FRIDAY 3 FEBRUARY 2012

Tutorials

Venue : E & ECE Department

9.00 -12.00

Tutorial 1

Wireless Communications: An Information Theoretic Perspective

Prof. Ajit K. Chaturvedi, IIT Kanpur

Tutorial 2

The Next Generation Broadband Wireless Communication Network 3GPP-LTE - (Advanced)

Prof. S.S. Das, IIT Kharagpur

Venue : E & ECE Department

14.00-17.00

Tutorial 3

Convergence in Networks using the NGN

Prof. Subrat Kar, IIT Delhi

Tutorial 4

Information Flow in Wireless Networks

Prof. Srikrishna Bhashyam, IIT Madras

18.30

NCC 2012 INAUGURATION

Venue : Gargi Auditorium

Chief Guest : *Prof. A. Paulraj, Professor Emeritus,Stanford University, USA*

SATURDAY 4 FEBRUARY 2012

9.00-10.00 **Plenary Talk**

On Scaling Wireless Capacity

Prof. A. Paulraj, Professor Emeritus, Stanford University, USA

Venue : Vikramshila V-3 / Gargi Auditorium

Sa1.CR **Venue : Vikramshila Gargi Auditorium**

10.10-11.25 **Cognitive Radio**

	Paper No
⊙ A Cooperative Secondary User Localization Based Primary User Localization Method for Cognitive Radio Networks *Praful Deolal Mankar; Sant Pathak; R. V. Rajakumar*	1569521545
⊙ A Normal Factor Graph Approach for Co-operative Spectrum Sensing in Cognitive Radio *Debasish Bera; Sant Pathak; Indrajit Chakrabarti*	1569521559
⊙ Malicious User Suppression for Cooperative Spectrum Sensing in Cognitive Radio Networks Using Dixon's Outlier Detection Method *Sanket Sanjay Kalamkar; Adrish Banerjee; Ananya Roychowdhury*	1569521999
⊙ Threshold Optimization of Finite Sample Based Cognitive Radio Network *Ajay Singh; Manav Bhatnagar; R. K. Mallik*	1569511899
⊙ Optimal MTM Spectral Estimation Based Detection for Cognitive Radio in HDTV *Manjunath Kashyap Jataprolu; Ravinder D. Koilpillai; Srikrishna Bhashyam*	1569521439

Session Chair : ***Prof. B. Sundar Rajan, I.I.Sc., Bangalore***

Sa1.IVP1 **Venue : Vikramshila Maitrayee Auditorium**

10.10-11.25 **Image and Video Processing -1**

⊙ Segmentation of Two Dimensional Electrophoresis Gel Image Using the Wavelet Transform and the Watershed Transform *Ratnesh Singh Sengar, Ashutosh Kumar Upadhyay, Manjit Singh,Vikram M.Gadre*	1569520517
⊙ Real-Time Stereo Video Decoding and Rendering on Multi-Core Architecture *Chirag Pujara; Viswanath Veera; Amit Kumar; Naresh Reddy; Vidhu Tholath*	1569501977
⊙ A High-Performance Architectural Design for Motion Estimation in MPEG-4 *Nikhil Guhagarkar; Shaik Rafi Ahamed*	1569504765
⊙ Timely Delivery of Video Data in Staircase Scheme *Satish Chand; Hari Om*	1569505015

Session Chair : ***Prof. Shubhashish Choudhuri, IIT, Bombay***

Sa1.OCN **Venue : Vikramshila V - 3**

10.10-11.25 **Optical Communications and Networking**

- Decoy-pulse Protocol for Frequency-Coded Quantum Key Distribution — 1569506595
  Sudeshna Bhattacharya; Pradeep Kumar
- Group Velocity Dispersion and Nonlinearity Tolerance of Micro-ring Resonator Based Filter Demodulator for DQPSK Signal — 1569519549
  Raunaq Agarwal; Shweta Mishra; Ranjan Gangopadhyay; Sumanta Gupta
- Comparison of Semiclassical and Quantum Descriptions of Saturated Erbium Doped Fibre Amplifiers (EDFA) — 1569521617
  Karthikeyan A Rajarathinam; Harishankar Ramachandran
- XPM Induced Crosstalk in Dispersion Compensated Fiber Links for DPSK and OOK Modulation Format — 1569521683
  Anamika; Vishnu Priye
- Comprehensive Design Methodology for Control & Data Plane in Wavelength-Routed Optical Networks — 1569526953
  Gitanjali Chandwani Manocha; Debasish Datta

Session Chair : ***Prof. Subrat Kar, IIT, Delhi***

Sa1.WA1 **Venue : Vikramshila V - 4**

10.10-11.25 **Wireless Access -1**

- A Dirty Paper Coding Scheme for the Multiple Input Multiple Output Broadcast Channel — 1569521447
  Balakrishna Saradka; Srikrishna Bhashyam; Andrew Thangaraj
- Fair Rate Allocation, Routing, and Stream Control Scheduling in MIMO-Based WMNs — 1569521509
  Matadeen Bansal; Aditya Trivedi
- On the Data Performance in Tactical WLAN with Signal Strength Ratio Based Handoff Algorithms — 1569518463
  Sanjay Dhar Roy; Anup Sadhukhan
- Power and Delay Optimal Policies for Wireless Systems — 1569521579
  Satya Kumar V; Anusha Lalitha; Vinod Sharma

Session Chair : ***Prof. Rajan Gangopadhyaya, LNMIT, Jaipur***

11.25-11.45 **Tea Break**

Sa2.WCC **Venue : Vikramshila Gargi Auditorium**

11.45-13.30 **Wireless Cooperative Communication**

Invited Talk - 1 :

Physical Layer Network-Coding for Bidirectional Wireless Relaying and Latin Squares

Prof. B. Sundar Rajan, Department of ECE, IISc, Bangalore

- Optimal Relay Placement for Coverage Extension in LTE-A Cellular Systems — 1569502079
  Suman Khakurel; Mahima Mehta; Abhay Karandikar
- On the Relay Gain of the Fading Relay Channel with Finite Input Constellations — 1569512609
  Vijayvaradharaj Muralidharan; B. Sundar Rajan
- Beamforming and Combining Based on Estimated Channels in Cooperative Relay Networks — 1569520893
  Arti Mk; R. K. Mallik; Robert Schober
- Full CSI Selection Combining for Multi-Relay Cooperative Diversity Systems — 1569521779
  M.D. Selvaraj; Ranjan K. Mallik
- On the Achievable Rate of AWGN Relay Channel with Finite Input Constellations — 1569512953
  Nirmal Shende; B. Sundar Rajan

Session Chair : ***Prof. Adrish Banerjee, IIT, Kanpur***

Sa2.IVP2 **Venue : Vikramshila Maitrayee Auditorium**

11.45-13.30 **Image and Video Processing -2**

Invited Talk - 2 :

How to Touch an Object Defined by a Point Cloud

Prof. Subhashish Choudhuri, EE, IIT Bombay

- Low Complexity Bi-Directional Image Quality Assessment for Digital Image Stabilization — 1569521025
  Sangwoo Ahn; Lin-bo Luo; Jong-Park Kim; Jong-Wha Chong

- Segmentation of Camera-Trap Tiger Images Based on Texture and Color Features — 1569521361
  Pavan Reddy; R Aravind
- A Novel Method for Vessel Detection Using Contourlet Transform — 1569521923
  Farnoosh Ghadiri; Seyed Mohsen Zabihi; Hamid Reza Pourreza; Touka Banaee
- Universal Syllable Tokeniser for Language Identification — 1569521515
  Subhadeep Dey; Hema Murthy

Session Chair : ***Prof. V.M. Gadre, IIT Bombay***

Sa2.Cod1 **Venue : Vikramshila V - 3**

11.45-13.30 **Coding - 1**

- Four-Phase Orthogonal Code Design for MIMO Radar Systems — 1569521689
  G.V.K. Sharma, K. Raja Rajeswari
- Additional Check Node to Improve the Performance of LDPC Codes in the Error Floor Region — 1569521817
  Kuntal Deka; Alentattil Rajesh; Prabin Bora
- Regenerating Codes: a Reformulated Storage-Bandwidth Trade-off and a New Construction — 1569521435
  Govinda M Kamath; P Vijay Kumar
- A High Coding Gain and Low Decoding Complexity STBC for Four Transmit Antennas — 1569521975
  Nidhi Sharma; Manav Bhatnagar; Monika Agrawal

Session Chair : ***Prof. S.L. Maskara***

Sa2.WA2 **Venue : Vikramshila V - 4**

11.45-13.30 **Wireless Access - 2**

Invited Talk - 3 :

To be announced (from BroadCom)

- A Waiting-time Based Backoff Algorithm in the IEEE 802.11 Based Wireless Network — 1569512539
  T. Alekhya; B. Mounika; E. Jyothi; B.N. Bhandari
- Delay Optimal Scheduling of a Discrete Time Batch Service Queue for Point-To-Point Channel Code Rate Selection — 1569521493
  Vineeth Bala Sukumaran; Utpal Mukherji

- Joint Routing, Scheduling and Power Control for Multihop MIMO Networks — 1569521531
  Harish Vangala; Rahul Meshram; Vinod Sharma
- VCG Auction Based Optimal Allocation for Scalable Video Communication in 4G WiMAX — 1569501385
  Shreyans Parakh; Aditya Jagannatham

Session Chair : ***Prof. V.Sinha, LNMIT, Jaipur***

13.30-14.30 **Lunch Break**

Sa3.NP1 **Venue : Vikramshila Gargi Auditorium**

14.30-16.15 **Network Performance - 1**

Invited Talk - 4 :

Cloud Computing
Vinay Dua, Cisco India Ltd.

- Public-Private Separation in Linear Network-Coded Simultaneous Multicast and Unicast — 1569521329
  Amaranath Alapati; Avinash Krishnakumar; Andrew Thangaraj
- An Investigation Into Traffic Analysis for Diverse Data Applications on Smartphone — 1569521091
  Sudhir Kumar Baghel; Kirti Keshav; Venkateswara Manepalli
- Analysis and Performance Comparison of Uniform and Mixed Service Policy for Vacation Queue — 1569521325
  Dibyajyoti Guha, S.S. Pathak
- Performance Analysis and Redundancy Implementation of Open Source Embedded Router — 1569521501
  Vaibhav Gupta; Mohit Vajpeyee; Subrat Kar; T. Raga Naresh Kumar
- A Novel Crosslayer-aware Transmission Queue Adaptation System Using Multiple Physical Links — 1569512211
  Soma Bandyopadhyay; Shameemraj Nadaf

Session Chair : ***Prof. D. Datta, IIT, Kharagpur***

Sa3.IVP2 **Venue : Vikramshila Maitrayee Auditorium**

14.30-16.15 **Image and Video Processing -3**

Invited Talk - 5 :

Wavelets and filter banks - Challenges as I see them and our Endeavours
Prof. V. M. Gadre, EE. IIT Bombay

- High Throughput Pipelined Architecture for Fast 2-D 4×4 Forward Integer Transform of H.264 — 1569518247
  Rohan Mukherjee; W Prasad; P Dheeraj; Indrajit Chakrabarti; Somnath Sengupta
- Combined Online and Offline Assamese Handwritten Numeral Recognizer — 1569519867
  Siva reddy G; Puspanjali Sharma; S. R. Mahadeva Prasanna; Chitralekha Mahanta; L N Sharma
- On the Performance of IP and Mobile Based Automatic Speaker Verification — 1569502211
  Nibedita Nandan; Goutam Saha
- Outlier Removal and Fusion Techniques for Robust Speaker Recognition Applications — 1569518541
  Israj Ali, Goutam Saha

Session Chair : ***Prof. P.K. Biswas, IIT, Kharagpur***

Sa3.WT1 **Venue : Vikramshila V - 3**

14.30-16.15 **Wireless Transmission -1**

Invited Talk - 6 :

Antennas for Wireless Communication: A Big Revolution in 125 years
Prof. Debatosh Guha, Inst of Radio Physics and Electronics, University of Calcutta

- Achievable Rate Region of Gaussian Broadcast Channel with Finite Input Alphabet and Quantized Output — 1569521019
  Suresh Chandrasekaran; Saif Khan Mohammed; A. Chockalingam
- Capacity Improvement for Finite-Input Constellation Using Unitary Precoding for Two User Channels — 1569521519
  Hari Ram; Arun Ayyar; K Giridhar
- Underwater Acoustic Communications: Design Considerations At the Physical Layer Based on Field Trials — 1569521879
  Sameer Babu.T.P, R. David Koilpillai, P. Muralikrishna

- Performance Analysis of MRC Receiver with Channel Estimation Error and CCI in Nakagami-m Fading Channels — 1569521731
  G Aruna; Pravas Ranjan Sahu

Session Chair : ***Prof. Ajit K. Chaturvedi, IIT, Kanpur***

Sa3.WSAN1 — **Venue : Vikramshila V - 4**

14.30-16.15 — **Wireless Sensor and Ad-hoc Networks -1**

Invited Talk - 7 :

Sensor Webs: Application Architecture and Development Platforms
Mr. Prateep Misra, Tata Consultancy Services

- Multi-Sensor Spatio-Temporal Vector Prediction History Tree (V-PHT) Model for Error Correction in Wireless Sensor Networks — 1569499853
  Aman Jaiswal; Aditya Jagannatham
- Testbed Based Throughput Analysis in a Wireless Sensor Network — 1569506467
  A. Anand Kumar; P. Gireesan Namboothiri; Sarang Deshpande; Sreejith Vidhyadharan; Krishna M. Sivalingam; S.A.V. Satya Murty
- N-LEACH, a Balanced Cost Cluster-Heads Selection Algorithm for Wireless Sensor Network — 1569512293
  Rajiv Tripathi, Yatindra Nath Singh, Nishchal K. Verma,
- Majority Logic Fusion of Censored Decisions in Wireless Sensor Networks with Rayleigh Fading — 1569512335
  Chinmoy Kundu; Sumit Kundu; Gianluigi Ferrari; Riccardo Raheli

Session Chair : ***Prof. Abhay Karandikar, IIT, Bombay***

16.15-16.30 — **Tea Break**

Sa4.WT2 — **Venue : Vikramshila Gargi Auditorium**

16.30-17.45 — **Wireless Transmission 2**

- Joint Estimation of Synchronization Impairments in MIMO-OFDM System — 1569520553
  Renu Jose; K.V.S. Hari
- Low-Complexity Near-Optimal Signal Detection in Underdetermined Large-MIMO Systems — 1569512627
  Tanumay Datta; Nagaraja Srinidhi; A. Chockalingam; B. Sundar Rajan

- Channel Estimation At the Transmitter in a Reciprocal MIMO Spatial Multiplexing System — 1569521431
  Bharath Bettagere Nagaraja; Chandra R. Murthy
- Closed Form BER Expressions for BPSK OFDM Systems with Fractional Timing Offset and Carrier Frequency Offset — 1569506815
  Uma Mahesh; Ajit K. Chaturvedi
- A Conjugate Direction Search Algorithm for ML Estimation of Frequency Offsets in OFDMA Uplink — 1569513181
  Rajyavardhan Reddy P.; Thafasal Ijyas; S. M. Sameer

Session Chair : ***Prof. Neelesh Mehta, I.I.Sc., Bangalore***

Sa4.SpP1 **Venue : Vikramshila Maitrayee Auditorium**

16.30-17.45 **Speech Processing - 1**

- Subword Based Approach for Grapheme-To-Phoneme Conversion in Bengali Text-To-Speech Synthesis System — 1569512847
  Krishnendu Ghosh, K. Sreenivasa Rao
- Segmentation of TV Broadcast News Using Speaker Specific Information — 1569517067
  Sreenivasa Rao; Ketan N.Pachpande; Ramu Reddy Vempada; Sudhamay Maity
- Assessing Vowel Quality for Singing Evaluation — 1569519923
  Mayank Vibhuti Jha; Preeti Rao
- Faster BIC Segmentation Using Local Speaker Modeling — 1569520891
  Ruchir Travadi; Goutam Saha

Session Chair : ***Prof. Hema Murthy, IIT, Madras***

Sa4.SiP1 **Venue : Vikramshila V - 3**

16.30-17.45 **Signal Processing - 1**

- The OFDM System Based on Discrete Cosine Harmonic Wavelet Transform — 1569521711
  Suma M.N.; Narasimhan S.V.; Buddhi Kanmani
- On the Alpha-Mu Autocorrelation and Probability Density Functions- Field Trials and Validation — 1569521571
  Aravind Krishnan; Ugo Dias; Michel Daoud Yacoub

- Almost Exact Threshold Calculations for Covariance Absolute Value Detection Algorithm — 1569521055
  Vidyadhar Upadhya; Devendra Jalihal
- Compressed Acquisition of Correlated Signals — 1569503785
  Jeedigunta Satyanarayana; Ramakrishnan G.A.

Session Chair : ***Prof. V.U. Reddy, C. R. Rao Advanced Institute of Mathematics, Statistics and Computer Science, University of Hyderabad Campus, Hyderabad***

Sa4.WSAN2 — **Venue : Vikramshila V - 4**

16.30-17.45 — **Wireless Sensor and Ad-hoc Networks - 2**

- Optimal Deployment of Impromptu Wireless Sensor Networks — 1569512671
  Prasenjit Mondal; Kolar Purushothama Naveen; Anurag Kumar
- 6PANview: Application Performance Conscious Network Monitoring for 6LoWPAN Based WSNs — 1569521553
  Abhay Rao Bhadriraju; Sutasom Bhaumik; Lohith Y.S.; Brinda M.C.; Anand S.V.R; Malati Hegde
- On the Underwater Wireless Network Clustering — 1569522353
  Priyatosh Mandal; Swades De
- A Mobility Factor Based Path Selection Scheme for Mobile Ad-hoc Networks — 1569509659
  Sajal Sarkar, Raja Datta

Session Chair : ***Prof. T.S. Lamba, Jaypee University, Solan, HP***

SUNDAY 5 FEBRUARY 2012

9.00-10.00 — **Plenary Talk**

Introduction to Cryptology including Visual Cryptography
Prof. Bimal Roy, Director, Indian Statistical Institute, Calcutta

Venue : Vikramshila V-3 / Gargi Auditorium

Su1.WT3 — **Venue : Vikramshila Gargi Auditorium**

10.10-11.25 — **Wireless Transmission - 3**

Invited Talk - 8 :

Synthesis of Waveforms from Zero-Lag Cross-Correlation Matrix Under Practical Constraints
Prof. V. U. Reddy
C. R. Rao Advanced Institute of Mathematics, Statistics and Computer Science, University of Hyderabad Campus, Hyderabad

- Digital Video Broadcast Services to Handheld Devices and A Simplified DVB-H Receiver Subsystem — 1569501519
  Manas Kumar Hati,Tarun K. Bhattacharyya
- Amplitude Normalization in Blind Modulation Classification — 1569522067
  Gaurav Phukan; Prabin Bora; Alentattil Rajesh; Ramesh Chaveli
- Performance of Pulse Shape Modulation of UWB Signals Using Composite Hermite Pulses — 1569521789
  S. Mishra, A. Rajesh and P. K. Bora

Session Chair : ***Prof. K.V.S. Hari, I.I.Sc., Bangalore***

Su1.SpP2 **Venue : Vikramshila Maitrayee Auditorium**
10.10-11.25 **Speech Processing - 2**

- IITKGP-MLILSC Speech Database for Language Identification — 1569512769
  Sudhamay Maity; Anil Vuppala; Sreenivasa Rao; Dipanjan Nandi
- Architecture of a Teleconference System Based on Minimum Audible Angle — 1569521513
  Harikrishnan Potty; Rajbabu Velmurugan; Preeti Rao
- Speaker Verification Using Sparse Representation Over KSVD Learned Dictionary — 1569521477
  Haris B C; Rohit Sinha
- Pronunciation Variation Across Different Dialects for English: A syllable-Centric Approach — 1569521487
  Rajan Golda Brunet; Hema A Murthy

Session Chair : ***Prof. K.S. Rao, IIT, Kharagpur***

Su1.AP **Venue : Vikramshila V - 3**
10.10-11.25 **Antenna and Propagation**

- A New Land Mobile Satellite Channel Model with Nakagami-q Distribution — 1569518867
  Sayantan Hazra; Abhijit Mitra
- Strip Lined - Truncated Ground Plane for Flat Response of Miniaturized UWB Patch Antenna — 1569521453
  Robin Raju; Chandan Asokan
- Comparative Study of a CRLH TL Based Zeroth Order Resonant Antenna — 1569500859
  Sheeja K. L; Prasanna Kumar Sahu; Santanu Kumar Behera
- Analysis of Shorted Plate Folded Feed L-slot Cut Microstrip Antenna — 1569505469
  Amit Deshmukh; Sumit Ranka; Foram Shah; Mitali Parekh; Kamala Prasan Ray

Session Chair : ***Prof. Debatosh Guha, Inst. of Radio Phy. & Electronics, Uni. of Calcutta***

Su1.GT **Venue : Vikramshila V - 4**

10.10-11.25 **Green Telecommunication**

- Rural Base Station Powering
  Sriram Narayanamurthy; Sneharaj Ramdaspalli; Ashok Jhunjhunwala; Bhaskar Ramamurthi
- Optimal Power Allocation for a Renewable Energy Source — 1569521059
  Abhinav Sinha; Prasanna Chaporkar
- Quantifying the Improvement in Energy Savings for LTE eNodeB Baseband Subsystem with Technology Scaling and Multi-Core Architectures — 1569517839
  Boyapati Hari Krishna; R. V. Rajakumar; Saswat Chakrabarti
- Energy Saving in OFDMA Cellular Systems Using Base-Station Sleep Mode: 3GPP-LTE a Case Study — 1569521865
  Priyangshu Ghosh; Suvra Sekhar Das; Swetha Naravaram; Prabhu Chandhar
- GREEN-IT: An Approach to Energy Savings Using Energy Aware Network Management System — 1569521445
  Santosh Chaudhari; Subhash Nottath; Mani Subramanian; Hema Murthy

Session Chair : ***Prof. Srikrishna Bhashyam, IIT, Madras***

11.25-11.45 **Tea Break**

11.45-13.00 **Poster Session**

P1	Iterative Random Beamforming for MIMO-OFDM Systems *Neeraj Shrivastava; Aditya Trivedi*	1569501919
P2	Detection and Selective Destruction of Bacteria Colony At THz Frequencies *Faruk Ali; Sudhabindu Ray*	1569508043
P3	Cooperative Spectrum Sensing with Censoring of Cognitive Radios in Rayleigh Fading Channel *Srinivas Nallagonda; Sanjay Dhar Roy; Sumit Kundu*	1569515497
P4	Diversity Order VS. Rate in an AWGN Channel *Anusha Gorantla; Vinod Sharma*	1569520947
P5	Energy Efficient Scheduling in 4G Smart Phones for Mobile Hotspot Application *Kirti Keshav; Venkata Indukuri; Venkataram Pallapa*	1569521107
P6	Quantized Modulation Diversity for 64-QAM *Anilkumar C.D.; Sant Pathak*	1569521405
P7	Implementing Fast and Simple FEC for Ultra High Frequency Radio *Ankita Pramanik; Rekha Ashok Baradol*	1569521787
P8	Energy Level Performances of Data Services in Random WSN with Rayleigh Fading *Arnab Nandi; Sumit Kundu*	1569512629
P9	An Energy Efficient WSN with Cooperative Relaying Technique *Musthyala Harish; Srikanth Bhavana; Ratnajit Bhattacharjee*	1569521575
P10	VoIP Scheduling and Radio Resource Usage Estimation - Effect on Best Effort Capacity *Priyangshu Ghosh; Suvra Sekhar Das; Prabhu Chandhar*	1569521883
P11	RAID Technology for Secured Grid Computing Environments *Nallabelli Sandeep Chaitanya*	1569493349
P12	Energy Cost Analysis of Data Plane and Control Plane for 3GPP-LTE *Pankaj Gupta; R. V. Rajakumar; C.S Kumar*	1569511873
P13	Validation of a DiffServ Based QoS Model Implementation for Real-Time Traffic in a Test Bed *Sruti Gan Chaudhuri; Cheruvu Kumar; Ratnam V RajaKumar*	1569513109

P27 Characterization of Infant Cries Using Spectral and Prosodic Features 1569517901
Ramu Reddy Vempada; Siva Ayyappa Kumar B; Sreenivasa Rao

P28 Ordered Orthogonal Matching Pursuit 1569521819
Deepak Baby; Sibi Raj B Pillai

P29 Analysis of Stub Loaded Rectangular Microstrip Antenna 1569505461
Amit Deshmukh; Priyanka Baxi; Charmi Kamdar; Bhagyesh Vora; Kamala Prasan Ray

P30 Designing a Patch System to Interface Between HF and VHF Radios 1569509631
Rajorshee Raha

P31 A Compact Narrow Band Microstrip Bandpass Filter with Defected Ground Structure(DGS) 1569512173
Arjun Kumar,Kumar Goodwill, Ashwini K. Arya, M. V. Kartikeyan

P32 Analysis of Modified Microstripline and Its Application 1569521745
Durairaj Packiaraj; Kj Vinoy; Ramesh M; Ajit T Kalghatgi

P33 Throughput Analysis for Dynamic Spectrum Allocation in Cognitive Radio Networks 1569500349
Prabhjot kaur, Moin Uddin and Arun Khosla

12.45-14.00 **Lunch Break**

Su2.NP2 **Venue : Vikramshila Gargi Auditorium**

14.00-15.15 **Network Performance - 2**

⊙ On the Departure Process of Jitter Buffer in TDMoIP 1569521719
S.Usha Rani, R.Manivasakan

⊙ A Context Aware Collaborative Service Provisioning System for Mobile-Commerce 1569517083
Subramanyam M; Venkataram Pallapa

⊙ A Method of Developing an Agent Based Ubiquitous Node Monitoring Protocol 1569505111
Sarada Gochhayat; Venkataram Pallapa

⊙ Implementation of DSP Lab on a Cloud 1569521831
Vaidyula Sarath Chandra; Anup Kulkarni; Prahlad Kishore; Kavitha Gopal;

⊙ Port-based Traffic Verification as a Paradigm for Anomaly Detection 1569521365
Vadiraj Panchamukhi; Hema Murthy

Session Chair : ***Prof. Swadesh De, IIT, Delhi***

Su2.Cod2 **Venue : Vikramshila Maitrayee Auditorium**

14.00-15.15 **Coding -2**

- On Concentric Permutation Code Based Vector Quantizer Design — 1569504929
  Mohit Sharma; Alentattil Rajesh; Prabin Bora
- Adaptive Selection of Search Space in Look Ahead Orthogonal Matching Pursuit — 1569517973
  Sooraj Ambat; Saikat Chatterjee; K.V.S. Hari
- Burst Error Correction Using Partial Fourier Matrices and Block Sparse Representation — 1569520751
  N Mukund Sriram; B. S. Adiga; K.V.S. Hari

Session Chair : ***Prof. Ranjan K. Mallik, IIT, Delhi***

Su2.VRC **Venue : Vikramshila V - 3**

14.00-15.15 **VLSI and RF Circuits**

- Resistive Feedback LNA for Radio Ultra-Wideband Receivers — 1569504761
  Mostafa Yargholi, Asieh Parhizkar Tarighat, Mahrokh Maghsoodi
- Resistive Feedback LNA with Dual Band Notch Filter for Suppression of WLAN Signals in UWB Receivers — 1569508927
  Mostafa Yargholi, Asieh Parhizkar Tarighat
- Optimization of Phase Noise in a PLL Circuit Design — 1569512079
  Nupur Sood; Pinaki Sen
- SAR Analysis Using DICOM Based Voxel Model — 1569521567
  Faruk Ali; Sudhabindu Ray
- Design, Analysis and Fabrication of Rectenna for Wireless Power Transmission - Virtual Battery — 1569521679
  S Vinoth Kumar; Pragati Patel; Ashok Mittal; Asok De

Session Chair : ***Prof. Ratnajit Bhattacharya, IIT, Guwahati***

Su2.WSAN3 **Venue : Vikramshila V - 4**

14.00-15.15 **Wireless Sensor and Ad-hoc Networks - 3**

- Localization Using Stochastic Proximity Embedding for Underwater Acoustic Sensor Networks — 1569521687
  Ameer PM; Lillykutty Jacob

- Optimized Power Saving Mechanism for Wireless Ad Hoc Networks — 1569521899
  Ankur Sharma; Abhishek Gupta; Arun Misra
- Reliable Data Transmission in Sensor Networks Using Compressive Sensing and Real Expander Codes — 1569517043
  Swanand Kadhe; SandhyaSree Thaskani; Girish Chandra; B. S. Adiga
- Queue Stability Measurements for Energy Harvesting Sensor Nodes — 1569521511
  Vinutha Prashanth; Prabhakar T. V.; Prakruthi Keshavamurthy; Jamadagni

Session Chair : ***Prof. C.S. Kumar, IIT, Kharagpur***

15.15-15.30 **Tea Break**

Su3.Cod3 **Venue : Vikramshila Gargi Auditorium**

15.30-16.45 **Coding - 3**

- On t-Designs and Bounds Relating Query Complexity to Error Resilience in Locally Correctable Codes — 1569521549
  Lalitha Vadlamani; Narayanamoorthy Prakash; Govinda M Kamath; P Vijay Kumar
- Analysis of Secondary Short Codes for Satellite Navigation — 1569517837
  Sathish Babu Sekar; Kalyankumar Bandyopadhyay; Somnath Sengupta
- Projection-Based Atom Selection in Orthogonal Matching Pursuit for Compressive Sensing — 1569521821
  Saikat Chatterjee; K.V.S. Hari; Peter Händel; Mikael Skoglund

Session Chair : ***Prof. Saswat Chakraborty, IIT, Kharagpur***

Su3.SiP2 **Venue : Vikramshila V - 3**

15.30-16.45 **Signal Processing - 2**

- Model-independent Approach for Chirp Parameter Estimation Employing Collection of Filters — 1569521863
  Shishir B. Sahay, Deepak Pande, Vikram Gadre, Prashant Sohani
- An Efficient FPGA Implementation of GMSK (BT=0.3) Transceiver with Non Coherent Sequence Detection for Tactical V/UHF Waveforms — 1569503023
  Subhashini Gupta, Vikas Bhatia, LC Mangal
- Biosignal Based On-road Stress Monitoring for Automotive Drivers — 1569515987
  Rajiv Ranjan Singh; Sailesh Conjeti; Rahul Banerjee

- Ultrasonic Spectacles and Waist-belt for Visually Impaired and Blind Person 1569521707
  Shripad Bhatlawande; Jayanta Mukhopadhyay; Manjunatha Mahadevappa
- Jamming to Foil an Eavesdropper 1569502319
  Navin Kashyap; Yogesh Sankarasubramaniam; Andrew Thangaraj

Session Chair : ***Prof. Somnath Sengupta, IIT, Kharagpur***

Su3.SpP3 **Venue : Vikramshila V - 4**

15.30-16.45 **Speech Processing - 3**

- Sub-band Envelope Approach to Obtain Instants of Significant Excitation in Speech 1569504517
  Vikram Lakkavalli; Venkata Vijay Girish K; Ramakrishnan G A
- Dynamic Stochastic Resonance-based Improved Watermark Extraction From Audio Signal 1569505031
  Onkar Krishna; Rajib Kumar Jha; Prabir Kumar Biswas; Milind Mushrif
- Modeling the Intensity of Syllables Using Classification and Regression Trees 1569512215
  Ramu Reddy Vempada; Sreenivasa Rao
- Automated CVR Modification for Improving Perception of Stop Consonants 1569512651
  A. R. Jayan; P. C. Pandey

Session Chair : ***Prof. K.S. Rao, IIT, Kharagpur***

Summary of the Invited Talks

Plenary Talks :

A. Title : **On Scaling Wireless Capacity**

Speaker : Prof. A. Paulraj, Emeritus Professor, Stanford University

Abstract : The need for massive scaling of wireless capacity (BPS/Sq. Km.) in mobile networks is obvious. The levers for scaling include adding bandwidth, cell splitting, multiple antennas, coding-decoding, relays, cooperation, interference management, scheduling and spectrum management, etc. This talk will pick on some of these areas and discuss their potential for scaling capacity and discuss their implementation hurdles.

B. Title : **Introduction to Cryptology including Visual Cryptography**

Speaker : Prof. Bimal Roy, Director, Indian Statistical Institute, Calcutta

Abstract : Basic concepts of Cryptology will be presented with illustrations. The notion of cryptographic security will be introduced. A particular cryptographic scheme: Visual Cryptography will be dealt in details. In this scheme, a secret is treated as an image and is shared among a set of participants (where each share is also an image) in such a way that a set of predefined "qualified" participants can recover the secret by superimposing their shares while other group of participants that are not pre-designated can not recover the secret.

Invited Talks :

A. Title : **Wavelets and filter banks - Challenges as I see them and our Endeavours**

Speaker : Prof. V. M. Gadre, Department of Electrical Engg., IIT, Bombay

Abstract: The speaker and his students have been working on the theme of wavelets, time-frequency methods and filter banks for over a decade to date. The subject offers many challenges and opportunities and evokes many reactions of varied nature from the Signal Processing/ Image Processing Community. In this talk, it is intended to present what the speaker sees as challenges and opportunities in the field based on his work. It is also proposed to present, briefly, two or three of the research and developmental endeavours pertaining to wavelets, filter banks and time frequency methods, with which the speaker has been involved closely in the last few years and to give a feel for the experiences in these endeavours.

B. Title : **Physical Layer Network-Coding for Bidirectional Wireless Relaying and Latin Squares**

Speaker : Prof. B. Sundar Rajan, I.I.Sc., Bangalore

Abstract : The design of modulation schemes for the physical layer network-coded two way relaying scenario is discussed with a protocol which employs two phases: Multiple access (MA) phase and Broadcast (BC) phase. It was observed by Koike-Akino et al., that adaptively changing the network coding map used at the relay according to the channel conditions greatly reduces the impact of multiple access interference which occurs at the relay during the MA phase and all these network coding maps should satisfy a requirement called the exclusive law. We show that every network coding map that satisfies the exclusive law is representable by a Latin Square and conversely, and this relationship can be used to get the network coding maps satisfying the exclusive law. The channel fade states for which the minimum distance of the effective constellation seen at the relay become zero are referred to as the singular fade states. For $M-$PSK modulation, it is shown that there are $\left (\frac{M^2}{4}-\frac{M}{2}+1 \right)M$ singular fade states which are responsible for deep fades during the MA phase and the constraints which the network coding maps avoiding the neighbourhood of these singular fade states should satisfy can be viewed equivalently as Partially Filled Latin Squares (PFLS). The problem of finding all the required maps is reduced to finding a small set of maps for $M-$PSK constellations (M any power of 2), obtained by the completion of PFLS. Even though, the completability of $M \times M$ PFLS using M symbols is an open problem, two specific cases where such a completion is always possible are identified and explicit construction procedures are provided. Having obtained the network coding maps, the set of all possible channel realizations (the complex plane) is quantized into a finite number of regions, with a specific network coding map giving the best performance in a particular region. It is shown that the complex plane can be partitioned into two regions: a region in which any network coding map which satisfies the exclusive law gives the same best performance and a region in which the choice of the network coding map affects the performance. The quantization thus obtained analytically, leads to the same as the one obtained using computer search for 4-PSK signal set by Koike-Akino et al., when specialized for $M=4.$ Simulation results show that the proposed scheme performs better than the conventional exclusive-or (XOR) network coding and in some cases outperforms the scheme proposed by Koike-Akino et al.

C. Title : **Antennas for Wireless Communication: A Big Revolution in 125 Years**

Speaker : Prof. Debatosh Guha, Institute of Radio Physics and Electronics, University of Calcutta

Abstract : Which came earlier: 'Antenna'? or 'Communication'? Answer is simple: they've always been together since the day of its inception. This article will discuss the geometry and uses of antennas since the time of Hertz's experiments (1886). The term 'wireless', coined in the last decade of 19^{th} century, has taken a different flavour and concept just within 125 years of time. Our fascinating 'world' is getting smaller and smaller. Wireless Communication also demands for 'zero' size equipment in the beginning of the 21^{st} century. Printed circuit antenna has been failing to meet the critical demand. 'Antenna on chip' is another challenging aspect of today's technology. This indeed calls for new antenna technology. This paper aims to address all these modern aspects and state of the art developments, which have taken place in the last decade.

D. Title : **How to touch an object defined by a point cloud**

Speaker : Prof. Shubhashish Choudhuri, Department of Electrical Engg., IIT, Bombay

Abstract : The task of touching a virtual object is quite different from that of visual rendering as one must provide an appropriate force feedback to the user. If one does have a description of the an object through a polygonal mesh, stable algorithms exist to render the object for haptic interaction. Can we interact with an object defined by a point cloud directly, without creating a mesh representation? In this talk, we shall explore methods to achieve that.

E. Title : **Synthesis of Waveforms from Zero-Lag Cross-Correlation Matrix Under Practical Constraints**

Speaker : Prof. V. U. Reddy, C. R. Rao Advanced Institute of Mathematics, Statistics and Computer Science, University of Hyderabad Campus, Hyderabad

Abstract : Synthesis of waveforms from zero-lag cross-correlation matrix subject to some practical constraints arise in several applications, for example, MIMO radar with aveform diversity. Recently, Jian Li et al. ("MIMO RadarWaveform Synthesis," in IEEE Radar Conference 2008, (RADAR'08), Rome.) formulated the synthesis problem as a multistep
optimization. Development of a MATLAB code for implementing this optimization is non-trivial. In this talk, we present in some detail the steps of the optimization, the iterative algorithm that implements the optimization and the results of the code with some examples.

F. Title : **Cloud Computing**

Speaker : Mr. Vinay Dua, Cisco India Ltd.

G. Title : **Sensor Webs: Application Architecture and Development Platforms**

Speaker : Mr. Prateep Misra, Tata Consultancy Services

H. Title : Sponsor's Speech from Broadcom

Speaker : To be announced