Web Search Agents
- Introduction

System Description
- LASER
- WebMate

Commercial Systems

Contents
- Web Search Agents
- Retrieval System
  - IR models
  - Query operations
  - Term operations
  - Document operations
- Functions of Web Search Agents
- Performance

Web Search Agents
- Intelligent Agents
  - Systems that inhabit some complex dynamic environment,
    sense and act autonomously in this environment, and by
    doing so realize a set of goals or tasks for which they are
    designed.[Maes,95]

Web Search Agents
- Environment: Web Retrieval Condition
- Sense: Retrieval Pattern of User
- Act
  - Functions Optimization
  - Function Extraction for better result

Retrieval System (1)
- IR Model
  - Exact match
    - Boolean search
      - General commercial system
        - Boolean operation: AND, OR, NOT
        - DIALOG, STAIRS, BIDS, MIDLARS, ORBIT, LEXIS
        - Extended boolean model
      - Text pattern search
      - Inexact match
  - Probabilistic
  - Vector space
  - Clustering

Retrieval System (2)
- Query operations
  - Query: statements of information put to the system by users
    - Breaking query to its constituent elements/terms
- Term operations
  - Stemming
    - By reducing words to a common root form
  - Stoplist
  - Conflating related terms
  - Weighting
    - Assign values to indexing or query terms
Retrieval System (3)
- Document operations
  - Searching
  - Sorting
  - Ranking
  - Rank retrieved documents using term information
- Clustering
  - Cluster similar documents in a document space
- Display

Functions of Web Search Agents (1)
- Query Expansion
  - Relevance Feedback
    - Use the information from previous searches
    - Modify query to use the information
    - Pseudo Relevance Feedback
  - Thesaurus
    - synonyms
- Document Expansion
  - Use similar documents

Functions of Web Search Agents (2)
- Function Optimization
  - Finding optimal function
  - Finding optimized parameter values
- User Profile
  - Learning user pattern
- Result classification(or clustering)
- Result visualization
- Summarization of retrieved document

Performance
- Execution
- Storage
- Retrieval
  - Precision
    \[ R = \frac{\text{Number of relevant documents retrieved}}{\text{Total documents retrieved}} \]
  - Recall

Question
- ¿Cuál es el agregado formal ? (Agent) ¿Cuál es el agregado formal ? (Agent)