

Team trains Watson AI to 'chat,' spark more creativity in humans

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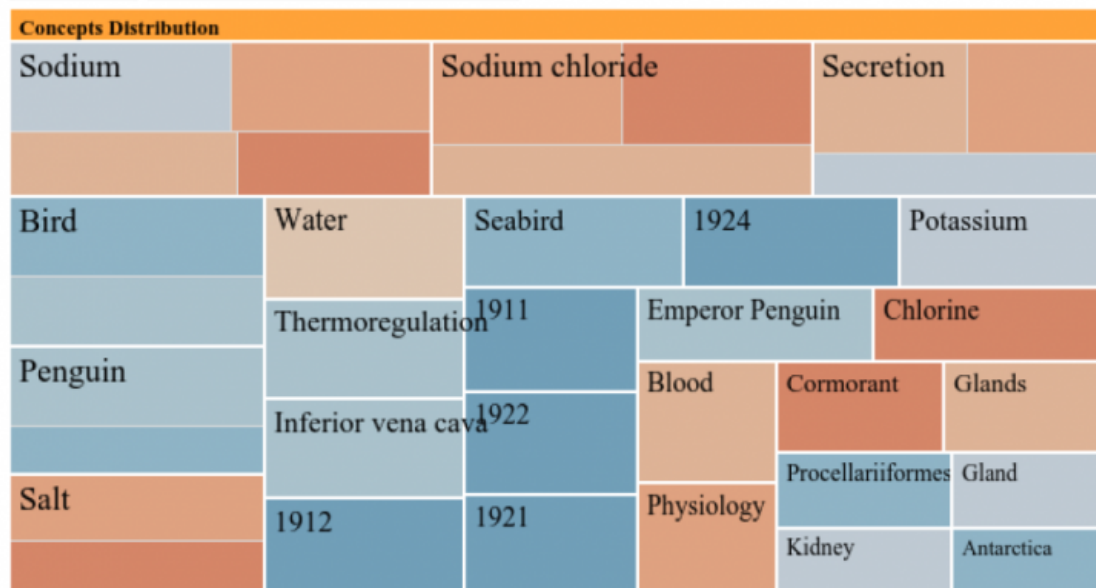
Select a domain:

fresh water

Enter your question:

How do sea birds drink water

Search Reset Answer Selection



Results from the hybrid Watson AI system are packaged in an intuitive presentation — visualized as a “treetop” where each answer is a “leaf” that varies in size based on its weighted importance. Each leaf is the starting point for a Q&A with Watson.

Georgia Institute of Technology researchers are exploring and pushing the boundaries of artificial intelligence (AI) by partnering with one of AI's most notable citizens—IBM's Watson—to advance how computers could help humans creatively solve problems in a wide variety of professions.

"Searching Google still requires a lot of search," says Ashok Goel, professor at Georgia Tech's School of Interactive Computing. "Imagine if you could ask Google a complicated question and it immediately responded with your answer—not just a list of links to manually open. That's what we did with Watson."

Watson was trained by student teams in a class at Georgia Tech using 1,200 question-answer pairs (200 for each of six teams), which allowed them to "chat" with Watson and seek out inspiration for big design challenges in areas such as engineering, architecture, systems, and computing. The teams worked with the AI to learn about solutions that could be replicated from the natural world—something known as biologically inspired design—after first feeding Watson several hundred biology articles from Biologue, an interactive biology repository. Teams then posed questions to Watson about the research it had learned.

Questions included, "How do you make a better desalination process for consuming sea water?" Animals, it turns out, have a variety of answers for this, such as how seagulls filter out seawater salt through special glands. Another question asked, "How can manufacturers develop better solar cells for long-term space travel?" One answer: Replicate how plants in harsh climates use high-temperature fibrous insulation material to regulate temperature. IBM's Watson quickly culled answers for students from the Biologue articles in a fraction of a second.

Watson effectively acted as an intelligent sounding board to steer students through what would otherwise be a daunting task of parsing a

wide volume of research that may fall outside their expertise. This approach to using Watson could assist professionals in a variety of fields by allowing them to ask questions and receive answers as quickly as in natural conversation to help with problem solving.

Georgia Tech discovered that Watson's ability to retrieve natural language information would allow a novice to quickly "train up" about complex topics and better determine whether their idea or hypothesis is worth pursuing.

The students call their technique "GT-Watson Plus," a moniker that implies the system's advanced capabilities. In addition to the ability to "chat" on a topic, this version of Watson prompts users with alternate ways to ask questions for better results. Those results are packaged in an intuitive presentation—visualized as a "treetop" where each answer is a "leaf" that varies in size based on its weighted importance. This allows the average person to navigate results more easily on a given topic.

"Researchers are provided a quickly digestible visual map of the concepts relevant to the query and the degree to which they are relevant," says Goel, who taught the course. "We were able to add more semantic and contextual meaning to Watson to give some notion of a conversation with the AI."

Goel plans to investigate other areas with Watson such as online learning and healthcare.

The work will be presented at the Association for the Advancement of Artificial Intelligence (AAAI) 2015 Fall Symposium on Cognitive Assistance in Government, Nov. 12-14, in Arlington, Va.

Provided by Georgia Institute of Technology

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