Web search needs a shake-up

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A University of Washington computer scientist is calling on the international academic community and engineers working in industry to take a bolder approach when designing how people find information online.

In a two-page commentary titled "Search needs a shake-up," published in the Aug. 4 issue of the journal *Nature*, UW professor of computer science and engineering Oren Etzioni calls on experts to, literally, think outside the search box. The piece is being published on the 20-year anniversary of Tim Berners Lee unveiling his World Wide Web project.

Etzioni doesn't mince words. In the article, he writes that the main obstacle to progress "seems to be a curious lack of ambition and imagination."

In a phone interview, Etzioni was more conciliatory.

"The piece is meant to be provocative," said Etzioni. He acknowledged that the leading search engines have hired many smart people – including hundreds of UW graduates.

"Despite all the talent and the data that they have, I don't think that they've been ambitious enough," he said. "This piece is meant to provoke people, to challenge them to go further, to think outside the keyword search box."

Etzioni imagines a future in which someone would speak a question,

such as: "What was the score in today's Mariners game?" or "Where's the nearest restaurant that serves great sushi?" and the computer would find an answer by looking through all the data available on the Internet.

It's an ambitious goal. But last winter's Jeopardy matchup, in which IBM's Watson supercomputer trounced the best human players in the show's history, tested a computer's ability to immediately answer complex questions.

"I think the Watson Jeopardy thing is a great demonstration and has galvanized me, personally, to say just how far the technology has come," Etzioni said. "With the current state of the art in research, coupled with an engineering investment, they were able to produce a system with superhuman performance."

And as the ability to do intelligent searches increases, so does the demand.

"More and more, we're going to be accessing the web through mobile devices with tiny screens," Etzioni said. "As you do more and more of that, it becomes harder and harder to type in keywords and see long lists of blue links."

"People are going to be clamoring for more intelligent search and a more streamlined process of asking questions and getting answers," he said.

Etzioni proposes that instead of simply looking for strings of text, a web search engine would identify basic entities – people, places, things – and uncover the relationships between them. This is the goal of the UW's Turing Center, which he directs.

The Turing Center has developed an open-source tool called ReVerb that uses information on the web to determine the relationship between two

entities.

"It's an important first step, but there's a lot more to do," Etzioni said. "My hope is that people reading this article will build on it to develop better and more powerful open information extraction systems."

Scientists and students may use such tools to answer specific questions, such as defining a technical term or finding the risk factors associated with a certain medical procedure.

"Sometimes people are going to want a quick answer, sometimes they're going to want primary sources," Etzioni said, "but it's different ways of slicing and dicing the information that's out there."

Etzioni was quoted last weekend by the New York Times about Microsoft's long-term project to develop a better search experience in its Bing search engine. The article mentions Farecast, an airfare-prediction tool that Etzioni launched in 2003 and is now incorporated in Bing's airfare search engine.

"Over the next year, I think that we will see substantial progress towards intelligent search," Etzioni said. "We are seeing it today in shopping search, with Decide.com, and we are seeing it in the preliminary steps that Bing and Google are taking, but the best is yet to come."

More information: www.nature.com/nature/journal/ … 58/full/476025a.html

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