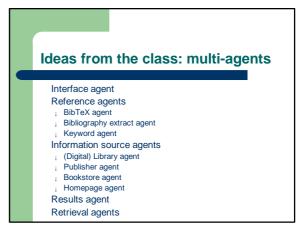


Task: Technical Reference Given: an incomplete bibliographical specification i Title i Author i Year/month i Journal (or book title) i Volume/number i Publisher i Keywords Goal: retrieve the target reference

Document Processing ; clustering & classification ; Scoring (author, SCI, institution etc.) ; Abstract extraction, document summarization Agent-assisted search using ; Taxonomy of domain and reference type ; Citation/reference relations between papers ; Author;s reputation, institution, other publications ; collaborative filtering (how to collect examples?) ; Thesaurus or synonyms Agent-assisted user requirement specification XML program as search input Automatically requesting papers from authors



Task Decomposition Discovery of paper source/abstract i Find the URL i Verify the source with BibTeX data i Transfer the file to local site Construction of technical paper library i Digital library i Collect/organize useful data Personalized information retrieval i Category-based IR i Personalized retrieval

Agent-Oriented Design A collection of task-specific agents Multi-agent architecture Agent communication ; KQML ; Eureka (KQML/ContractNet Protocols)

Useful Components

Query interface to search engines

Result extraction tool

File format conversion tools

Term vector generation

Phrase extraction

Document classification/ranking

Feature selection

Personal or group proxy

Desired Characteristics

Agent Issues:

- Useful knowledge sources
- Personalized retrieval
- Collaboration of multiple agents
- A carnivore in the information food chain

Other: Autonomous, Adaptive

System Issues:

- Extensible functionality
- Web-enabled interface
- Distributed execution (client/proxy/server)

System Design Requirement

Form project teams of four students each Define all the agents in the community Define a multi-agent architecture

; Centralized control Automatic planning

User-programmed Distributed

Agent broker w/ event-driven Behavior-based

Negotiation

Auction-based

Agent Design Requirement

Perceptions

Actions

Architecture

Reactive Deliberative

Functions performed by the agent

A sample scenario of the agent in action Submit a one-page write-up by 11/21.

Report Requirements

Overall system design

- ¡ Which agents are the participants?
- ¡ How do they work together?

Individual agent design

- Agent architecture
- ¡ Detailed function specification
- Interface with other agents

Technical issues and proposed solutions

References