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Advances in Science & Technology

Emerging Trends and Applications in Mobile Ad Hoc Networks (MANETs)

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Abstract

The chapter "Emerging Trends and Applications in Mobile Ad Hoc Networks" presents the current state of the art of MANET and the problems and challenges related to routing, security, power management, location management and multimedia over an ad hoc networks. MANET is a type of ad hoc network which changes the node's position and location and configure itself on the fly. As there is no fixed infrastructure available for MANET with nodes being mobile, routing and security becomes a very important issue. In addition, we have also explained the various emerging applications and future trends of MANET.

Keywords: Ad Hoc Networks, Network Topologies, Bandwidth, Quality of Services, Security, Protection, Routing, Congestion, Eavesdropping, Snooping

Ad Hoc Networks

Ad Hoc means "**for this purpose**". Ad Hoc Networks are often used to deduce the solutions which are developed instantly for any specific task or purpose. In Data Communication and Computer Networking, an ad hoc network is considered as a network connection which is established for only one session and requirement of any router or a wireless base station is not necessary.

Ad hoc networks are just like wireless Local Area Networks (LANs). The devices/nodes communicate with each other directly instead of relying on any base station or any access point as in wireless LANs for data transfer and transfer co-ordination. Each device participates in routing activity, by determining the best route using the routing algorithms and forwarding data to other devices via this route.

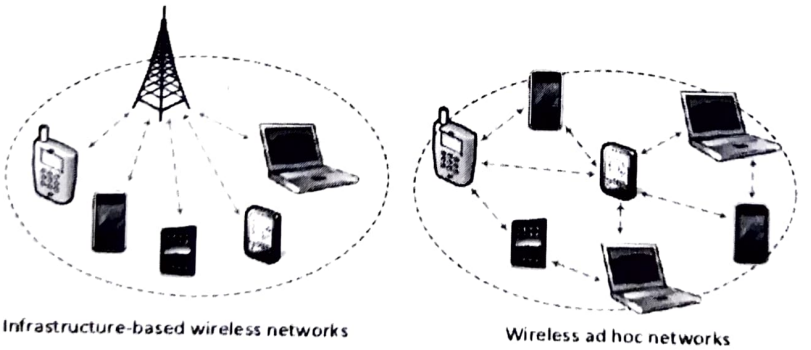

Fig: Comparison between Infrastructure-Based Wireless Networks and Wireless Ad Hoc Networks

Types of Ad Hoc Networks

Ad hoc networks are classified into several types depending upon the nature of their applications. The most prominent ad hoc networks that are commonly incorporated are as follows:-

1. MANET (Mobile Ad Hoc Networks)
2. VANET (Vehicular Ad Hoc Networks)
3. WSN (Wireless Sensor Networks)

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Awareness and Use of Electronic Databases in National University of Study and Research in Law, Ranchi

Saket Kumar, Dr. Ashish Kumar Sinha & Dr. Vijayakumar Mallapa

Abstract

Libraries play vital role in development of academic activities in our society. With the proliferation of electronic databases as one of the major electronic information resources, the role of libraries has changed a lot. Electronic databases are assisting libraries users in providing authentic, current and relevant information for the purpose of their academic and research activities. The present study provides an overview about the awareness, use, purpose, impact and barriers of electronic databases among the users of NUSRL, Ranchi. A detailed result of this survey is discussed and suggestions are made to improve and enhance the usage of electronic databases. Based on the findings the study concluded that electronic database or e-database is an essential tool for empowering the teaching/learning/ research activities.

Keywords: Electronic Information Resources, Electronic databases, E-database, ICT, NUSRL.

Food

Processing and Preservation

Deepak Mudgil
Sheweta Mudgil

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PREFACE

Food science and technology is an evolving field with large scope from career view point. In the last decade, many educational organizations including university departments, institutions, colleges and deemed universities have started undergraduate, postgraduate and doctorate degree programmes related to Food Technology, Food Processing, Food Engineering and allied courses such as Dairy Technology, Post-Harvest Technology, Foods and Nutrition, Agricultural and Food Process Engineering etc. Ministry of Food Processing Industries of India (MFPI) is also emphasizing in development of food technology related departments at university and college level. Food preservation is an age old concept and now-a-days food processing is flourishing as an important and interesting topic of discussion and research. This is the main reason for its inclusion as fundamental/core subject in B.Tech, M.Tech, & M.Sc. course curriculum of Food Technology, Food Processing, Food Engineering and allied courses such as Dairy Technology, Post-Harvest Technology, Foods and Nutrition, Agricultural and Food Process Engineering etc. The book **"Food Processing & Preservation"** covers topics such as Heat Preservation and Processing, Cold Preservation and Processing, Freezing and Frozen Storage, Concentration, Drying & Dehydration, Water Activity in Food Preservation, Baking, Food Irradiation, Microwaves Processing, Chemical Preservation, High hydrostatic Pressure Processing, Pulsed Electric Field Processing, Pulsed Light & Ultrasound Processing, Extrusion Processing, Dielectric, Ohmic and Infrared heating, Enzymes in Food Processing, Membrane Processing, Solar Energy in Food Processing. We wish to acknowledge authors for their contribution in the preparation of this book. We also appreciate the assistance and support provided by Scientific Publishers staff members. Last but not least we must thank our family for their love, support and encouragement.

Deepak Mudgil
Sheweta Mudgil

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INTERNATIONAL SYMPOSIUM ON 5G & BEYOND FOR RURAL UPLIFTMENT

In twinning activity between BIT Sindri & IIT(ISM) Dhanbad Jointly with the IEEE 5G summit and 35th GISFI Standardization Series Meeting (GSSM)

33. Measurement and analysis of nearness among different images using varied probe functions

Priyanka Srivastava, Department of Computer Science & IT, Jharkhand Rai University, Ranchi, India
priyanka12.1987@gmail.com

ABSTRACT

The focus of this paper is on a tolerance space-based approach to image analysis and correspondence for measuring the nearness among images. The basic problem considered is extracting perceptually relevant information from groups of objects based on their descriptions. Object descriptions are represented by feature vectors containing probe function. This article calculates the Hausdorff Distance (HD), Hamming Measure (HM), tolerance Nearness Measure (tNM) within few set of images of different categories and the result has been analyzed. All of them applies near set theory to images applying Content Based Image Retrieval (CBIR). The set of images are of bus, dinosaur. The motivation behind this work is the synthesizing of human perception of nearness for improvement of image processing systems. The desired output must be similar to the output of a human performing the same task..

Index Terms— *Hausdorff Distance (HD), Hamming Measure (HM), tolerance Nearness Measure (tNM), Content Based Image Retrieval (CBIR), probe functions.*

INTRODUCTION

This paper highlights on perceptual nearness and its applications. The observation of the perceptual nearness combines the basic understanding of perception in psychophysics with a view of perception found in Merleau-Ponty's work [1]. The sensor signals gathered by our senses helps in determining the nearness of objects of an image. The calculation includes the distance measurement among images for perceptual resemblance based on features of the image itself. The features are termed as probe function of the images. The analysis tries to correlate the results with those of human sensation where the values are integrated by the mind. A human sense shown as a probe, determines the physical characteristics of objects in our environment.

Image Resemblance is widely used various fields. Few of them includes query by image, management and search through digital archives of images and videos in personal, commercial and public domain image archives over the internet. Medical applications, its analysis, archive and searching within database uses the concept of image resemblance. Application in "image registration" problem where similarity between images used to determine similarity between an image and its transformation. Image quality assessment where the goal is to assess the similarity (or differences) within a well-positioned image and an inaccurate image. Classification and resemblance of pictures based on content based resemblance between pair of pictures.

The sensed physical characteristics of an object are identified with object features. It is our mind that identifies relationships between object feature values to form perceptions of sensed objects. It is conjectured that perception, i.e. human perception of nearness, can be quantified through the use of near sets by providing a framework for comparing objects based on object descriptions. Objects that have similar appearance (i.e., objects with similar descriptions) are considered perceptually near each other. Sets are considered near each other when they have "things" (perceived objects) in common. Specifically, near sets facilitate measurement of similarity between objects based on feature values (obtained by probe functions) that describe the objects. This approach is similar to the way humans perceive objects and as such facilitates the creation of perception-based systems.Three different distance has been measured among images which includes Hausdorff Distance (HD), Hamming Measure (HM), tolerance Nearness Measure (tNM).

HM calculates the distance between two metrics, the result is 0 if the corresponding bits are the same, otherwise, the result is 1. It is a metric which evaluates the number of bits that differ between two metrics. It is

Amina Omrane
Sudin Bag *Editors*

New Business Models in the Course of Global Crises in South Asia

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Contents

Chapter 3
Engagement of Higher Education Teachers During COVID-19 Pandemic in India

Amrita Majumdar and Sudipta Majumdar

3.1 Introduction

The outbreak of COVID-19 has impacted the world economy, and education sector is not an exception of this. Change is inevitable, and this pandemic taught the whole world to adopt the changes and explore the opportunities. As a result, the education sector has also faced a quick and sudden transformation and opted digital mode to ensure the continuous teaching–learning, research, community engagement, etc. by using different online tools and techniques which has added struggle and stress both to the work–life balance of the teachers. When the students' learning was on stake, teachers have taken up the challenge. They adopted digital mode of teaching–learning pedagogy and started delivering lectures online for the students. To attain this modern education technology and be equipped with them, teachers need to develop new learning environment for all the stakeholders including teacher, student, parent, administrator, etc. In Indian context, mostly, the traditional methods were followed in higher education institutes to fulfill the teaching–learning criteria. But this pandemic has forced to adopt the digital alternatives to make the teaching–learning takes place in an uninterrupted way. This sudden embracement of online teaching–learning pedagogy has changed the traditional teaching pedagogy to blended teaching–learning pedagogy, wherein students are learning both in online live classes and also in offline mode, where they are going through the contents as uploaded by the teachers. The teachers are adopting both synchronous and asynchronous ways of teaching pedagogy for implementing this.

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