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My **current interest** is in developing and commercializing software that takes data or text through a knowledge-based process, driven by custom algorithms, and delivers new insights to end-users. There is much scope for designing algorithms, inspired by the traditional concepts of a problem space and heuristic knowledge, which focus on one specific inferential task. Academically, the end result might not be novel or general enough to appeal to many researchers, unless the problem is so important that it trumps novelty and generality. However, this matters less if the goal is impact on end-users and commercial success.

Recent projects that I've been involved with:

- data-mining algorithms that provide well-crafted English sentences in reply to the database question "What's unique or special about this entry?" (NSF grant at CMU)
- novel algorithms for text clustering that led to founding Vivisimo Inc. in 2000 (NSF SBIR Phase 1 and 2)
- a patented advance in text clustering, called Remix, that lets end users repeatedly explore the less-dominant topics within a text collection.
- development of a trend-discovery engine for finding emerging topics within search results. (NSF SBIR Phase 1)

Selected publications

1. Concise, Intelligible, and Approximate Profiling of Multiple Classes
International Journal of Human Computer Systems, 53(3):411-436, 2000.
2. Discovery Tools for Science Applications
Communications of the ACM, 42(11):37-41, November 1999.
3. Principles of Human Computer Collaboration for Knowledge Discovery in Science
Artificial Intelligence, 107(2):335-346, 1999.
4. Scientific Discovery and Simplicity of Method
Artificial Intelligence, 91(2):177-181, 1997.
5. A New Theorem in Particle Physics Enabled by Machine Discovery
Artificial Intelligence, 82(1-2):331-339, 1996.
6. Computer Science Research on Scientific Discovery
Knowledge Engineering Review, 11(1):57-66, 1996.
7. Some Recent Human/Computer Discoveries in Science and What Accounts for Them
AI Magazine, 16(3):37-44, 1995.
8. Machine Discovery in Chemistry: New Results
Artificial Intelligence, 74(1):191-201, 1995.
9. Algebraic Reasoning about Reactions: Discovery of Conserved Properties in Particle Physics
Machine Learning, 17(1):47-68, 1994.
10. Conjecturing Hidden Entities via Simplicity and Conservation Laws: Machine Discovery in Chemistry
Artificial Intelligence, 65(2):247-280, 1994.