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REFINED INTERNET SEARCHES

Merilee Kern explains how AI is enabling internet search facilities that are intelligent and fast

With AI rapidly transforming key aspects of our daily personal and work lives, one significant sector being impacted is internet searches. Unlike search engines that rely on keyword

algorithms, artificial intelligence driven alternatives – both general and vertical sector specific – are emerging as a way to glean more refined and precise search results.

This shift is fuelled in part by AI's capacity to grasp context, interpret language and adapt on the basis of user interactions, resulting in an intuitive and effective search process.

The influence of AI technology on discovering information online is making the search increasingly profound, more intelligent, very much faster, and far more attuned to our unique preferences and requirements.

AI REVOLUTION “Artificial intelligence is revolutionising the internet search function by enabling engines to understand the intent behind queries, and deliver more relevant and personalised results,” says Angel Vossough, the Cofounder and CEO of AI solutions development firm BetterAI and VinoVoss.

The semantic wine search engine and recommendation system is designed to serve as a virtual sommelier.

She adds: “Traditional search engines match keywords in a query to web pages, often returning a list of links that may or may



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not be relevant. AI powered search on the other hand, goes beyond simple keyword matching, and can interpret the meaning and context of a query to locate the most useful information, even if the keywords don't exactly match."

"Of course, building these sophisticated AI search systems requires substantial investments in data, engineering talent and industry expertise," Cofounder and CTO of BetterAI and VinoVoss Arsalan Vossough explains.

He observes: "But for companies that get it right, the payoff can be huge in terms of user engagement, loyalty and revenue. Ultimately, the future of search will be defined by AI's ability to understand and anticipate user needs in ways that traditional keyword based engines simply can't match."

SEARCH MARKET "I believe that we will see increased competition and innovation in the search market, thanks to the incredible pace of AI advancement in recent years. Companies such as OpenAI, with their powerful language models and AI research breakthroughs, are well-positioned to challenge the status quo," Vossough asserts.

He continues: "However, Google remains formidable due to its massive user data, top tier engineering talent and strong AI focus. It's also important to note that search relies heavily on web crawling and indexing capabilities, in addition to query understanding and ranking. Any serious competitor will need to rival Google's web scale infrastructure."

"We are more likely to see specialised AI search engines thrive in particular niches rather than fully disrupt general web search in the near future. By focussing on specific domains, and tailoring their models and user experiences, these specialised search engines can offer more value and support for decision making," he observes.

Vossough adds: "However, the success of these specialised search engines will depend on access to high quality domain specific data and the ability to incorporate expert knowledge into artificial intelligence models."

AI SEARCH TOOLS Neural networks and deep learning models enable search engines to better understand natural language queries, and the semantic relationships between words. This powers more conversational search interfaces.

Knowledge graphs that map relationships between millions of entities can go beyond unstructured web pages. And tools can traverse these ontologies to identify deeper connections.

Personalisation engines that combine content based and collaborative filtering to build taste profiles and make individualised recommendations often use approaches such as matrix factorisation.

Multimodal AI that can search across text, images, audio and video enables innovations such as visual search and voice based interfaces. Advances in computer vision and speech recognition have unlocked new interaction paradigms.

Leading tech companies and innovative startups are leveraging these technologies to create smarter, more intuitive search experiences tailored to various domains and use cases.

In sectors ranging from e-commerce and skincare to healthcare and finance, companies are leveraging AI to understand complex user queries, curate relevant information and deliver personalised recommendations at scale.

For example, the Perplexity platform uses advanced language models to enable more

natural and conversational search experiences across a range of domains.

ONLINE COMMERCE Artificial intelligence driven searches are set to significantly impact online commerce by making search experiences more personalised and efficient.

In e-commerce, AI's ability to analyse large datasets can predict purchasing trends, optimise inventory and provide a personalised search result, leading to increased sales and customer loyalty.

AI driven semantic searches such as those at VinoVoss.com help users discover products they might miss with traditional keyword searches by increasing product visibility and sales.

Artificial intelligence can also streamline supply chain and inventory management by predicting demand trends. This will help businesses manage stock more efficiently and reduce costs.

Additionally, AI powered chatbots and virtual assistants provide 24/7 customer support by answering common queries and guiding users through the purchasing process. This will improve customer satisfaction and loyalty.

SEMANTIC SEARCH The VinoVoss semantic search engine, which Vossough's company developed, is designed to function as a virtual AI sommelier.

He says: "We are applying the same AI principles to transform how people search for and discover wine online. Our platform leverages natural language processing (NLP) and machine learning to understand the nuances of how people describe wine and what they are looking for in a bottle."

"For instance, if a user searches for 'I am looking for a fancy red wine that is bold and goes well with steak for my father's 60th birthday,' our AI system can parse the query to identify the key criteria (fancy red wine, bold flavour profile, good pairing with steak and special occasions) and return the most suitable wine suggestions, along with tasting notes, reviews and food pairing ideas," Vossough elaborates.

AI also enables highly personalised search results based on a user's demographics, browsing history, purchase patterns, ratings, and other implicit and explicit signals.

For example, by building a rich profile of each user's unique tastes and preferences, the VinoVoss AI system can curate individualised recommendations and help people discover new items that they will most likely enjoy.

Personalisation is especially valuable in domains where individual needs and preferences may vary significantly.

