



# **Introducing Vectra E-commerce Search Embeddings**

**AI Foundation Model**

**MICES Berlin**

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# Philippe Bouzaglou



**facebook**




vectra

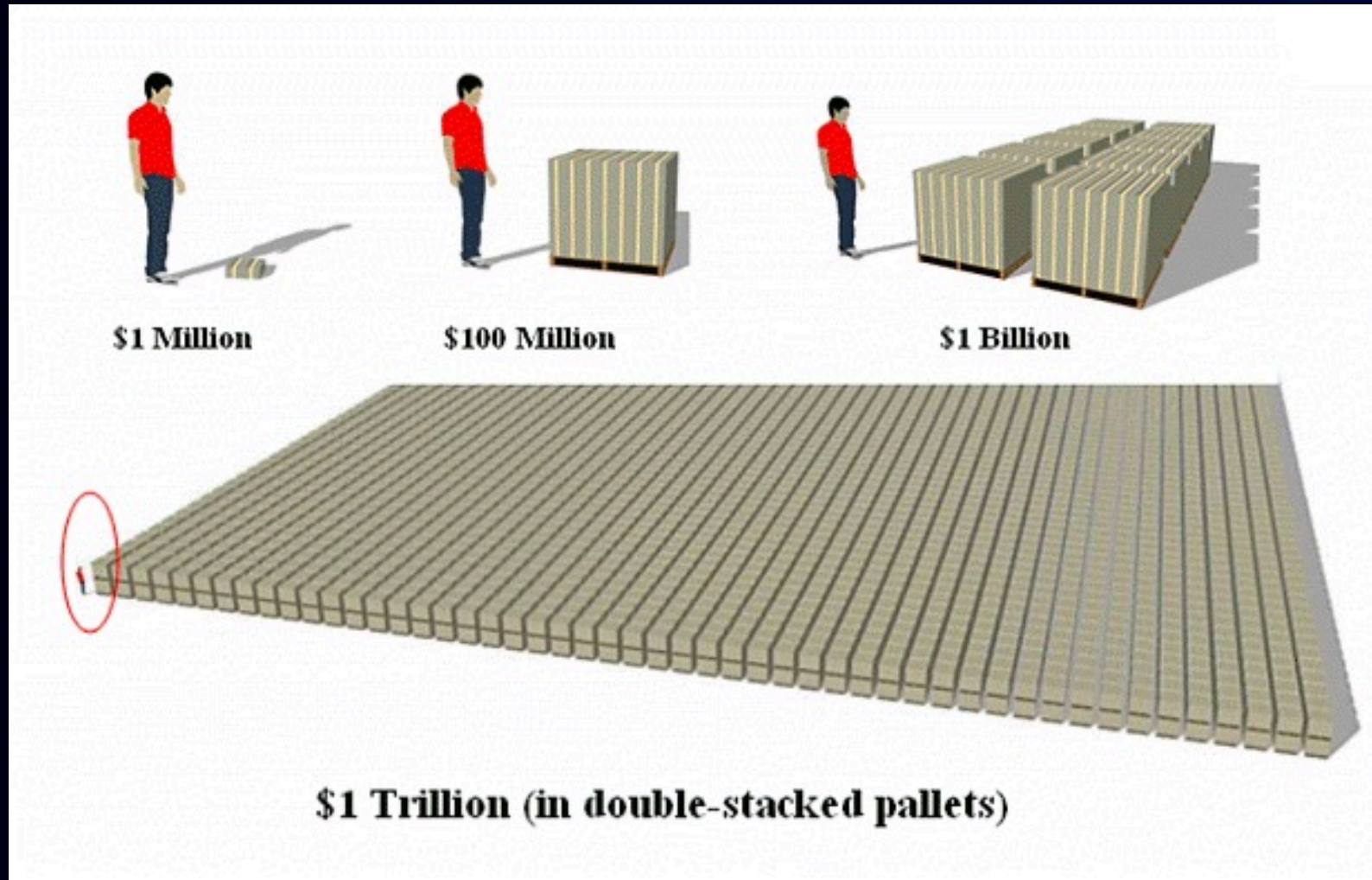
**An AI Foundation Model**

**Specifically for E-Commerce Search**

## Pre-Training Strategy

- **World Knowledge**
  - **Tiny vectors (256 dim)**
  - **SPEED (5ms)**
  - **Separate ultra-fast query embedder**
- 
- An abstract graphic in the bottom right corner consisting of a network of glowing blue nodes connected by thin lines, resembling a neural network or data flow.

## Large Training Data (1 Trillion Tokens)



# Quality comparison





**all-miniLM-L6-v2**

**["shoe","men's","red"]**

```
{
  "product_type": "men's loafers",
  "style": "slip-on dress shoes",
  "color": {
    "primary": "burgundy/wine red",
    "material_appearance": "velvet",
    "finish": "matte with subtle sheen"
  },
  "upper_details": {
    "material": "velvet fabric",
    "pattern": {
      "type": "quilted",
      "description": "diamond-shaped quilting pattern covering entire upper",
      "texture": "raised, padded appearance creating dimensional effect"
    },
    "construction": "slip-on design with no laces or buckles"
  },
  "embellishment": {
    "type": "metal medallion",
    "location": "center front of vamp",
    "design": "ornate crest or shield-shaped emblem",
    "color": "silver/pewter tone",
    "details": "appears to feature intricate engraving or embossed design"
  },
  "sole": {
    "visible_portion": "black",
    "material_appearance": "leather or synthetic",
    "profile": "low-profile dress shoe sole"
  },
  "interior": {
    "lining_color": "black",
    "visible_branding": "partial text visible inside shoe"
  },
  "overall_aesthetic": {
    "style_category": "luxury/formal",
    "occasion": "formal events, evening wear, special occasions",
    "design_influence": "European luxury slipper style"
  },
}
```




# Case Study



## Current solution


5:25 📶 🔋

🔍 zucker ✕




**1.99 EUR\***  
Alpro Haferdrink Ohne Zucker, 1l  
1.99 EUR/l  
[mehr info](#)

+




**1.69 EUR\***  
Heinz Tomato Ketchup, 230ml  
7.60 EUR/l  
[mehr info](#)

+




**1.69 EUR\***  
Spinatsalat, 150g  
11.27 EUR/kg  
[mehr info](#)

+



**1.29 EUR\***  
Sweet Family Feinster Zucker, 1kg  
1.29 EUR/kg  
[mehr info](#)

+



**2.19 EUR\***  
Sweet Family Brauner Zucker, 1kg  
2.19 EUR/kg  
[mehr info](#)


+

🏠 🔍 🛒 ❤️ 👤

## New smart search


5:26 📶 🔋

🔍 zucker ✕




**1.99 EUR\***  
Diamant Feinster Zucker, 1kg  
1.99 EUR/kg  
[mehr info](#)

+




**1.09 EUR\***  
Dr. Oetker Bourbon Vanille Zucker, 10 Stk., 24g  
45.42 EUR/kg  
[mehr info](#)

+




**1.29 EUR\***  
Sweet Family Feinster Zucker, 1kg  
1.29 EUR/kg  
[mehr info](#)

+



**2.89 EUR\***  
Diamant Rohrzucker unraffiniert, 500 g  
5.78 EUR/kg  
[mehr info](#)

+

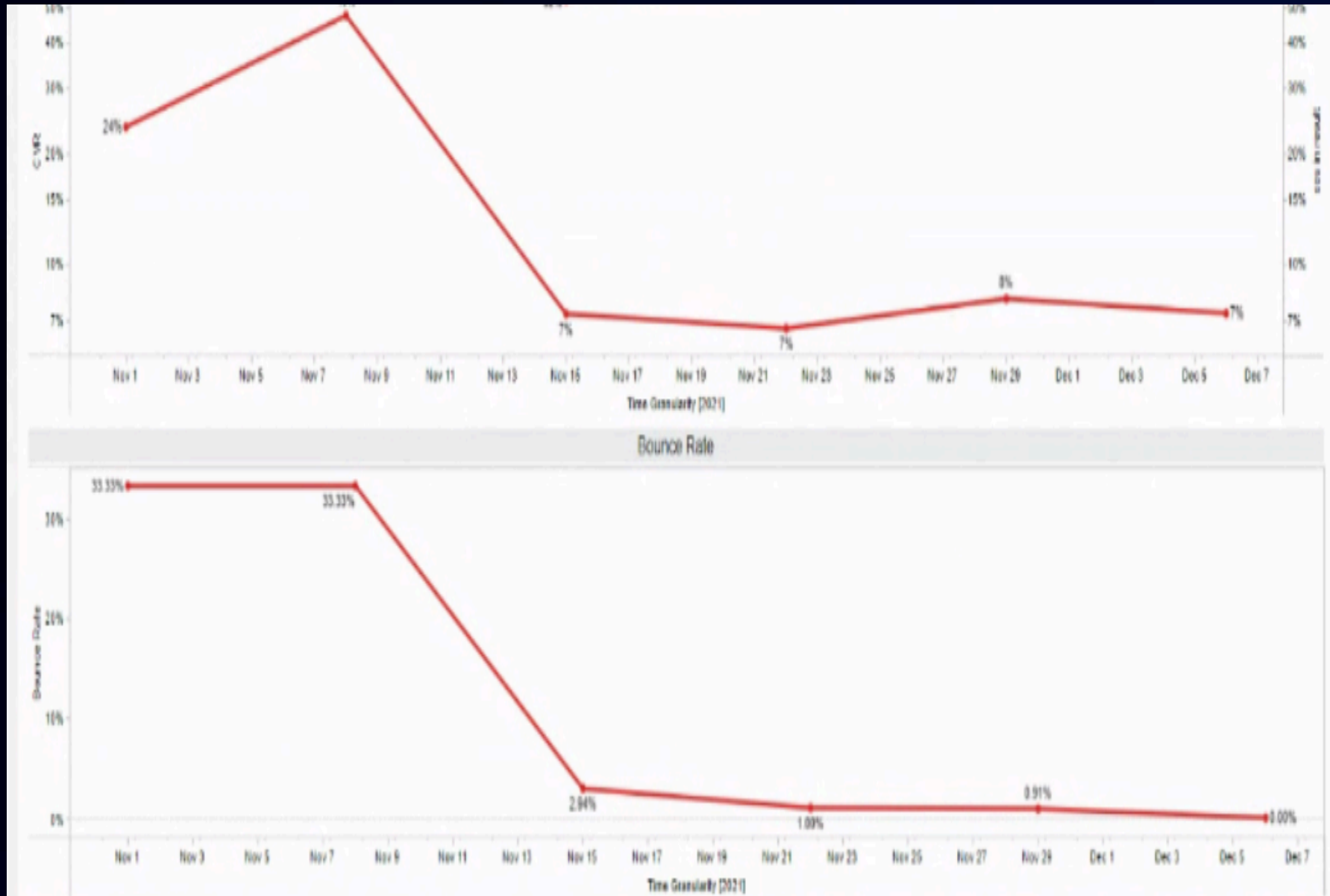


**2.19 EUR\***  
Sweet Family Brauner Zucker, 1kg  
2.19 EUR/kg  
[mehr info](#)

+

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# Search Abandonment



# Implementation

- **Embed your catalog**
- **Start with simple Candidate Generation**
- **We want to hear what you build**



**Announcing**  
**vectra-micro (distilled model)**  
**Free**  
**for open source platform users**



Try out our fake shop



- <https://zalando.mariosbox.com>
- User: esattendee
- Pass: letmein

# Get In Touch

 Philippe Bouzaglou

