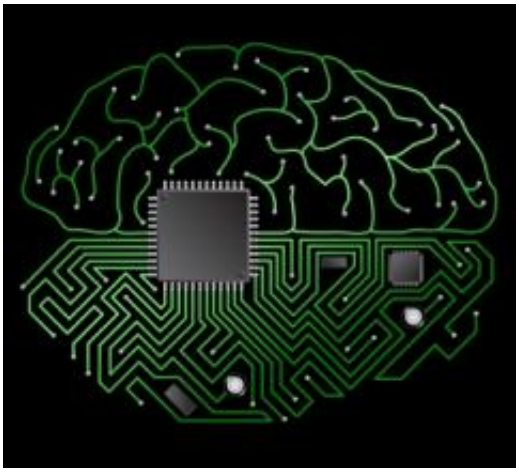
Semantic Scholar engine for scientists gets (leaps) to the points

November 3 2015, by Nancy Owano



From the Seattle-based Allen Institute for Artificial Intelligence, backed by Microsoft co-founder Paul Allen, comes a free science search engine. Oren Etzioni is CEO. The Institute is also called by its shorthand name, AI2. They launched the free service, called Semantic Scholar.

Why a new search system? What's wrong with existing tools such as PubMed and Google Scholar?

When scientists search for information and real answers, they have come to accept a common headache: With millions of research papers published every year, they confront information overload in scientific

literature search. "The more information there is online, the easier it is to overlook the most important," said *New Scientist*.

Semantic Scholar wants to ease the effort to find relevant information and they have leveraged the company's AI expertise .

The newly launched engine is making an effort to provide an understanding of a paper's content in an efficient manner. It's not just a matter of finding content on a topic but making quick sense of content available on the topic.

"No one can keep up with the explosive growth of scientific literature," said Dr. Etzioni. "Which papers are most relevant? Which are considered the highest quality? Is anyone else working on this specific or related problem? Now, researchers can begin to answer these questions in seconds, speeding research and solving big problems faster."

Nicola Jones in the weekly journal of science, *Nature/News*, said Semantic Scholar searches papers in computer science. Etzioni said the center team plans to broaden the scope within a year.

The AI2 team started with computer science in order to analyze results in topics that were familiar to them. Nonetheless, they aim to expand to other areas in time. "Medicine is a particular priority, said Etzioni in *Nature/News*. "I've talked to people who say that doctors are in the emergency room looking up things on Google Scholar on their phones," he says. "They have what I'd consider a fairly blunt instrument."

Some, but not all of, the strong features: The researcher can jump to cited papers and references and see how many researchers have cited each paper, to determine citation influence and usefulness, and can be prompted with key phrases within each paper to winnow the search further.

The Semantic Scholar works via machine reading, natural language processing and vision methods.

The team described how it can help in the search process: "Semantic Scholar crawls the web, finding all PDFs of publically available scientific papers on computer science topics, extracting both text and diagrams/captions, and indexing it all for future contextual retrieval. Using natural language processing, the system identifies the top papers, extracts filtering information and topics, and sorts by what type of paper and how influential its citations are. It provides the scientist with a simple user interface (optimized for mobile) that maps to academic researchers' expectations."

The user can also get contextual recommendations for further keyword filtering. All in all, the team wanted to give researchers the tools to quickly "separate wheat from chaff, and to find relevant papers in areas and topics that previously might not have occurred to them."

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