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SCS
August 29th, 2007 3:30pm

Research Topic
Machine Understanding

Research Problem
Can we make a machine understand the true intended meaning of an ambiguous request made by a user?

Problem Statement
Given a database such as Google or Sloane, construct a program which can accept search requests from the user, parse and interpret the requests, and find the information desired by the user regardless of the relationship between the user's actual request and the user's actual intention.

Database: a physical or virtual collection of elements which represent some sort of data.

Google: an online internet searching service.

Sloane: an online encyclopedia of integer sequences.

Search requests: a request to a database for a specified type of data.

Parse and interpret the requests: an automated task where a computer examines a search request and compares it to known types of information in an attempt to determine which database element or elements the user is actually interested in.

User's actual request: the text provided by the user in the search request.

User's actual intention: the information that the user actually wants.

Problem Description
While we have huge databases on the internet such as Sloane (an online encyclopedia of integer sequences) or even Google, searching these databases can result in some level of frustration because while the information searched for is probably available, the tool can have a hard time understanding what it is the user asks for. Prof. Blum calls this "Machine Understanding," and his goal is to find a way to expand the field of machine learning such that a system is able to understand inputs and infer what it is the user wants.

Computer Science Perspective
From a computer science perspective, this goes directly into machine learning and an expansion of that field to add inferences instead of direct rules. This results in the use of various algorithms or other CS constructs such as neural nets to add this capability.

Disciplines actively involved
Machine Learning; Computer Science; Machine Understanding (a new discipline).

Actively Involved Discipline: a discipline in which further research can result as a result of the successful completion of this research.

Description of Disciplines Involved
Prof. Blum indicated that this was a relatively new field of research and as such did not discuss other disciplines involved in his research. However, Machine Learning and general Computer Science concerns will clearly be inputs to this research.

References
Presenter web page:
http://www.cs.cmu.edu/~mblum/

By mnovakou
Updated mnovakou