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### Invited Papers

**Pixel Domain and Compressed Domain Image Retrieval Features**  
Gerald Schaefer

**An Introduction to Content-based Image Retrieval**  
Gerald Schaefer

**Efficient Processing of Semi-Stream Data**  
M. Asif Naeem

### Security and Access Control

**Analyzing the Security Techniques used in LTE Advanced and their evaluation**  
Iftikhar Rasheed, Asjad Amin, Mahwish Chaudhary, Sadaf Bukhari, Muhammad Rizwan, Kashif Ali

**Identity Based Email Sender Authentication for Spam Mitigation**  
Sufian Hameed, Tobias Kloht, Xiaoming Fu

**Secure DNS from amplification attack by using Modified Bloom Filters**  
Uzma Sattar, Talha Naqash, Muhammad Raheel Zafar, Kashif Razzaq, Faisal bin Ubaid

**Minimizing Non-coordinated Interference in Multi-Radio Multi-Channel Wireless Mesh Networks (MRMC-WMNs)**  
Sadiq Shah, Hameed Hussain, Muhammad Shoaib

**Investigating the impact of Group Mobility Models over the On-Demand Routing Protocol in MANETs**  
Muhammad Shoaib, Nasru Minallah, Shahzad Rizwan, Sadiq Shah, Hameed Hussain
Applying Authentication Tests to Discove Man-in-the-Middle Attack in Security Protocols
Shahabuddin Muhammad

Secure Multi-hop Routing Protocols in Wireless Sensor Networks: Requirements, Challenges and Solutions
Nouman M Durrani, Nadeem Kafi, Jawwad Shamsi, Waleej Haider, Asad M Abbsi

EXPLOITING CROSS-OVER DISTANCE TO OPTIMIZE ENERGY IN WIRELESS SENSOR NETWORKS
Muhammad Adeel, Zulfiqar Ali, Muhammad Saqib, Muhammad Tauseef, Muhammad Muaz

A Hybrid Approach for Preventing Black and Gray Hole Attacks in MANET
Hizbullah Khattak, Nizamuddin

VANET Thread Based Message Trust Model
Abdul Rehman, Asad Ali, Riaz ul Amin, Attique Shah

Research Review of Development of Novel Routing Algorithms for Mobile Ad-hoc Networks
Muhammad Asif Khan, Sahibzada Zakiuddin

Robust Image Watermarking In Contourlet Domain Using Multi Objective Genetic Algorithm
M. Mubeen, S.A.M. Gilani, K. Zafar

Secure and Privacy Enhanced Email System as a Cloud Service
Amna Joyia, Abdul Ghafoor, Maryam Sajjad, Muhammad Qaisar Choudhary

Semantic Web, Ontologies

Publishing Institutional Repositories Metadata on the Semantic Web
Humaira Farid, Sharifullah Khan, Muhammad Younus Javed

Keyword And Form Based Semantic Search Tools And Their Usability
Aqeel Haider, Arif Raza

Ontology for Feature Based Selection of Web Development Tools
Neelam Mukhtar, Sara Shahzad, Mohammad Abid Khan, Shah Nazir

Semantic Web, Ontologies and Rules/ Web services/ Quality of Service Issues

A Declarative Web Services Composition Framework
Mohsen Rouached

Semantic Web, Ontologies and Rules/Distributed information systems/ Web services/ Quality of Service Issues

A Goal Oriented Approach for Web Services Selection and Composition
Sana Baccar, Mohsen Rouached, Mohamed Abid

Data Warehouses and Data Mining/- Artificial Intelligence and Decision Support Systems

Data Analysis, Quality Indexing and Prediction of Water Quality for the Management of Rawal Watershed in Pakistan
Maqbool Ali, Ali Mustafa Qamar

Data Management
THE TECNOLOGICAL BUSINESS INTELLIGENCE CAPABILITIES AND BUSINESS INTELLIGENCE SYSTEM FLEXIBILITY - THE UNDERLYING RELATIONSHIP
KOKIN Sergey, WANG Tienan

A Robust Join Operator to Process Streaming Data in Real-Time Data Warehousing
M. Asif Naeem

Data Mining in Insurance Claims (DMICS): Two-way mining for extreme values
Sofia Aftab, Waseem Abbas, Muhammad Musa Bilal, Tauqir Hussain, Muhammad Shoib, Syed Hamza Mehmood

Telecommunication Subscribers’ Churn Prediction Model Using Machine Learning
Saad Ahmed Qureshi, Ammar Saleem Rehman, Ali Mustafa Qamar, Aatif Kamal, Ahsan Rehman

Customer Segmentation and Analysis of a Mobile Telecommunication Company of Pakistan using Two Phase Clustering algorithm

Handwritten Digit Recognition Through Wavelet Decomposition and Wavelet Packet Decomposition
Muhammad Suhail Akhtar, Hammad A. Qureshi

Application of Machine Vision for Performance Enhancement of Footing Machine Used in Leather Industry of Pakistan
Umar Farooq, Muhammad Usman Asad, Faqqa Rafiq, Ghulam Abbas, Athar Hanif

Quality of Service Issues

ASSESSMENT OF CAPACITY AND PERFORMANCE OF DECENTRALIZED EMIS ACTIVITIES IN DEVELOPING COUNTRIES
Sajjad Ahmad Bhatti, Khawaja Muhammad Saqib, Asim Riaz Mohammad Ali, Awais Adnan

Adaptive Relay Selection Technique for Cooperative Network over Nakagami Fading Channels
Sadia Jabeen Siddiqi, Ammara Humayun, Humaira Rehman, Imran Khan, Sadaqat Jan

Performance of Double Threshold Energy Detection in Cooperative-Cognitive Networks over Nakagami Fading Channels
Ansar Ul-Haq, Mian Bilal Ayub, Junaid Iqbal, Nagina Zarin, Sajjad Ali, Imran Khan

Reliable Communication Protocol for Inter-Vehicular Network
Yasir Malik, Stefan D. Bruda, Bessam Abdulrazak, Usman Tariq

USER SUPPORT APPROCHE FOR “GLOBAL USERS SUPPORT STANDARDIZATION AND ESTABLISHMENT ORGANIZATION (GUSSEO)”
Muhammad Shah, Attique Shah, Aftab Ahmed, Abdul Rehman

Analyzing Impact of Video Codec, Encapsulation Methods and Streaming Protocols on the Quality of Video Streaming
Afaq Iqbal, Fahim Arif, Nasru Minallah

Artificial Intelligence and Decision Support Systems

Design and Implementation of a Two Wheel Self Balancing Robot with a Two Level Adaptive Control
Ammar Wasif, Danish Raza, Waqas Rasheed, Zubair Farooq, Syed Qaseem Ali

Teeter-Totter in Testing
Rafaqut Kazmi, Rao Muhammad Afzal, Imran Sarwar Bajwa
A Neural Network Controller for Cartesian Plotter
Umar Farooq, Faiza Rafiq, Muhammad Amar, Ghulam Abbas, Muhammad Usman Asad

Brain Emotional Learning Based Fuzzy Inference System
Mahboobeh Pasrapoor, Urban Bilstrup

Information Retrieval and Natural Language Processing

Automatic Event Recognition and Annotation in Business Requirement Specifications
Sofia Tahir, Imran Sarwar Bajwa

Scope Resolution of Logical Connectives in NL Constraints
Shahzad Akbar, Imran Sarwar Bajwa, Saleem Malik, Ali Samad

Named Entity Recognition and Normalization in Tweets Towards Text Summarization
Saima Jabeen, Saajid Shah, Asma Latif

Representing History in Graph-Oriented NoSQL Databases: A Versioning System
Arnaud Castelltort, Anne Laurent

Bibliomining on North South University Library Data

Genetic Programming Based Degree Constrained Spanning Tree Extraction
Zaheer Babar, Muhammad Waqas, Zahid Halim, Muhammad Arshad Islam

Application of Adaptive Neuro-fuzzy Inference System for Dam Inflow Prediction using Longrange Weather Forecast
Jehangir Ashraf Awan, Deg-hyo Bae

Bangla Printed Word Recognition Using Histogram Based Approach and Fuzzy Logic
Anoti Deyala, Putul Saha, Rashedur M Rahman

Omer Ajmal, M. M. Saad Missen, Tazeen Hashmat, M. Moosa, Tenvir Ali

Secure Automotive Telematics System (SATS)

Constraints Programming

Speeding up SOR Solvers for Constraint-based GUIs with a Warm-Start Strategy
Noreen Jamil, Johannes M’uller, Christof Lutteroth, Gerald Weber

Cyclomatic Complexity: The Nesting Problem
Mir Muhammad Suleman Sarwar, Sara Shahzad, Ibrar Ahmad

Quadratic Optimization for User Interface Layout
Noreen Jamil

Image Analysis and Image Processing
A Weighted Matrix Algorithm for Vision Based Lane Following in Autonomous Navigation
Umar Farooq, Jason Gu, Muhammad Amar, Muhammad Usman Asad, Faiqa Rafiq

Blue Eyes Technology
Mizna Rehman Mizna, Mamta Bachani, Sundas Memon

A Survey of Automatic Lip Reading Approaches
Waqqas ur Rehman Butt, Luca Lombardi

Subband Configuration of Adaptive Synthesis Filter Banks for Image Compression
Abdul Nadeem, Yangyu Fan

Towards Decision Support Model for Ubiquitous Agriculture
Waleej Haider, Aqeel-ur-Rehman, Nouman M Durrani

Prediction of Minerals in Rock Images using Markov Logic
Juvaria Tahseen, Imran Sarwar Bajwa, M. Asghar Hashmi

Distributed information systems/ Web services

A Web Service Based Integration Model of Data-Providing Sources
Mehedi Masud, Mohsen Rouached

PERSONAL INTEGRATED PROCESS BASED SOFTWARE ARCHITECTURE DESIGN AND EVALUATION
Waqar Ul-Hasnain

E-Learning, eCommerce, e-Business and e-Government/ Information Content Security

An Efficient and Secure Mobile Phone Voting System
Mohib Ullah, Arif Iqbal Umar, Noor ul Amin, Nizamuddin

Extending HTML5 Local Storage to Save More Data; Efficiently and in More Structured Way
Syed Zagham Naseem, Fiaz Majeed

A Study on Trends of Mobile Application usage and their Distribution Methods in Pakistan
Muhammad Ateeq, Muhammad Ateeq, Imran Sarwar Bajwa

Official Digital Currency
M. Shoaib, M. Ilyas, M. Sikandar Hayat Khiyal

Mood-based E-commerce: A New Approach for Sub-personality-based Marketing
Toshihiko Yamakami

Servicenics Approach: A Social Service Engineering Framework
Toshihiko Yamakami

Maintenance Support in Open Source Software Projects
Arif Raza, Luiz Fernando Capretz, Faheem Ahmed

Open Innovation - A Phased Adoption Model and its Application to German SMEs
Matthias Birkle, Heiko Gewald
IWDM Workshop papers

*(2n-1)-point Binary Approximating Scheme*
Ghulam Mustafa, Abdul Ghaffar, Mehwish Bari

**Data Warehouse Enhancement Manipulating Materialized View Hierarchy**
Sajid Ullah Khan, Waqas Mahmood Shah, Muhammad Haris, Rashid Naseem

**A Data Mining Based Spam Detection System for YouTube**
Rashid Chowdury, Md. Nuruddin Monsur Adnan, G.A.N. Mahmud, Rashedur M Rahman

**Web Application Fact Extractor (WAFE)**
Imran Zahoor, Omaiza Maqbool, Rashid Naseem

**Load Balancing through Task Shifting and Task Splitting Strategies in Multi-core environment**
Hameed Hussain, Muhammad Bilal Qureshi, Muhammad Shoaib, Sadiq Shah