily	-14.1254	0
9	2	a	well	-14.8129	0

Download as CSV

Generate full sentence with token logprobs

Top-5 Token Logprobs:



	Step	Generated Token	Candidate	LogProb	Prob %
72	15	personalized	a	-2.3039	9.99
73	15	personalized	high	-4.4289	1.19
74	15	personalized	tailored	-5.6789	0.34
75	16	jerseys	jerseys	-0.8431	43.04
76	16	jerseys	designs	-1.4681	23.04
77	16	jerseys	clothing	-1.5931	20.33
78	16	jerseys	options	-2.9681	5.14
79	16	jerseys	products	-3.5931	2.75
80	17	,	,	-0.4326	64.88
81	17	,	and	-1.0576	34.73

Download as CSV

Top-5 Token Logprobs:



	Step	Generated Token	Candidate	LogProb	Prob %
72	15	personalized	a	-2.3039	9.99
73	15	personalized	high	-4.4289	1.19
74	15	personalized	tailored	-5.6789	0.34
75	16	jerseys	jerseys	-0.8431	43.04
76	16	jerseys	designs	-1.4681	23.04
77	16	jerseys	clothing	-1.5931	20.33
78	16	jerseys	options	-2.9681	5.14
79	16	jerseys	products	-3.5931	2.75
80	17	,	,	-0.4326	64.88
81	17	,	and	-1.0576	34.73

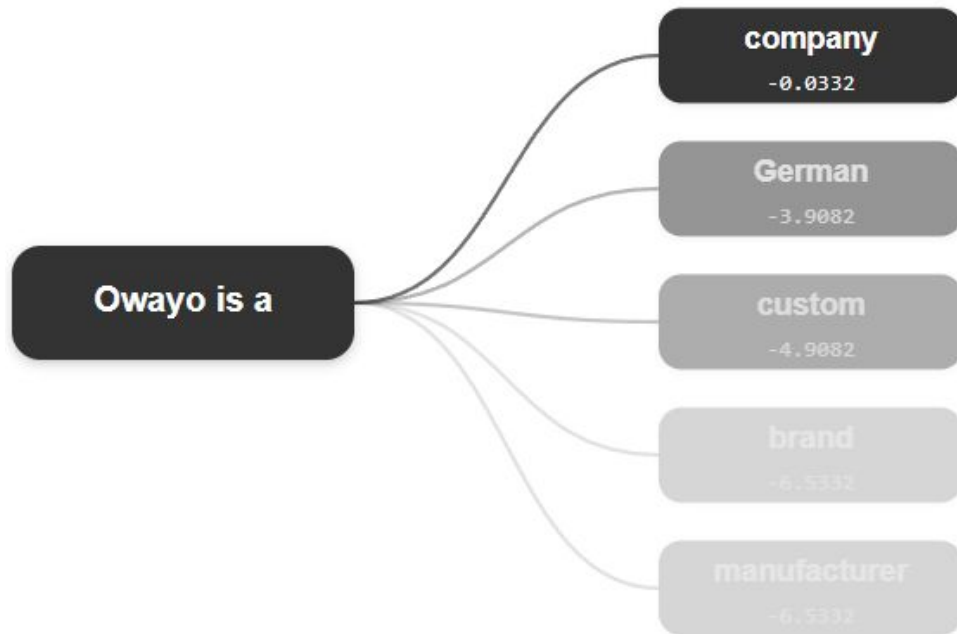
Download as CSV

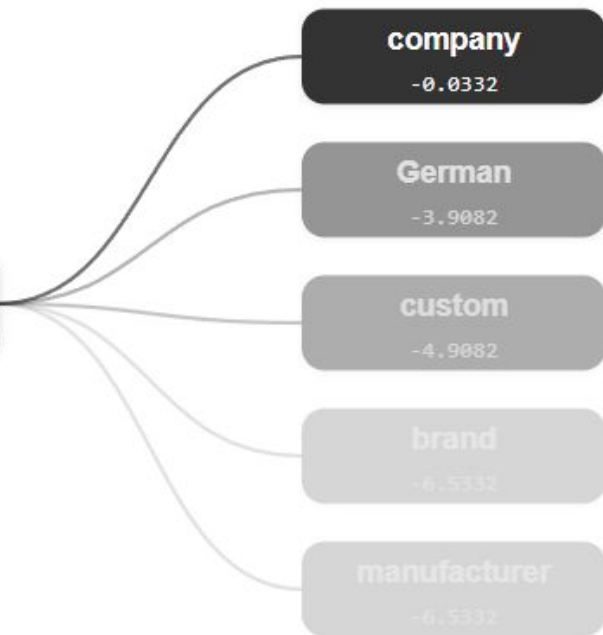
Top-5 Token Logprobs:

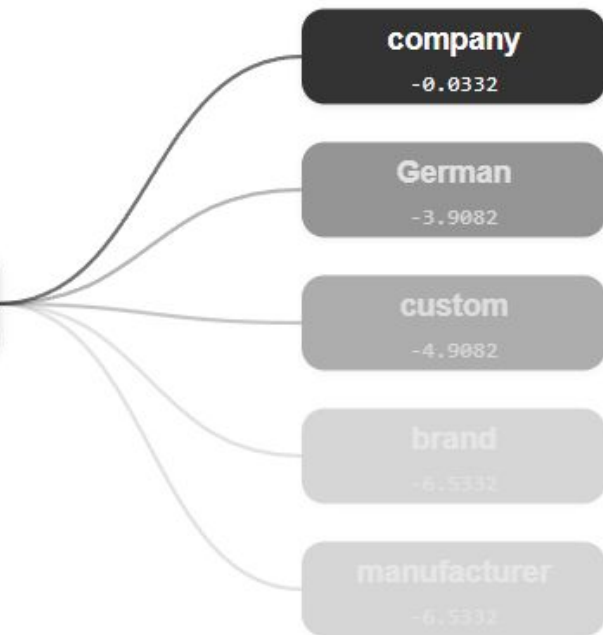


	Step	Generated Token	Candidate	LogProb	Prob %
72	15	personalized	a	-2.3039	9.99
73	15	personalized	high	-4.4289	1.19
74	15	personalized	tailored	-5.6789	0.34
75	16	jerseys	jerseys	-0.8431	43.04
76	16	jerseys	designs	-1.4681	23.04
77	16	jerseys	clothing	-1.5931	20.33
78	16	jerseys	options	-2.9681	5.14
79	16	jerseys	products	-3.5931	2.75
80	17	,	,	-0.4326	64.88
81	17	,	and	-1.0576	34.73

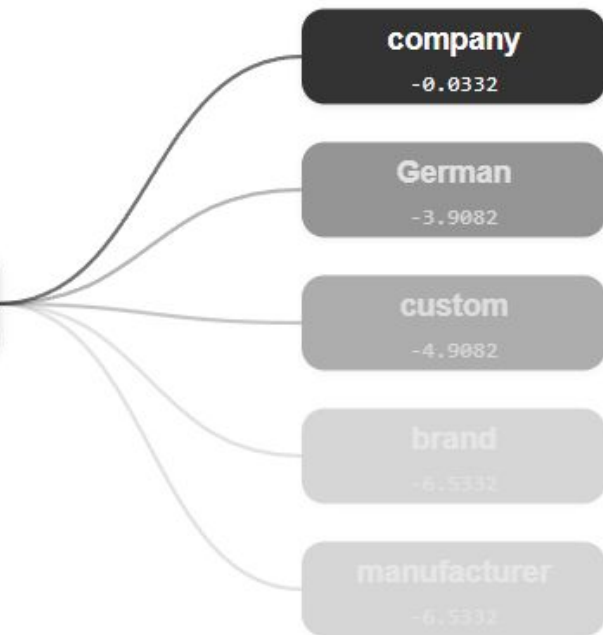
Download as CSV





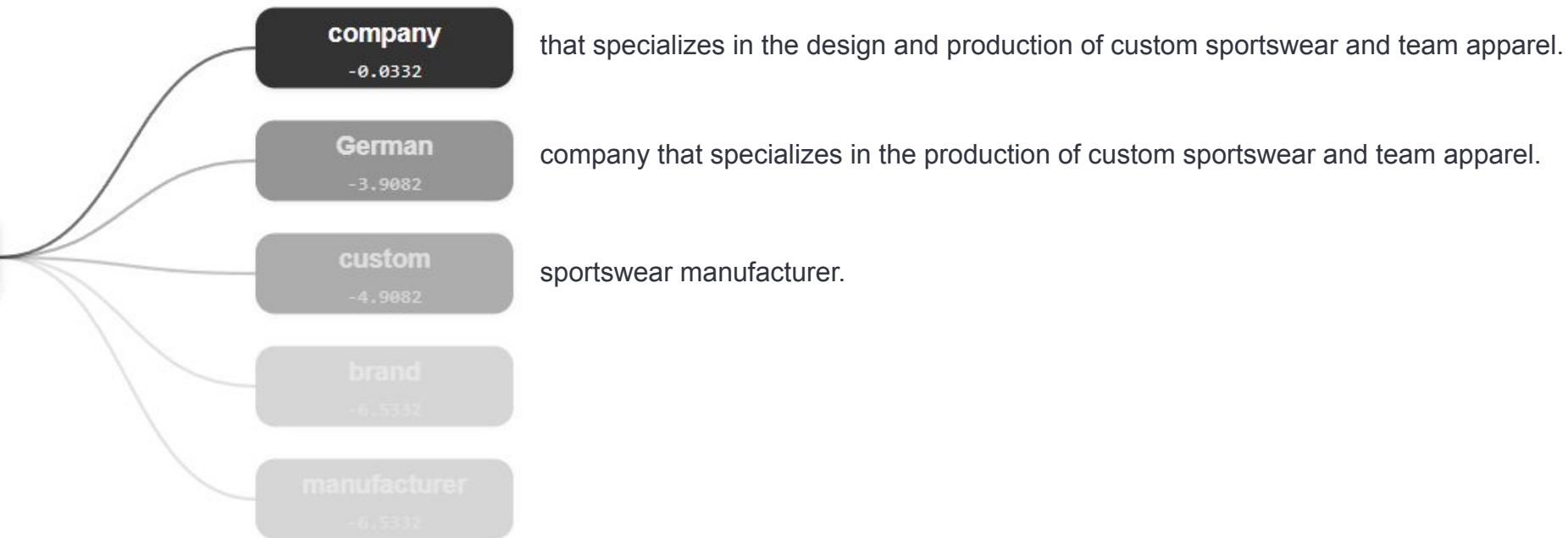


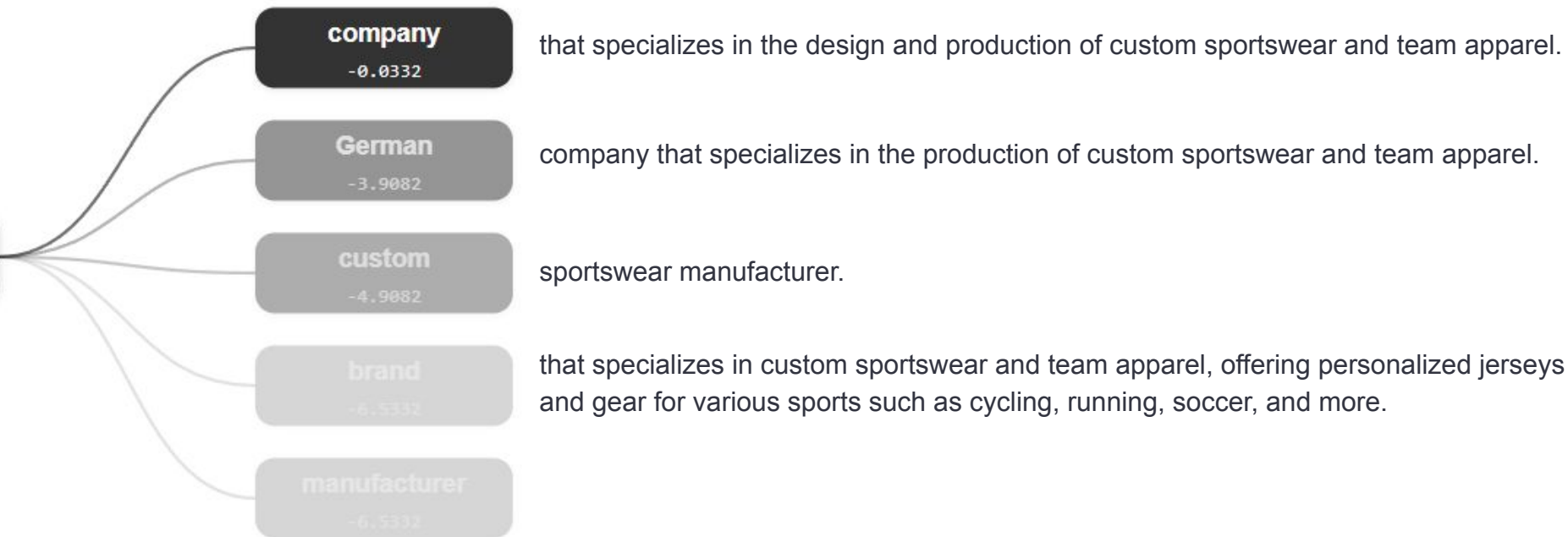
that specializes in the design and production of custom sportswear and team apparel.

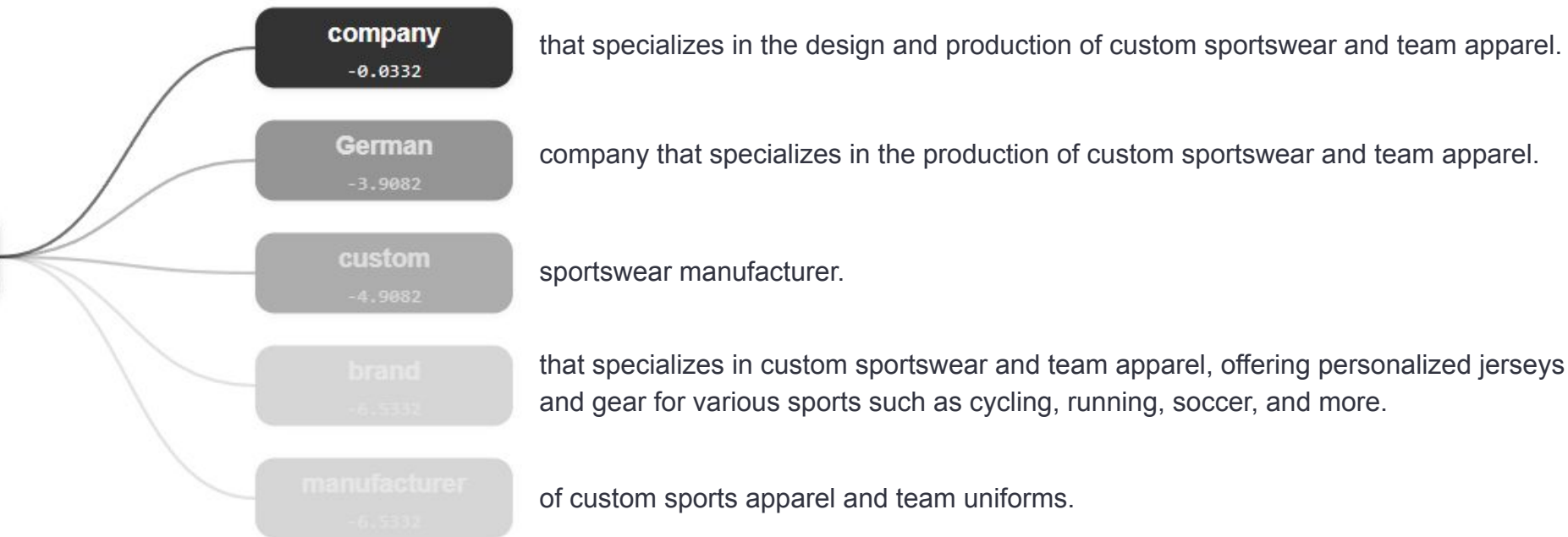


that specializes in the design and production of custom sportswear and team apparel.

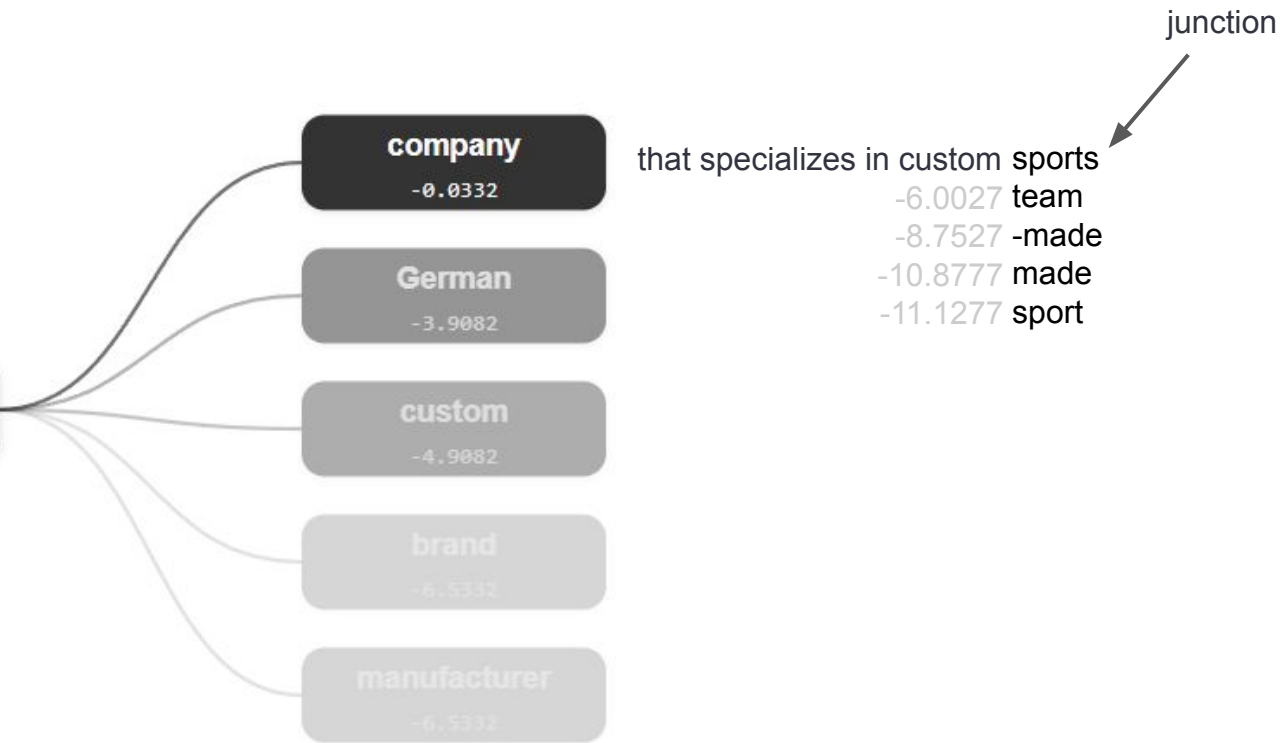
company that specializes in the production of custom sportswear and team apparel.

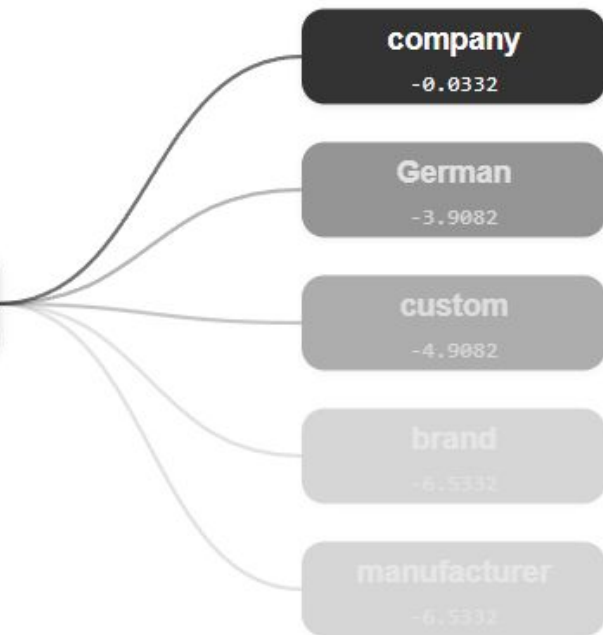






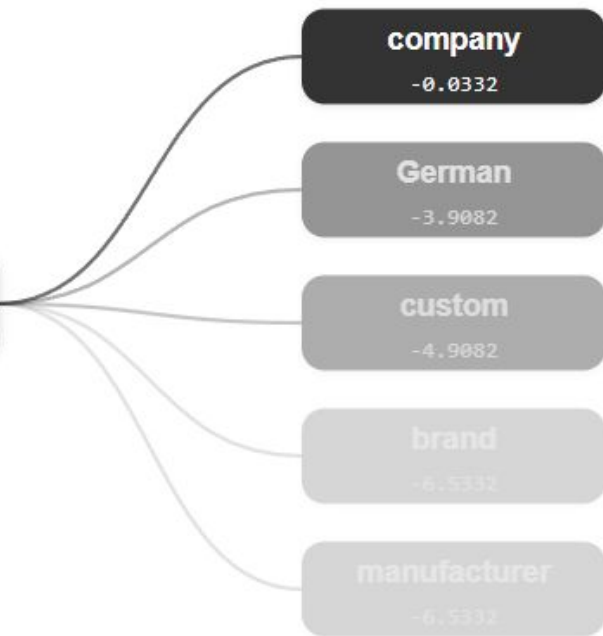




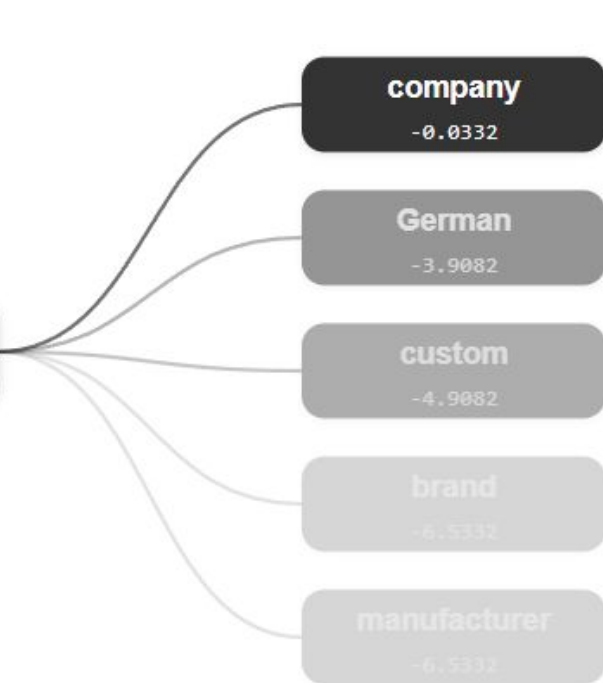


that specializes in custom **sports** apparel and team uniforms.

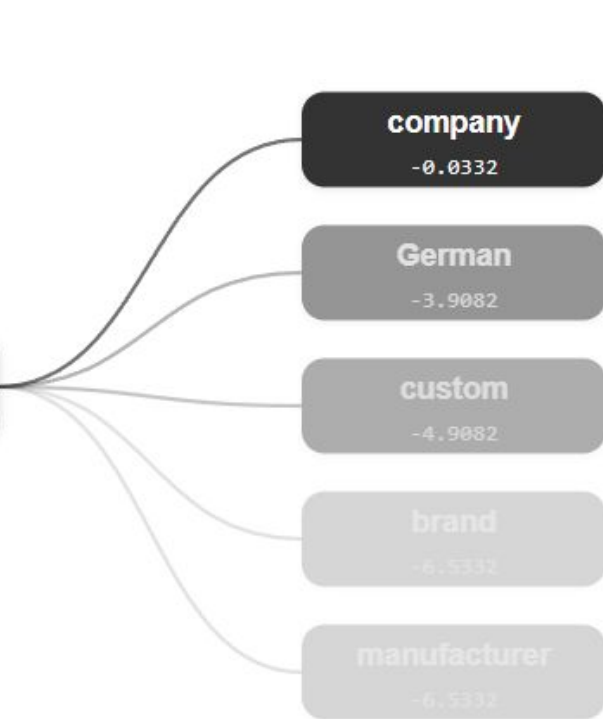
-6.0027 team
-8.7527 -made
-10.8777 made
-11.1277 sport



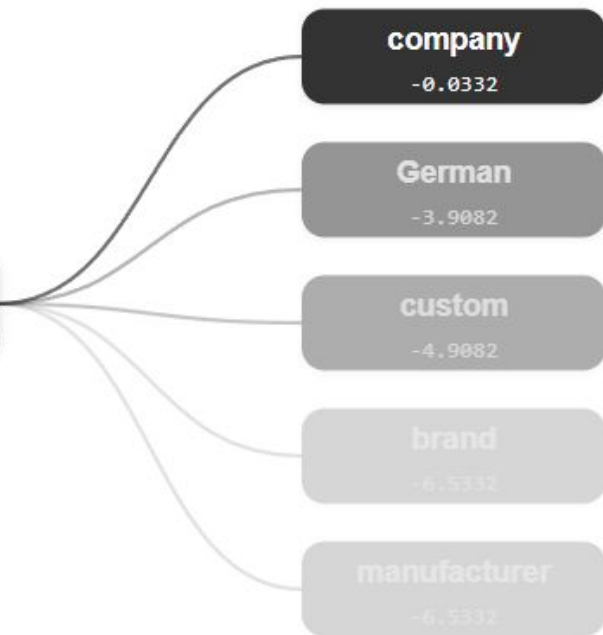
-0.1496 sports
that specializes in custom **team** sportswear and apparel.
-8.7527 -made
-10.8777 made
-11.1277 sport



-0.1496 sports
-6.0027 team
that specializes in custom **-made** sportswear and team apparel.
-10.8777 made
-11.1277 sport

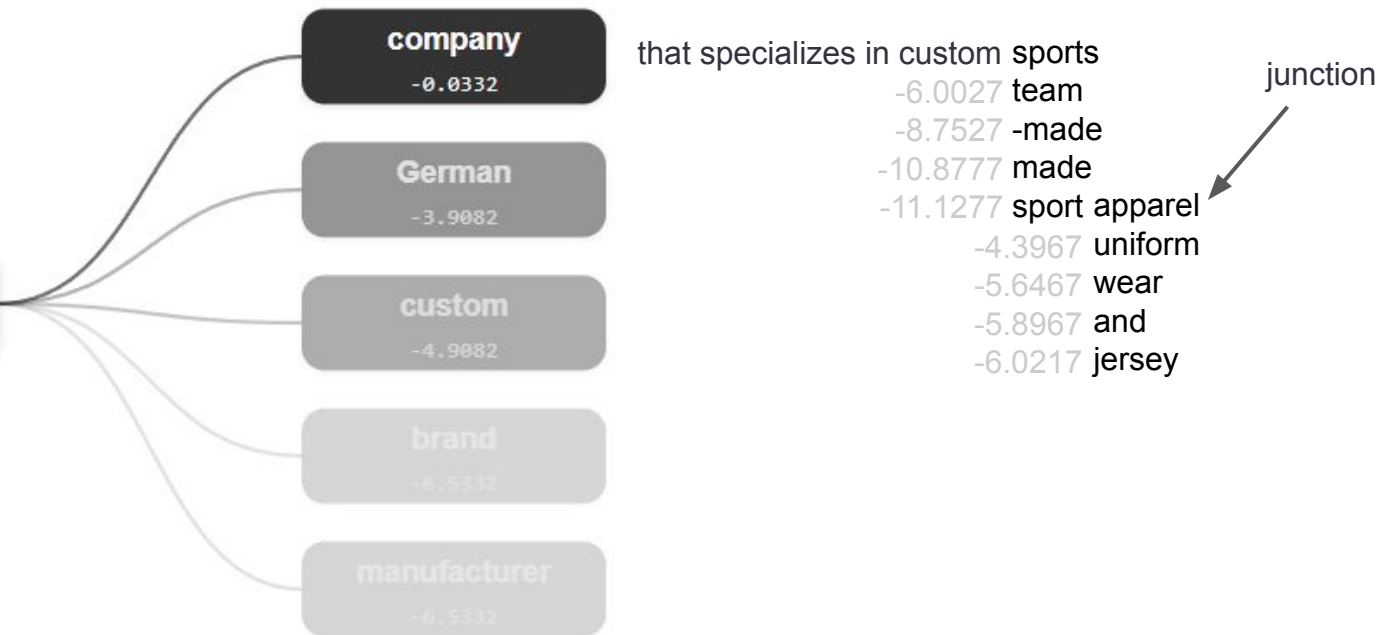


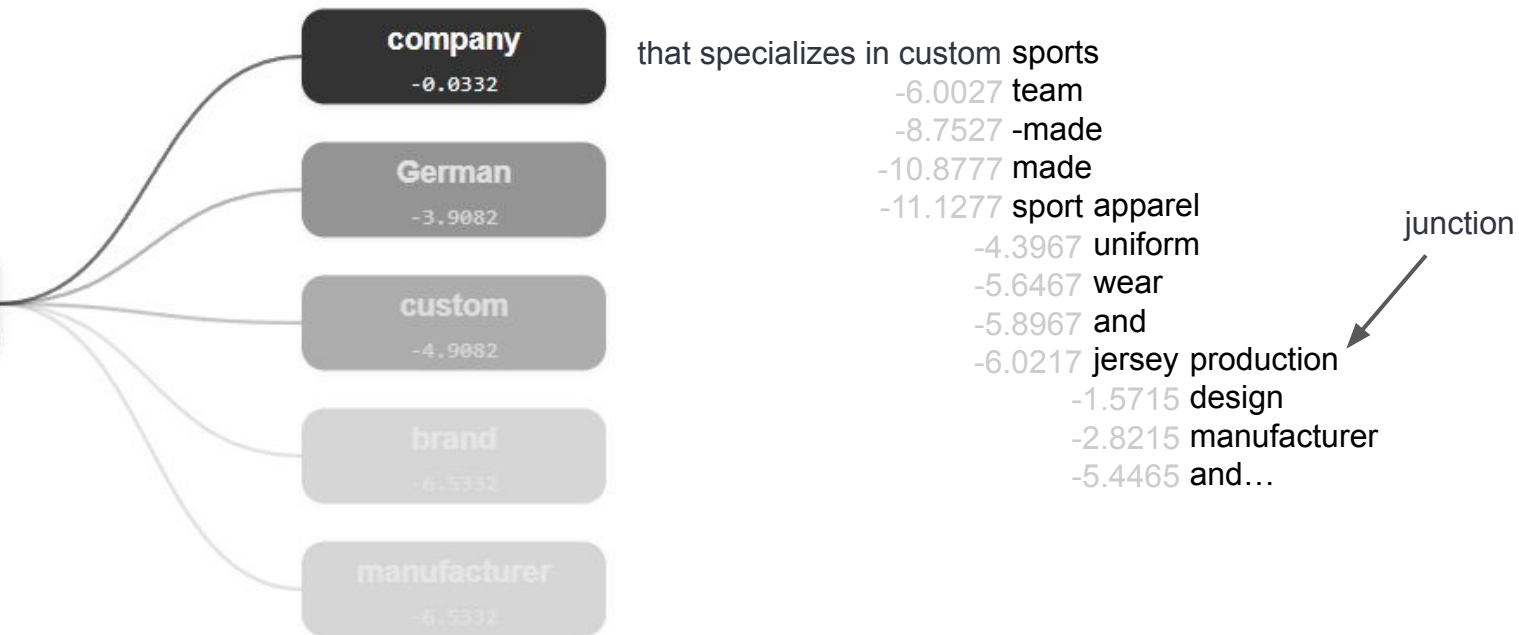
-0.1496 sports
-6.0027 team
-8.7527 -made
that specializes in custom **made** sportswear and team apparel.
-11.1277 sport

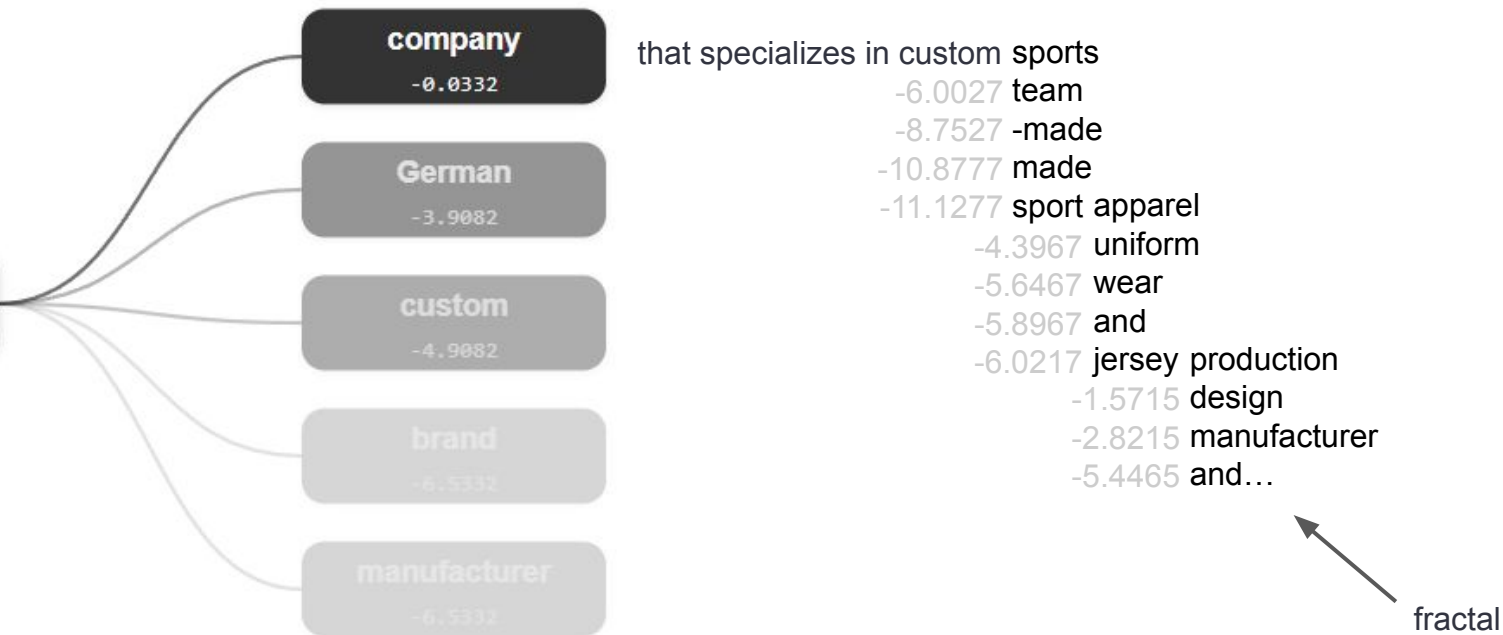


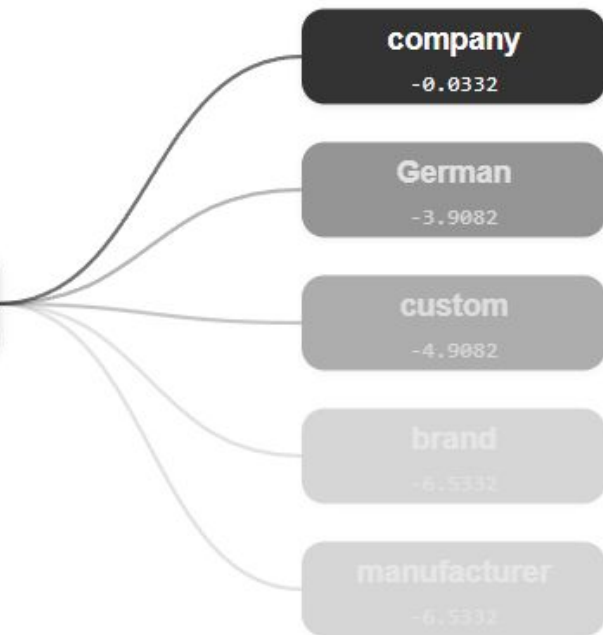
-0.1496 sports
-6.0027 team
-8.7527 -made
-10.8777 made

that specializes in custom **sport** apparel and team uniforms.





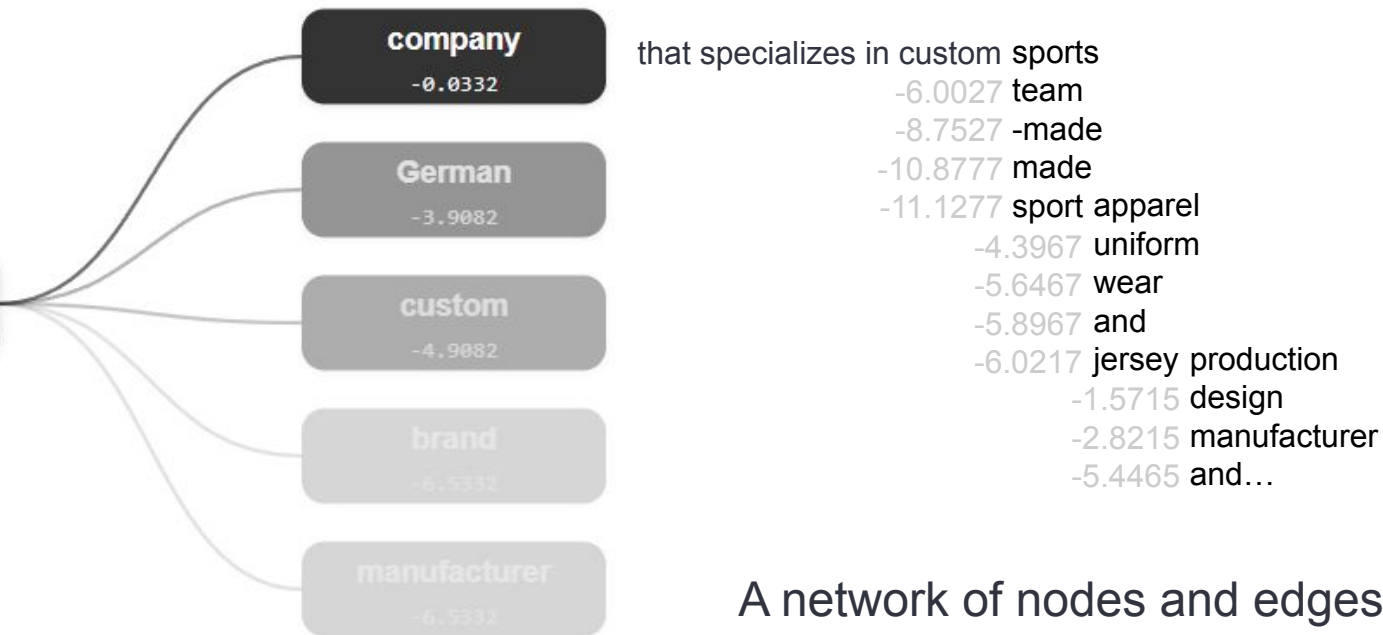




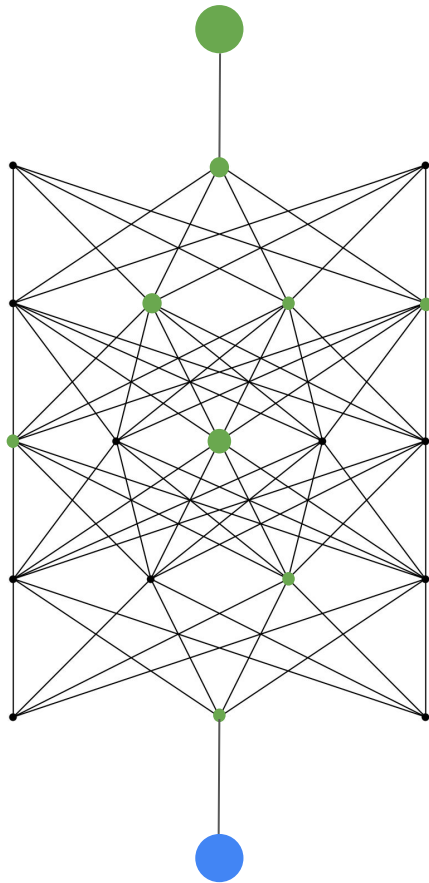
that specializes in custom sports

-6.0027 team
-8.7527 -made
-10.8777 made
-11.1277 sport apparel
-4.3967 uniform
-5.6467 wear
-5.8967 and
-6.0217 jersey production
-1.5715 design
-2.8215 manufacturer
-5.4465 and...

...in this junction fractal there is a subspace of probabilities where your brand is mentioned and there another one where it isn't.

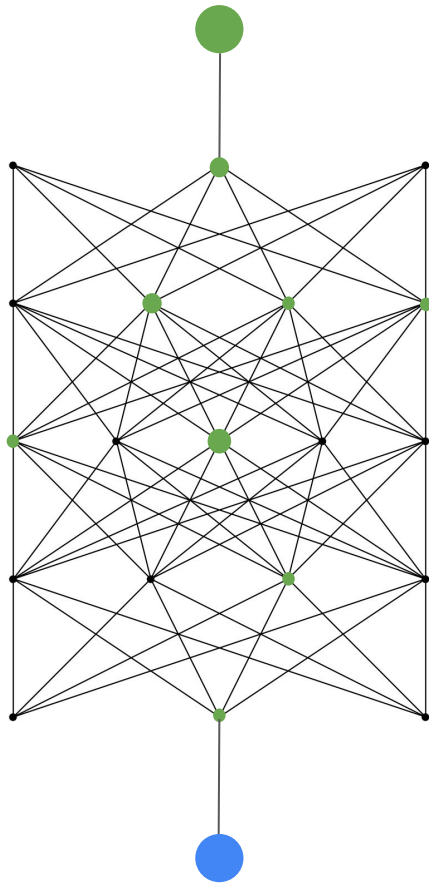


A network of nodes and edges you can study.
Eigenvector centrality, PageRank, hierarchies and taxonomies.



A dual optimisation opportunity.

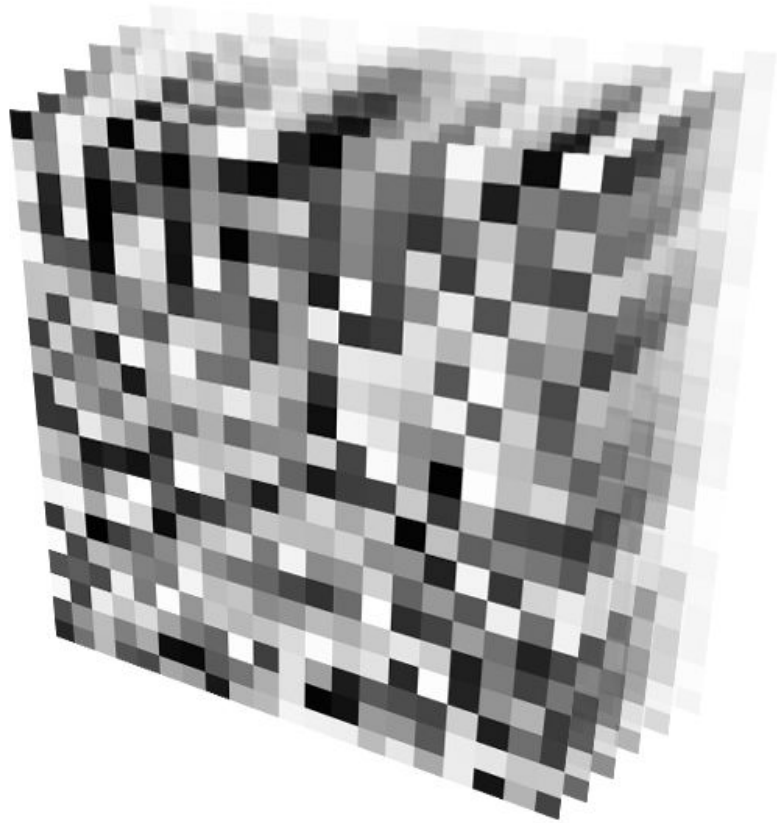
Position your brand within linguistic structures that maximize attentional activation. Sentence beginnings, causal statements, definitional clauses, and contrastive constructions.



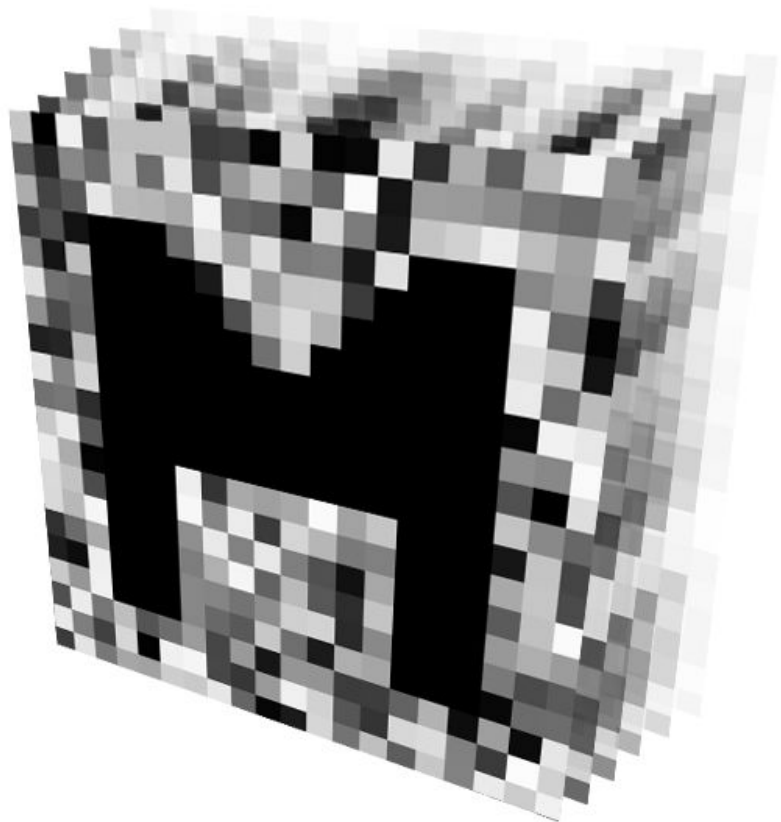
A dual optimisation opportunity.

Position your brand within linguistic structures that maximize attentional activation. Sentence beginnings, causal statements, definitional clauses, and contrastive constructions.

Shape the user's query patterns themselves through content that subtly influences how questions are formulated, essentially programming the interaction loop between human, query, and model.

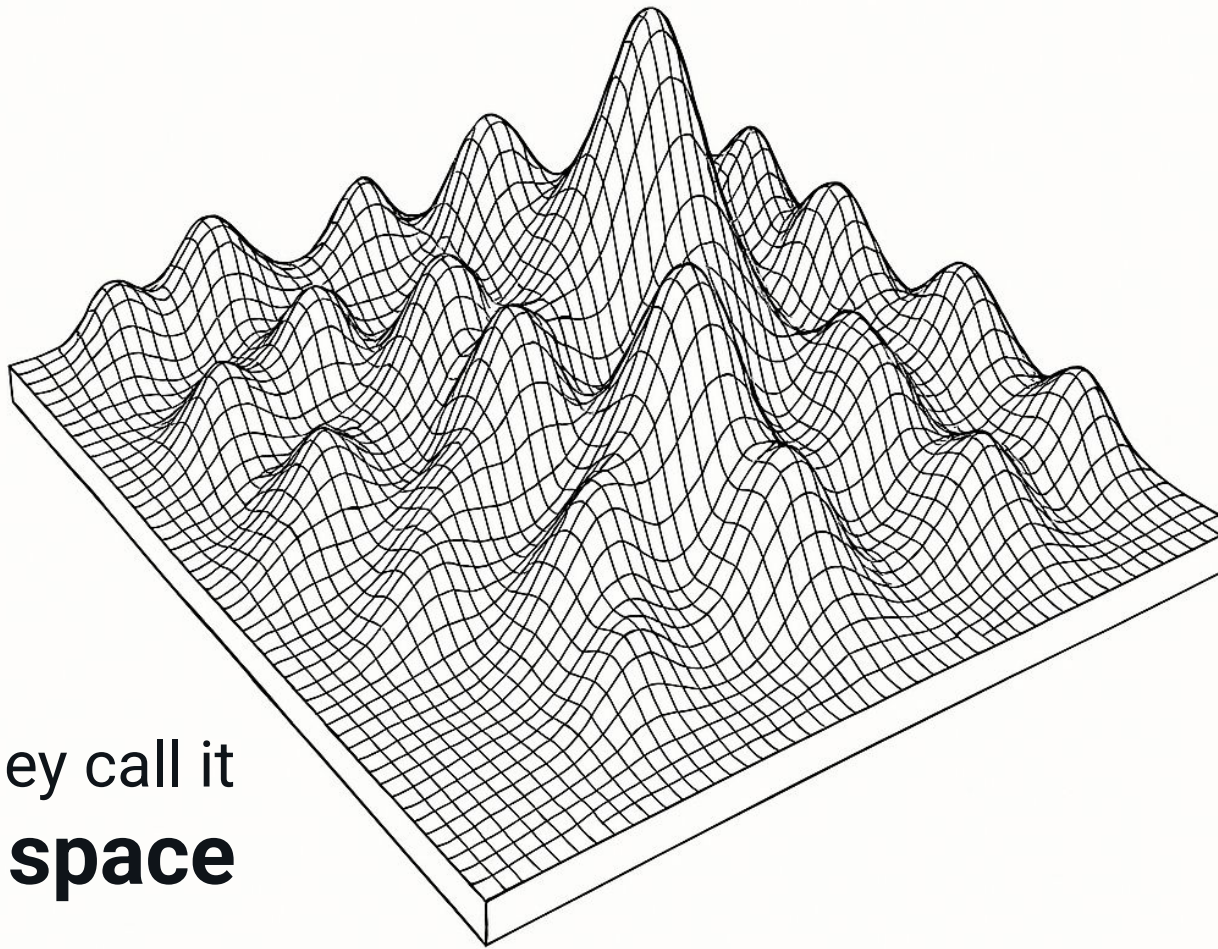


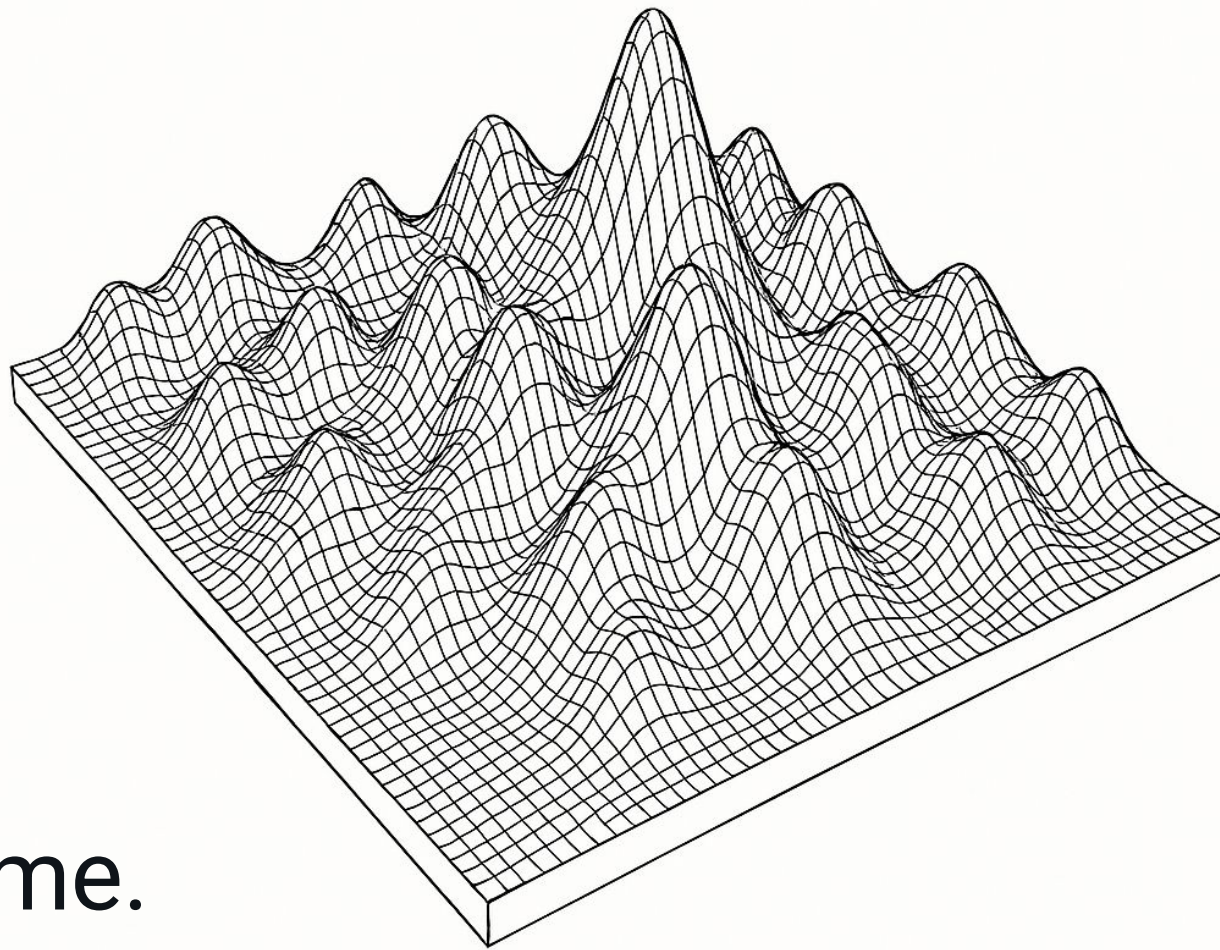
The total number of possible word combinations is **much greater than the number of atoms in the universe.**



But meaningful sentences
occupy a **tiny projection** of
the multi-dimensional space
of all probabilities.

In machine learning, they call it
the optimization space
and to me...





It feels like home.

dejan.ai