Wolfram Alpha Could Answer Questions that Google Can't

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Wolfram Alpha will be launching in May.

(PhysOrg.com) -- A new search engine described as an "electronic brain" could make searching the Internet more intelligent. Called Wolfram Alpha, the search engine computes its own answers rather than looking them up in a large database, as Google and many other search engines currently do. With its computational abilities, Wolfram Alpha could lead to new types of questions, answers and computations that today's search engines can't handle.

Wolfram Alpha is being developed by Stephen Wolfram, best known as the creator of the computational software Mathematica, with more than 100 people working on the project. The designers plan to launch the search engine this May.

As Wolfram explained, 50 years ago people assumed "that one would be able to ask a computer any factual question and have it compute the answer." Building such a computer has proven to be more difficult than

originally thought, but the developers think they have finally created a system to handle semantic requests - questions asked in plain human language.

One person, Nova Spivack, the CEO of Radar Networks, which developed the semantic Web-based Twine application, had the chance to try out Wolfram Alpha. As Spivack explained, "You can ask it scientific questions and it can compute the answers for you. Even if it has not been programmed explicitly to answer each question you might ask it."

According to Spivack, Alpha can answer questions about technology, geography, weather, cooking, business, travel, people, and music. It can also solve novel numeric sequencing problems and calculus problems, and answer questions about the human genome. And, importantly, Alpha gives one answer - not one million ad-sponsored web pages.

When it comes to factual information, computing answers with algorithms is a much more compact technique than simply storing all the possible answers to all possible questions in a gigantic database. The algorithms don't take up as much space as the database, making computation more efficient for handling large amounts of factual data.

Wolfram Alpha's interface is simple, Spivack said, and provides detailed answers with text, diagrams, and graphs. However, he noted that the average user may feel overwhelmed by the overly comprehensive answers. Still, the tool could be invaluable for academics, researchers, students, government employees, journalists and a broad range of professionals in all fields who need factual answers to straightforward questions.

"Wolfram Alpha, at its heart, is quite different from a brute force statistical search engine like Google," Spivack said. "And it is not going to replace Google - it is not a general search engine," he said, adding that

content sites like Wikipedia are more similar to Alpha than Google is.

"You would probably not use Wolfram Alpha to shop for a new car, find blog posts about a topic, or to choose a resort for your honeymoon," he said. "It is not a system that will understand the nuances of what you consider to be the perfect romantic getaway, for example - there is still no substitute for manual human-guided search for that. Where it appears to excel is when you want facts about something, or when you need to compute a factual answer to some set of questions about factual data."

Because of its ability to understand natural human language (as opposed to keywords), Wolfram Alpha could potentially be integrated with the Semantic Web - a futuristic version of the Web in which computers can understand information meant for humans. Currently, Wolfram Alpha works independently from the Semantic Web. But, as Spivack suggests, it could be beneficial to one day link to other semantic applications to make it easier to share knowledge.

For now, it's too early to tell if Wolfram Alpha will revolutionize search engines, or if it's just mostly hype. In any case, the technology will likely lead to more questions about the future of computers, Spivack said.

"It is ironic that a system like Wolfram Alpha, which is designed to answer questions factually, will probably bring up a broad range of questions that don't themselves have unambiguous factual answers - questions about philosophy, perspective, and even public policy in the future (if it becomes very widely used)," he said. "It is a system that has the potential to touch our lives as deeply as Google. Yet how widely it will be used is an open question too."

More information:
Twine.com (Nova Spivack)
www.wolframalpha.com