Tommi Jaakkola and Tomaso Poggio

Project Overview

- We wish to fundamentally improve the search for relevant information from large relatively unstructured databases
- Our goal is to develop an optimal interactive retrieval system
  - We substantially extend and integrate existing machine learning methods to solve the associated challenges
  - We design and develop proof of concept tools

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Progress Through December 2001

- Information theoretic formulation, linear time algorithms, and multiple alternative user models for eliciting user feed-back at multiple levels of abstraction
- A generally applicable stable estimation framework for accurately combining predominantly incomplete information sources
- Multi-resolution representations and algorithms for database annotation with minimum number of pre-annotated elements
- Extension and testing of multi-way filtering methods from error correcting codes

Research Plan for the Next Six Months

- Emphasis on integration of methods, implementation, and further development
- Selected tasks:
  - Design and development of flexible user interfaces to support the underlying active learning framework
  - Extensions of active learning: criteria based on stability and multi-resolution document representations
  - Formulation and exploitation of transfer across multiple related retrieval tasks