CHAPTER 56

TECHNOLOGY
COMPUTER SCIENCE AND ENGINEERING

Doctoral Theses

616. AKSHI KUMAR
Web Mining Framework for Ad-Hoc Retrieval and Structuralizing User-Centric Web-Data.
Supervisor : Prof. M P S Bhatia
Th 18210

Abstract

This work dynamically generate a context-based quantifier of term significance during retrieval which can be utilized as an indicator of document relevancy and ultimately contribute to a document rnak score. It relies on a fundamental Contextual Toning technique that analyses term context in documents to derive document term significance. Other contributions of this research include utilization of an Information-theory based context detection algorithm and exploiting novel proximity heuristics to find the closest distance between query terms. Also, technique for the combination of document and query term weights has been investigated.

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617. BIJENDRA KUMAR
Request Based Bandwidth Allocation Protocol in Video-On-Demand Services.
Supervisor : Dr. Satish Chand
Th 18206

Abstract

In this thesis, efficient bandwidth allocation protocols for

minimizing the user's waiting time in Video-on-demand services have been discussed. The Video-on-demand has applications in several fields including, Movie-on-demand, Remote learning, Information dissemination, Tele-shopping, tele-medicine, Cable TV, Interactive Video games, Catalogue browsing and remote learning. Major parameters for evaluation of a Video-on-demand protocol are (i) Bandwidth allocation to video (ii) User's waiting time and (iii) Buffer storage at client site.

Contents

1. Video-on-Demand. 2. Literature review. 3. Request based data delivery in Video on Demand Services. 4. Patching based broadcasting scheme for video on demand. 5. Slotted patching scheme for video on demand. 6. Segmented patching broadcasting protocol for video data. 7. Conclusion and furture scope.

618. JINDAL (Rajni)
Algorithms for Mining Frequent Patterns from the Data.
Supervisors : Prof. Asok De and Prof. P C Saxena
Th 18205

Abstract

This thesis considers the problem of finding frequent patterns from the datasets. It deals with the algorithmic aspect of frequent pattern mining more focus have been on the data mining algorithms for mining frequent patterns form the data rather than the overall KDD process. It stresses upon the basic principles for modeling data and designing algorithms to fit these models to data also takes into account the problem of mining frequent patterns according to a given set of user specified dataset filtering constraints.

Contents

1. Introduction. 2. Mining frequent patterns from transaction data. 3. Mining frequent access patterns from the web data. 4. Mining frequent phrase patterns of keywords from text data. 5. Mining frequent patterns from image data. 6. Mining frequent patterns with constraints. 7. Conclusion and future work.

619. KHURANA (Sandhya)
Handling Attacks on Routing Protocols in Ad hoc Networks.
Supervisors : Dr. Neelima Gupta
Th 18258

Abstract

This work contributes towards mitigating attacks on routing protocols in as hoc networks as provides solutions to handle three types of attacks namely blackhole attack, wormhole attack and attack due to selfish nodes. Network performance is known to degrade significantly in presence of blackhole and selfish nodes. Wormhole tunnels have a severe impact on the neighborhood discovery process which forms the backbone of routing in *MANETs*. Its presents an end-to-end solution to alleviate the effect of wormhole attack. This solution also improves upon the existing solutions in terms of overheads and infrastructure requirements. and an algorithm to find a path that is farthest from the nodes under the danger of attack.

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620. SRIVASTAVA (Rajeev)

Image Modeling and its Applications Using PDEs (Partial Differential Equations Formalism)

Supervisors : Dr. D Roy Choudhury, Dr. J R P Gupta and Dr. Harish Parthasarathy

Th 18204

Abstract

In this work, two fundamental problems of image processing are addressed which include image restoration and image zooming. The partial differential equation (PDE) based formalism has been used for developing effective, accurate and simple models for restoration and zooming of images arising in various real life applications such as medical imaging, digital holography, motion blurring, astronomy, fluorescence microscopy and synthetic aperture radar (SAR) imaging. The PDE-based image modeling approaches are investigated and new models are presented for image restoratin and image zooming tasks. In additin to image restoration, the other problem addressed is related with zooming or interpolation of medical images.

Zooming refers to magnification (zoom-out) and shrinking (zoom-in) operations of images.

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