IV Year I Semester

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Code: 17CS732

INFORMATION RETRIED SYSTEMS
(DEPT ELECTIVE-III)

OBJECTIVES

1. To provide the foundation knowledge in information retrieval.
2. To equip students with sound skills to solve computational search problems.
3. To appreciate how to evaluate search engines.
4. To appreciate the different applications of information retrieval techniques in the Internet or Web environment.
5. To provide hands-on experience in building search engines and/or hands-on experience in evaluating search engines.

UNIT - I: Introduction to Information Storage and Retrieval System: Introduction, Domain Analysis of IR systems and other types of Information Systems, IR System Evaluation. Introduction to Data Structures and Algorithms related to Information Retrieval: Basic Concepts, Data structures, Algorithms

UNIT- II: Inverted files: Introduction, Structures used in Inverted Files, Building Inverted file using a sorted array, Modifications to Basic Techniques.

UNIT -III: Signature Files: Introduction, Concepts of Signature Files, Compression, Vertical Partitioning, Horizontal Partitioning.

UNIT- IV: New Indices for Text: PAT Trees and PAT Arrays: Introduction, PAT Tree structure, algorithms on the PAT Trees, Building PAT trees as PATRICA Trees, PAT representation as arrays.

UNIT- V: Stemming Algorithms: Introduction, Types of Stemming Algorithms, Experimental Evaluations of Stemming to Compress Inverted Files

UNIT- VI: Thesaurus Construction: Introduction, Features of Thesauri, Thesaurus Construction, Thesaurus construction from Texts, Merging existing Thesauri

OUTCOMES

• Identify basic theories in information retrieval systems
• Identify the analysis tools as they apply to information retrieval systems
• Understands the problems solved in current IR systems
• Describes the advantages of current IR systems
• Understand the difficulty of representing and retrieving documents.
• Understand the latest technologies for linking, describing and searching the web.

TEXT BOOK:

1. Frakes, W.B., Ricardo Baeza-Yates: Information Retrieval Data Structures and Algorithms, Prentice Hall, 1992.
2. Modern Information Retrieval by Yates Pearson Education. 3 Information Storage & Retrieval by Robert Korfhage – John Wiley & Sons.

REFERENCES:

1. Kowalski, Gerald, Mark T Maybury: Information Retrieval Systems: Theory and Implementation, Kluwer Academic Press, 1997.
2. Information retrieval Algorithms and Heuristics, 2ed, Springer