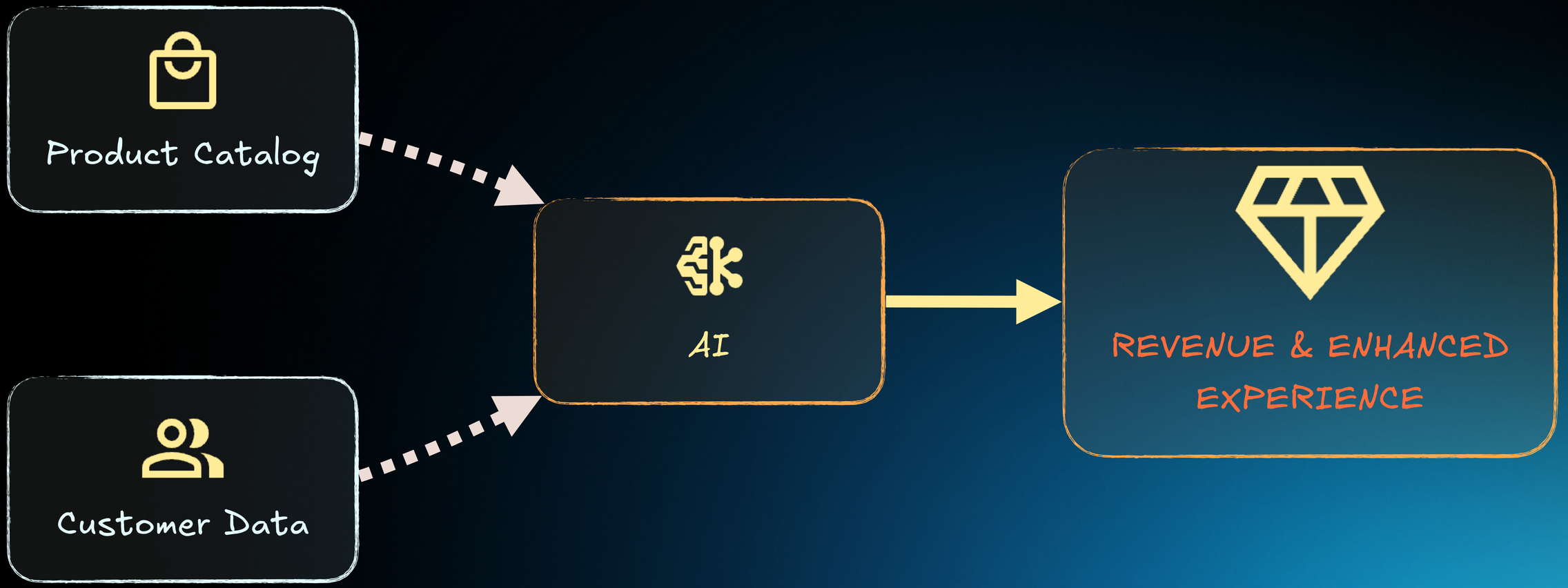
AI-Powered Search in Modern E-Commerce

Stanko Kuveljić

The Paradox of Choice



The Unseen Goldmine: Your Data



AI Powered Search

Turn frustrated searches into sales

Match products to customer language

Guide customers to what they want

Create personalized shopping

Discovery with Semantic Search



Keywords: Lost in Translation

WARM TOP FOR WINTER



Top Tire
For Winter



Womens Warm
Sweater For Winter



Womens High Top
Winter Boots

Enter Semantic Search

WARM TOP FOR WINTER



Red Cat
Warm Shirt

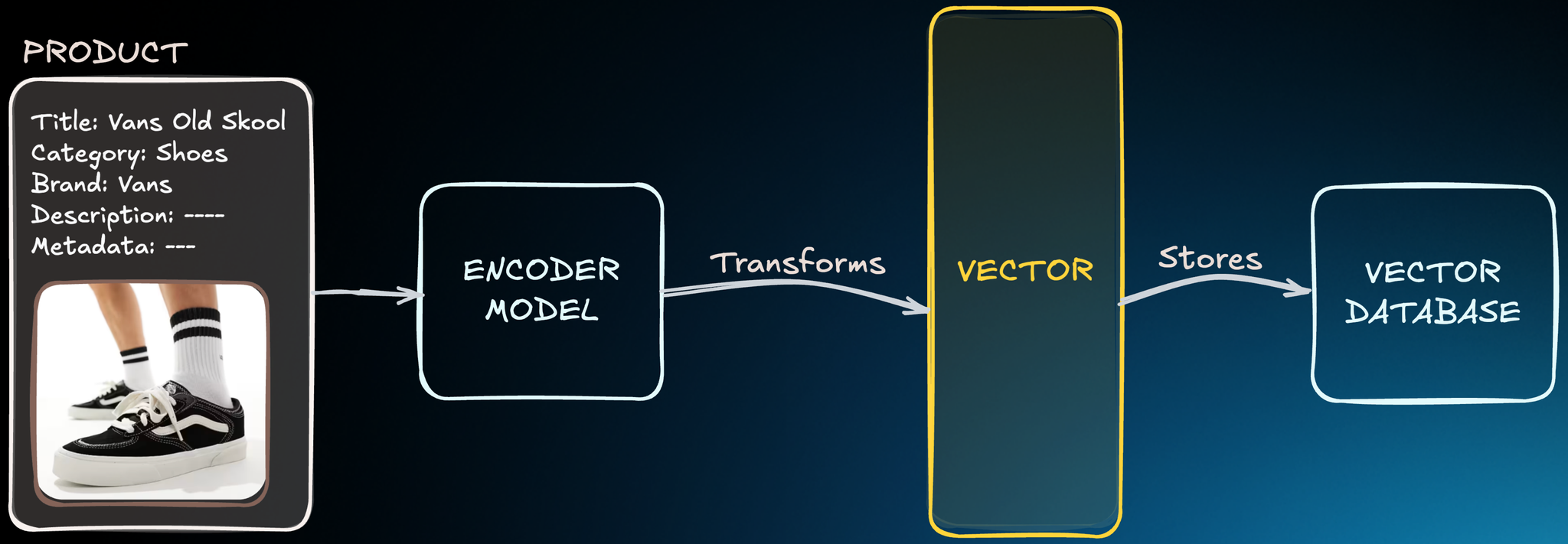


Womens Warm
Sweater For Winter

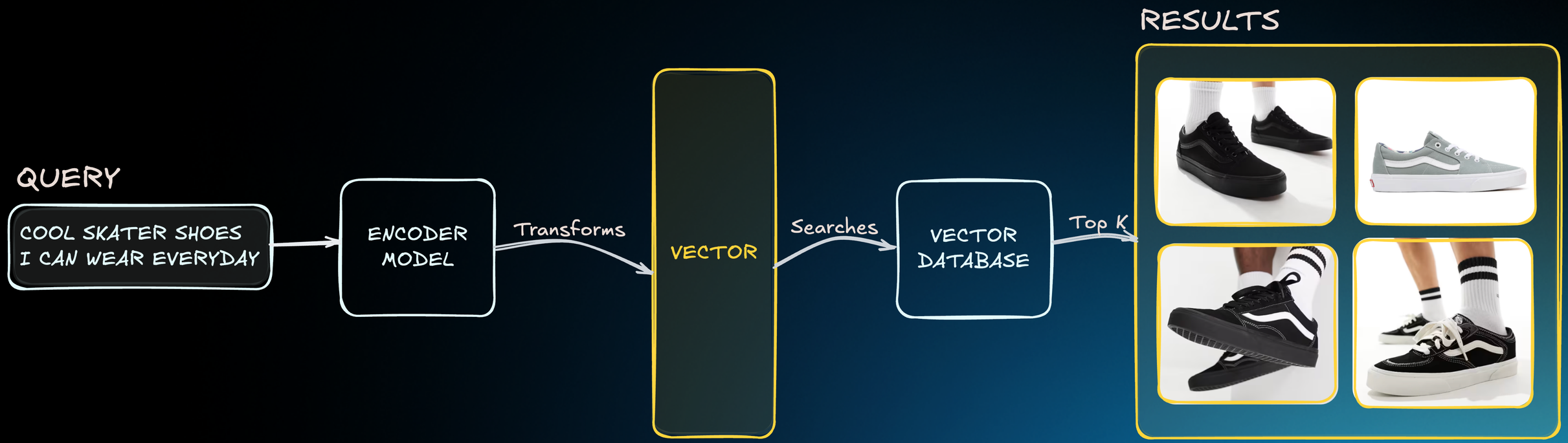


Womens Fall Winter
Warm Thick Shirt

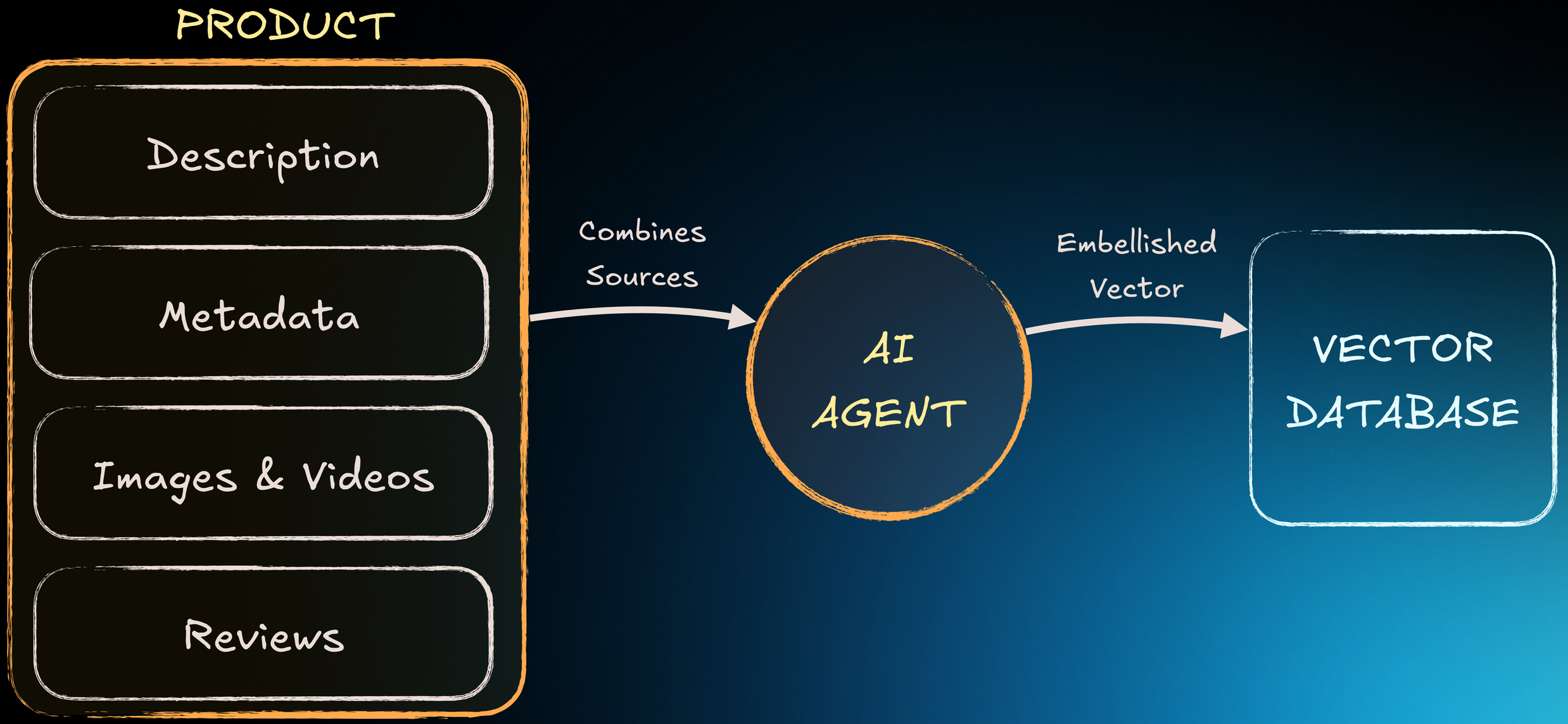
Semantic Search: Embeddings



Semantic Search: Vector Search



Better Embeddings == Better Retrieval



Query Understanding



Query Understanding - Intent Classification

SPECIFIC

Levi's 501 jeans women





EXPLORATORY

Outfits for fall





Query Understanding - Intent Classification

COMPLEMENTARY

Shoes to wear with red dress





FUNCTIONAL / PROBLEM

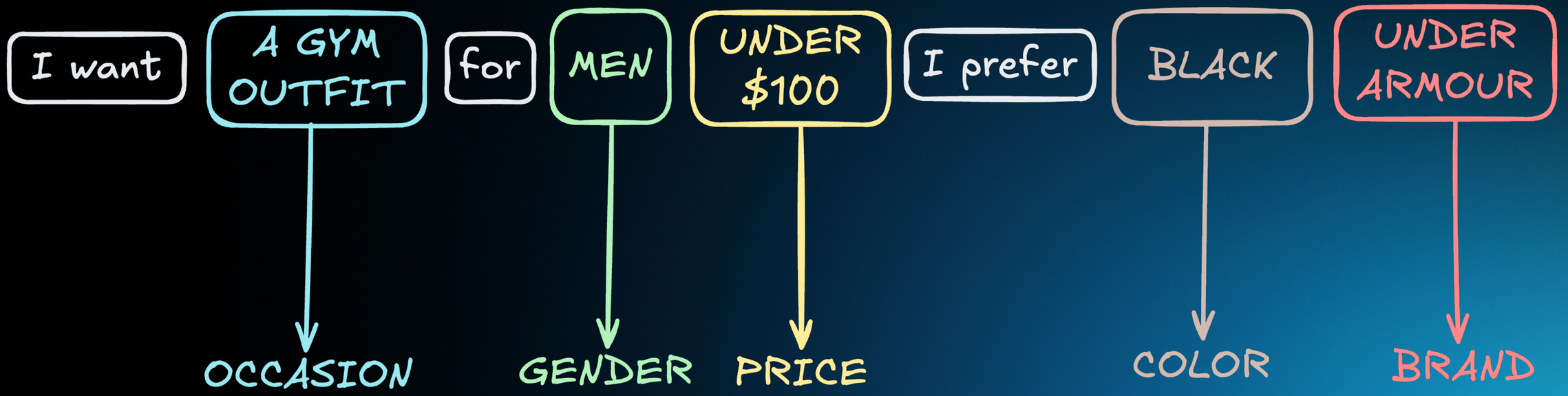
Best hiking boots for snow



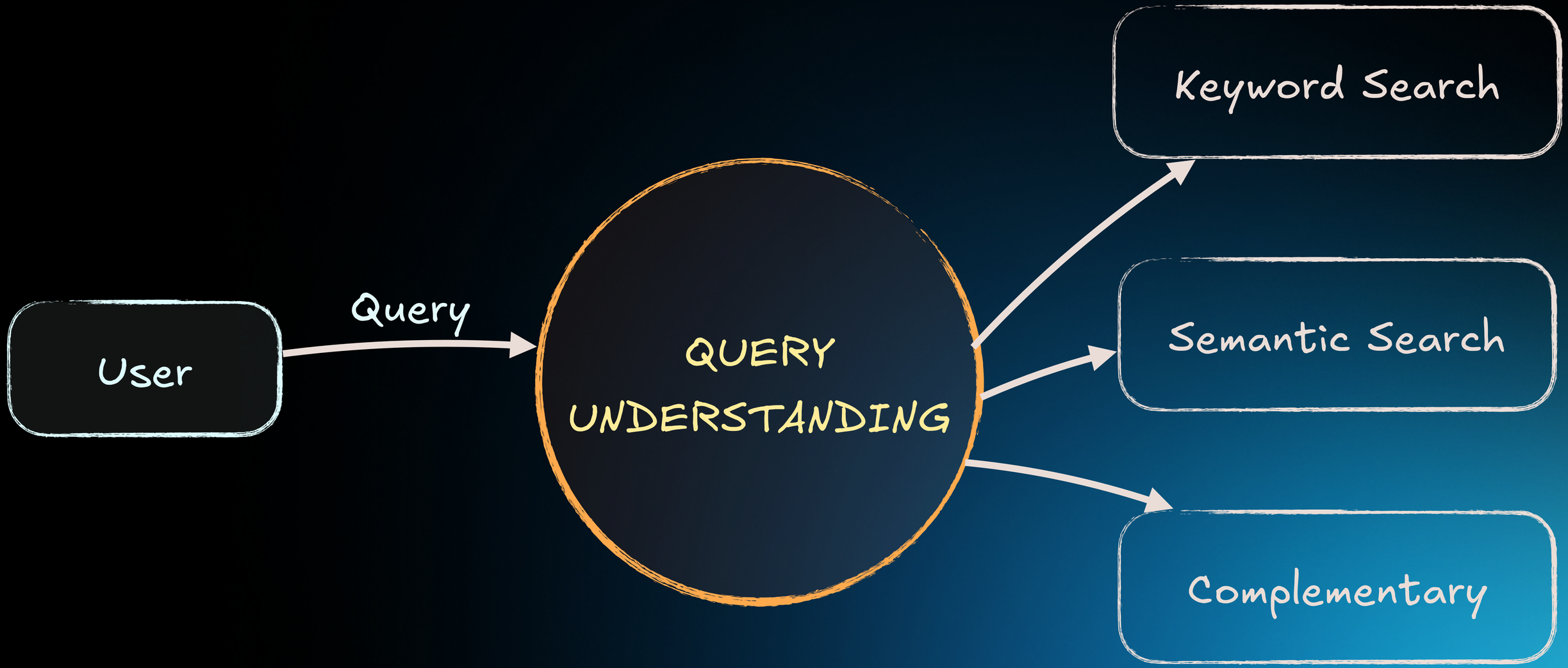



Query Breakdown

INTENT: EXPLORATORY SEARCH



Query Understanding



Beyond One-Size Fits All



Personalization: A Tailored Experience

BEFORE RANKING

AFTER RANKING

TRAINING SHIRT



Nike Women's Shirt



UA Navy Shirt



Holloway Men's Shirt



UA Men's Shirt

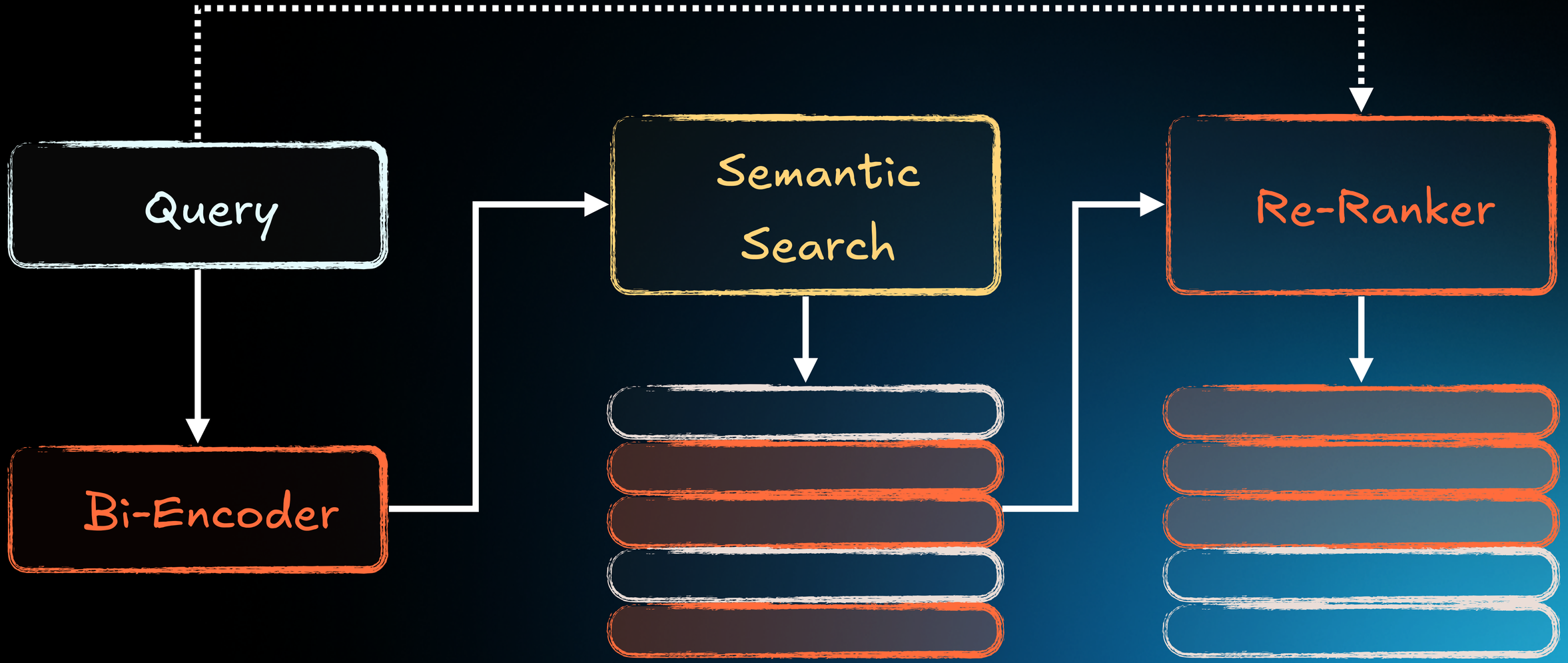


Navy Men's Shirt

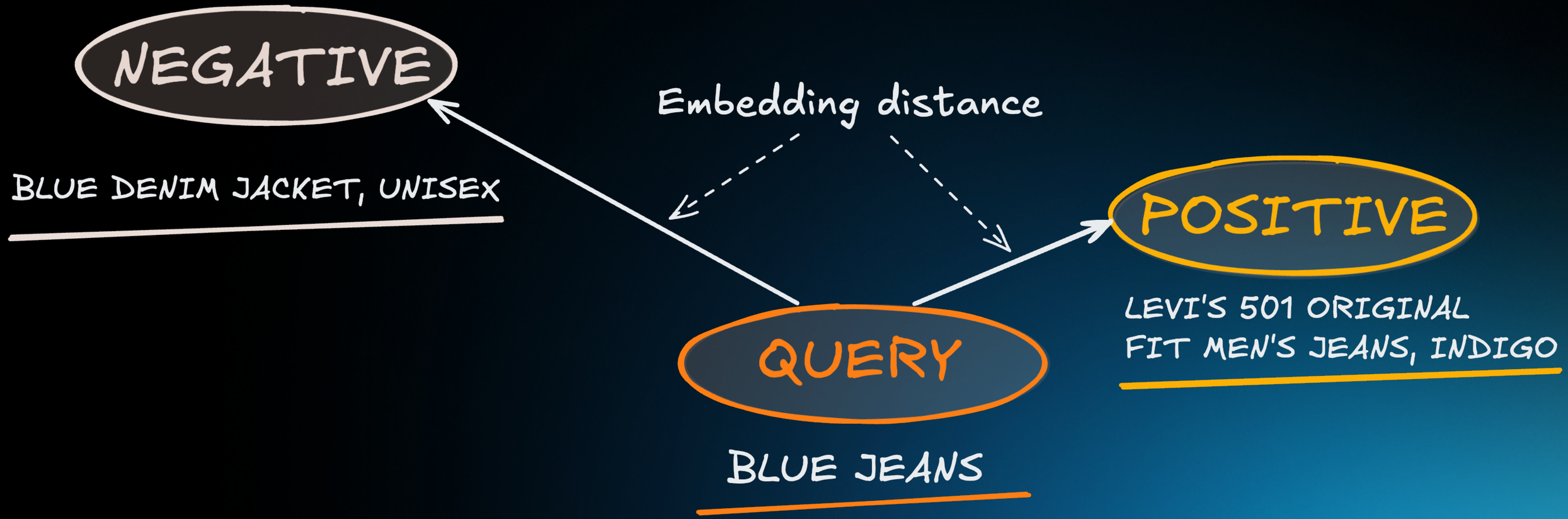


UA Navy Shirt

Multi Staged Retrieval



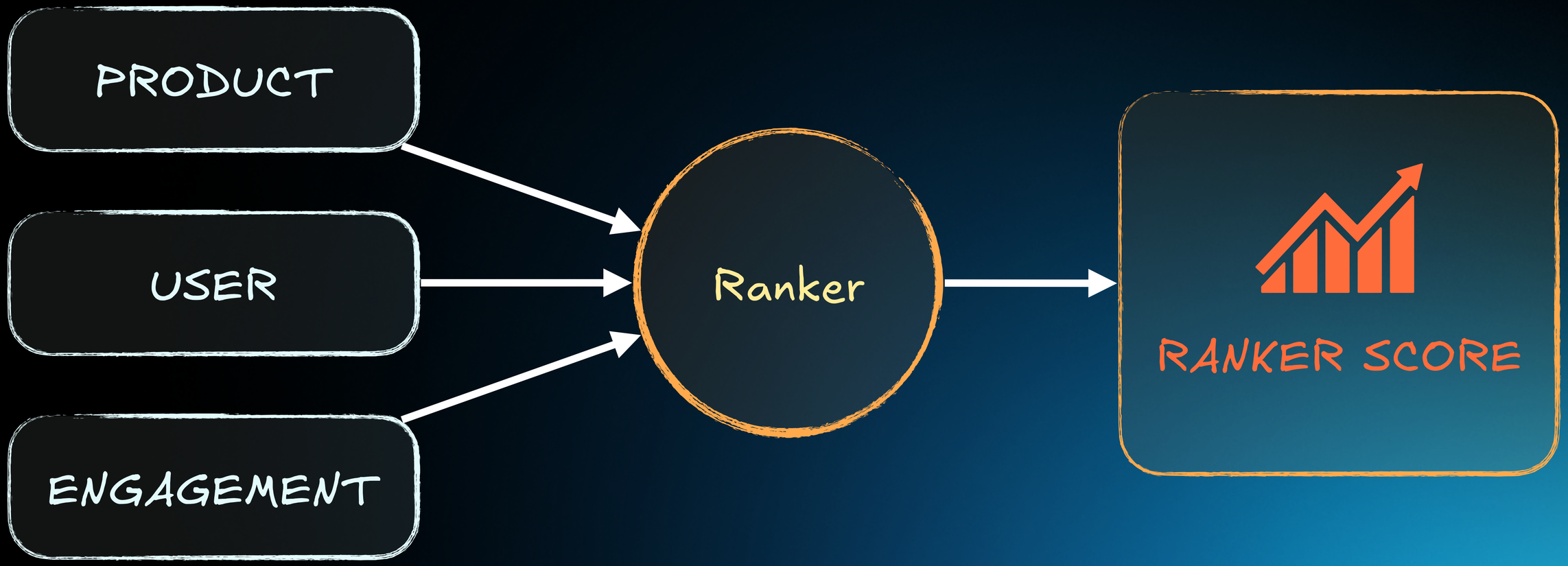
Custom Bi-Encoders



Custom Re-Ranker

QUERY	+ PRODUCT	LABEL
WATERPROOF HIKING BOOTS	MEN'S CASUAL LEATHER LOAFERS, BROWN, SLIP-ON	0
RED DRESS	ELEGANT RED COCKTAIL DRESS, KNEE LENGHT	1
LEATHER WALLET	GENUINE LEATHER BIFOLD WALLET FOR MEN, BROWN	1
MEN'S RUNNING SHOES	WOMEN'S CASUAL SANDAS, BEIGE	0

Learning to Rank



The Next Frontier: Conversational Shopping



AI Shopping Assistants: Beyond Basic Q&A

I need a gym outfit

Here is Under Armour outfit in navy that might you prefer:



Navy UA shirt



UA short



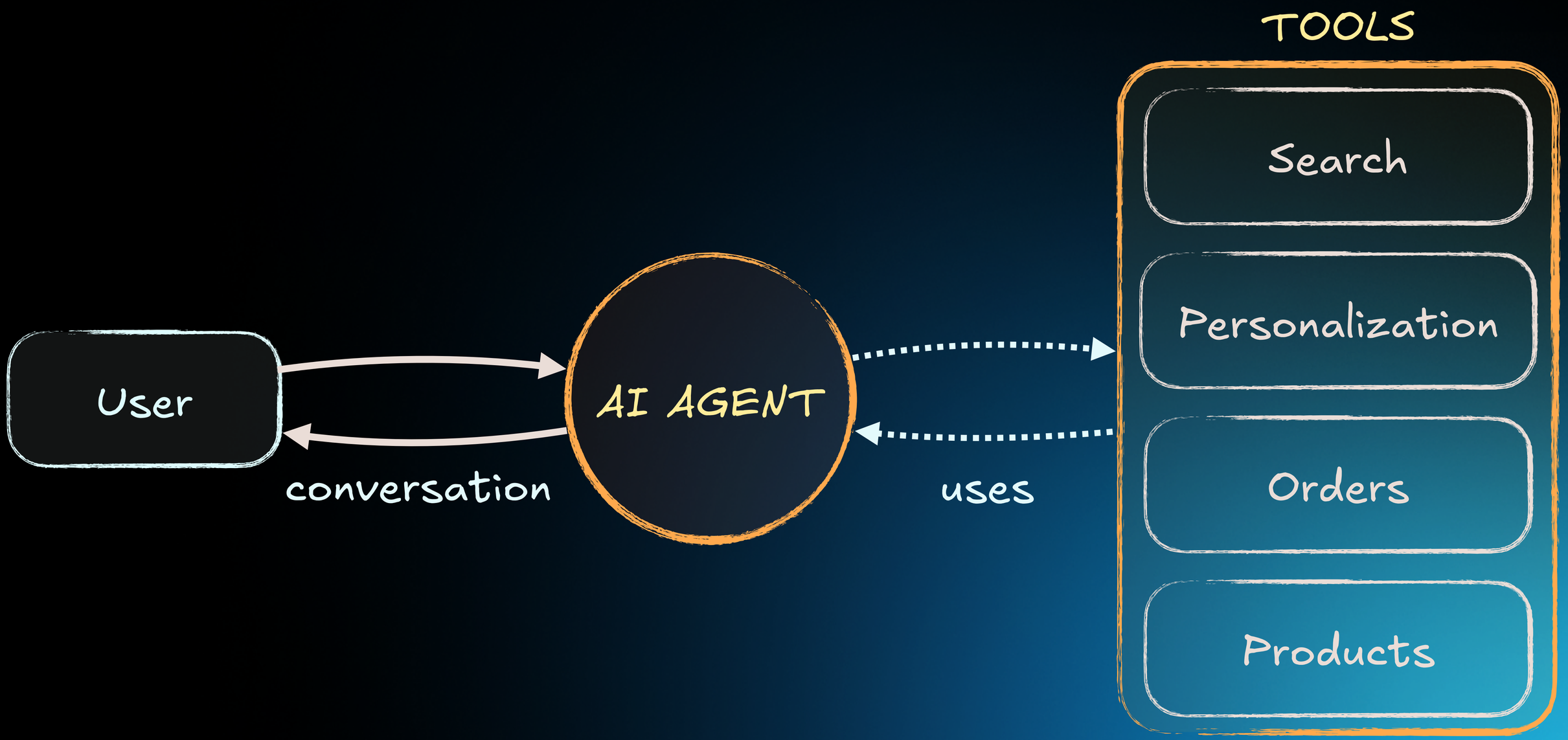
Trainers



Sport UA socks

Are shoes good for outdoor?

Conversational AI: How It Works



Key takeaways



SEMANTIC SEARCH

-

Understands What They Want



PERSONALIZATION

-

Knows who they are



CONVERSATIONAL AI

-

Interacts & Guides Them

Thank You!!!

Presentation:

