

Information Retrieval - Discussion Topics

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Reading assignments are aimed at building a narrative of past, present and future of IR. Each reading is assigned a lead who will drive the discussion in class. You need not cover the entire text during the discussion. You are given a specific topic (see below) to discuss in the class. A good discussion has a nice flow. Ensure you have a good story to tell. Outline the talk when you start, then take the talk through each of the outlined items and finally summarize the talk by reiterating the key points. The assigned lead will do the outlining and summarizing. Rest of the class is expected to join the discussion as and where they have something to share. At the end of every talk, there will be an in-class quiz.

Introduction to Semantic Search

Welcome to the world of semantic search. Here, we review basic search techniques and introduce semantic search.

Discussion Items

What is Semantic Search?

Discussion Lead: Prateek

Keyword Search Vs. Structured Search

Discussion Lead: Ashish

Popular Tools for Keyword and Structured Search

Discussion Lead: Shoraj

Knowledge bases - What are they? Why do we need them?

Discussion Lead: Anubhab

RDF Triplets and SPARQL

Discussion Lead: Vanshi

References

Data Types and Common Datasets, Search Paradigms

Reference: Section 2.1 and 2.2 of BBH.

Keyword Search in Text, Structured Search in Knowledge Bases

Reference: Section 2.2, 4.1 and 4.2 of BBH.

You may refer to the w3c website

(<https://www.w3.org/TR/rdf-concepts/section-Concepts> and

<https://www.w3.org/TR/rdf-sparql-query/introduction>) for more information.

Query Understanding

Query Understanding - What is Conceptualization? Why is it a hard problem?

Reference: Query Understanding through Knowledge-Based Conceptualization.

Discussion Lead: Prateek

Query Understanding - An Introduction to Temporal Context

Reference: Understanding Temporal Query Intent.

Discussion Lead: Ashish

Query Understanding - The Idea of Generic Intent Representation

Reference: Generic Intent Representation in Web Search.

Discussion Lead: Shoraj

Topics in Semantic Search

What is the Role of Embeddings in Semantic Search?

Efficient estimation of word representations

Discussion Lead: Anubhab

word2vec - Introduction and Limitations

Efficient estimation of word representations

Discussion Lead: Vanshi

How do Ontologies Improve Search?

OWL Primer at w3c

Discussion Lead: Prateek

A Gentle Introduction to OWL

OWL Primer at w3c

Discussion Lead: Ashish

Entity Containment Graphs

Section 4.3 of Rhode's Thesis

Discussion Lead: Shoraj

Constructing Knowledge bases - Introduction and Preliminaries

<http://pages.cs.wisc.edu/~anhai/papers/kcs-sigmod13.pdf>

Discussion Lead: Anubhab

Constructing Knowledge bases - Approach

Section 3 of <http://pages.cs.wisc.edu/~anhai/papers/kcs-sigmod13.pdf>

Discussion Lead: Vanshi