# EECS, IISc RESEARCH STUDENTS SYMPOSIUM - 2021

**Date: 7th and 8th May (Online)**

**May 7th 2021 (Friday)**

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| **08:55pm-09:00am** | **Inauguration – Y. Narahari** |
| **09:00am-10:00am** | **Session 1: Plenary-1:** [**Computational Epidemiology: Challenges and Opportunities**](https://eecs.iisc.ac.in/EECS2021/talk.php?id=10)  [**Madhav Marathe**](https://eecs.iisc.ac.in/EECS2021/speaker_redirect.php?id=10)**, University of Virginia, USA**  **Chair: Mahesh Mehendale, Texas Instruments and Adjunct Professor, IISc**  **Student Organizer: Dhanaprakaash G. (RBCCPS)**  **Faculty Organizer: Vaibhav Katewa (RBCCPS)**  **Faculty Coordinator: Y. Narahari (CSA)** |
| **10:00am-10:15am** | **BREAK** |
| **10:15am-12:45pm** | **Session 2: Faculty Talks**  **Chair: K. J. Vinoy (ECE)**  **Student Organizer: Aditya Rastogi (CDS)**  **Faculty Organizer: Rahul Saladi (CSA)** |
| 1.1: Towards fast and accurate exascale quantum-mechanical calculations for material modelling using finite-element discretization and mixed-precision arithmetic  - Phani Motamarri (CDS) |
| 1.2: Computational integrity: succinct proofs in cryptography  - Chaya Ganesh (CSA) |
| 1.3: Graph Neural Networks  - Sundeep Prabhakar Chepuri (ECE) |
| 1.4: An Approach Towards an Extreme Fast Charging Station Architecture for Electric Vehicles  - Vishnu Mahadeva Iyer (EE) |
| 1.5: Integrated Sensor Systems  - Arup Polley (ESE) |
| 1.6: Data-Augmented Control of Visual Autonomous Systems  - Jishnu Keshavan (RBCCPS) |
| **12:45pm-13:30pm** | **BREAK** |
| **13:30pm-16:30pm** | **Session 3A: AI & Machine Learning**  **Cluster Coordinator: Chiranjib Bhattacharyya (CSA) and Aditya Gopalan (ECE)**  **Chair: Chiranjib Bhattacharyya (CSA) and A. G. Ramakrishnan (EE)**  **Student Organizer: Varun Krishna (EE)**  **Student Backup: Dhanaprakaash G (RBCCPS)**  **Faculty Organizer: Konduri Aditya (CDS)** |
| 3A.1: Student Presentation 1 (13:30pm-13:42pm) (Pre-recorded + 2 min live Q&A)  - Ramakrishnan K (CSA): Optimal Algorithms for Range Searching over Multi-Armed Bandits |
| 3A.2: Student Presentation 2 (13:42pm-13:54pm) (Pre-recorded + 2min live Q&A)  - Amrutha Machireddy (ESE): Learning non-linear mappings from data with applications to priority-based clustering, adaptive prediction and detection. |
| 3A.3: Student Presentation 3 (13:54pm-14:06pm) (Pre-recorded + 2min live Q&A)  - Deep Patel (EE): Adaptive Sample Selection for Robust Learning under Label Noise |
| 3A.4: Student Presentation 4 (14:06pm-14:18pm) (Pre-recorded + 2min live Q&A)  - Rameesh Paul (CSA): Independent Sets in Semi-random Hypergraphs |
| 3A.5: Student Presentation 5 (14:18pm-14:30pm) (Pre-recorded + 2min live Q&A)  - Shubham Gupta (CSA): A provably optimal algorithm for finding fair communities |
| **3A.6: Invited Talk 1 (14:30pm-15:00pm) (Live)**  **- Sunita Sarawagi (IIT Bombay): TBD** |
| **3A.7: Invited Talk 2 (15:00pm-15:30pm) (Live)**  **- Prateek Jain (Google): Stochastic Gradient Descent: Marrying Theory with Practice** |
| 3A.8: Student Presentation 6 (15:30pm-15:42pm) (Pre-recorded + 2min live Q&A)  - Anoop C S (EE): ASR in Low-resource Languages Using Domain Adaptation Approaches |
| 3A.9: Student Presentation 7 (15:42pm-15:54pm) (Pre-recorded + 2min live Q&A)  - Prachi Singh (EE): Speaker Diarization for conversational speech using graph clustering |
| 3A.10: Student Presentation 8 (15:54pm-16:06pm) (Pre-recorded + 2min live Q&A)  - Shreyas Ramoji (EE): Neural PLDA Modeling for End-to-End Automatic Speaker Verification |
| 3A.11: Student Presentation 9 (16:06pm-16:18pm) (Pre-recorded + 2min live Q&A)  - Devyani Lambhate (CDS): Simultaneous Identification of Gulf Stream and Rings from Concurrent Satellite Images of Sea Surface Temperature and Height Images |
| 3A.12: Student Presentation 10 (16:18pm-16:30pm) (Pre-recorded + 2min live Q&A)  - Pradeep K G (EE): Functional Connectivity based EEG Biometrics |
| 3A.13: Student Presentation 11 (16:30pm-16:42pm) (Pre-recorded + 2min live Q&A)  - Ritika Jain (EE): Reliable sleep stage classification method using multiple EEG features and RUSBoost technique |
| 3A.14: Presentation 12 Post Doctoral (16:42pm-16:54pm) (Pre-recorded + 2min live Q&A)  - Srikanth Raj Chetupalli (EE): Automatic speech recognition for speech conversations |
| **Session 3B: Nanodevices, VLSI Circuits and Microsystems-1**  **Cluster Coordinator: Mayank Shrivastava (ESE)**  **Chair: Mayank Shrivastava (ESE) and Dipanjan Gope (ECE)**  **Student Organizer: Alok Joshi (ECE)**  **Student Backup: Tejan Karmali (CDS)**  **Faculty Organizer: Dipanjan Gope (ECE)** |
| **3B.1: Invited Talk 1 (13:30pm-14:00pm) (Live)**  **- Martin Kuball (University of Bristol, UK): Thermal Management of Electronics and Beyond – GaN & Gallium Oxide** |
| **3B.2: Invited Talk 2 (14:00pm-14:30pm) (Live)**  **- Matteo Meneghini (University of Padua, Italy): GaN Power Transistors & Dynamic-Ron: Challenges & Perspectives** |
| 3B.1: Student Presentation 1 (14:30pm-14:40pm) (Pre-recorded)  - Mehak Mahajan (ECE): CDW induced phase transition in layered heterostructures |
| 3B.2: Student Presentation 2 (14:40pm-14:50pm) (Pre-recorded)  - Sarthak Das (EE): Excitons in flatlands |
| 3B.3: Student Presentation 3 (14:50pm-15:00pm) (Pre-recorded)  - Ansh (ESE): Electro-Thermal Stress Induced Material Reconfiguration & Device Perturbations in monolayer 2D-TMD Transistors |
| 3B.4: Presentation 4 – Post-Doctoral Researcher (15:00pm-15:10pm) (Pre-recorded)  - Sanchali Mitra (ESE): Theory of nonvolatile resistive switching in monolayer molybdenum disulfide with passive electrodes |
| 3B.5: Student Presentation 5 (15:10pm-15:20pm) (Pre-recorded)  - Tripti Jain (ESE): Learning-based Classification of magnetic and non-magnetic 2D materials |
| Q&A Students 1-5 (15:20pm-15:30pm) (Live) |
| **3B.6: Invited Talk 3 (15:30pm-16:00pm) (Live)**  **- Harald Gossner (Intel Corporation, Germany): Rethink ESD Robustness for Modular Technologies** |
| **3B.7: Invited Talk 4 (16:00pm-16:30pm) (Live)**  **- Yogesh Chauhan (IIT Kanpur): Modeling and Simulation of FinFET and Nanosheet Transistors for Advanced Technology Nodes** |
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| **Session 3C: Security & Cryptography**  **Cluster Coordinator: Himanshu Tyagi (ECE)**  **Chair: Himanshu Tyagi (ECE) and Chaya Ganesh (CSA)**  **Student Organizer: Prerna Arote (ESE)**  **Student Backup: Harini V (RBCCPS)**  **Faculty Organizer: Sundeep Chepuri (ECE)** |
| 3C.1: Student Presentation 1 (13:30pm-13:40pm) (Pre-recorded)  - Kripa Shanker (CSA): An Evaluation of Methods to Port Legacy Code to SGX Enclaves |
| 3C.2: Student Presentation 2 (13:40pm-13:50pm) (Pre-recorded)  - Sruthi Sekar (Math/CSA): Non-malleable Codes |
| Q&A Students 1-2 (13:50pm-14:00pm) (Live) |
| **3C.3: Keynote Talk 1 (14:00pm-14:30pm) (Live)**  **- Kapil Vaswani (Microsoft Research): Confidential Computing – Towards a new contract of data sharing** |
| BREAK |
| **3C.4: Industry Talk 1 (14:40pm-15:00pm) (Live)**  **- Karthik Rao (CySecK): Introduction to CySecK** |
| **3C.5: Industry Talk 2 (15:00pm-15:20pm) (Live)**  **- Arun Babu (Data Kaveri): DataSetu Confidential Data Sharing and Processing Framework** |
| 3C.6: Student Presentation 3 (15:20pm-15:30pm) (Pre-recorded)  - Ajinkya Rajput (CSA): Heap Aware Symbolic Execution for Heap Vulnerability Detection |
| 3C.7: Student Presentation 4 (15:30pm-15:40pm) (Pre-recorded)  - Nilesh Rathi (CSA): Scaling Blockchains Using Coding Theory and Verifiable Computing |
| 3C.8: Student Presentation 5 (15:40pm-15:50pm) (Pre-recorded)  - Ajith S (CSA): MPC for small population with applications to Privacy‐Preserving Machine Learning |
| Q&A Students 3-5 (15:50pm-16:00pm) (Live) |
| **3C.10: Keynote Talk 2 (16:00pm-16:30pm) (Live)**  **- Punkaj Dayana (IBM Research): Trusted Multi-enterprise AI with Blockchain** |
| **16:30pm-17:00pm** | **BREAK** |
| **17:00pm-18:00pm** | **Session 4: Plenary-2:** [**The Coding Revolutionary**](https://eecs.iisc.ac.in/EECS2021/talk.php?id=7)  **Lalitesh Katragadda, Indihood**  **Chair: Rostow Ravanan, Former CEO, Mindtree**  **Student Organizer: Nishchal Hoysal (RBCCPS)**  **Faculty Organizer: Vaibhav Katewa (RBCCPS)**  **Faculty Coordinator: Y. Narahari (CSA)** |
| **18:00pm-19:00pm** | **Session 5: Plenary-3: Multiagent reasoning for social impact**  **Milind Tambe, Harvard University and Google Research India**  **Chair: Ramesh Hariharan, CTO, Strand Life Sciences**  **Student Organizer: Dhanaprakaash G. (RBCCPS)**  **Faculty Organizer: Vaibhav Katewa (RBCCPS)**  **Faculty Coordinator: Y. Narahari (CSA)** |

**May 8th 2021 (Saturday)**

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| **09:00am-10:00am** | **Session 6: Plenary-4: Perceiving and Acting in a 3D World**  **Jitendra Malik, University of California, Berkeley and Facebook AI Research**  **Chair: Venkat Padmanabhan, Microsoft Research India**  **Student Organizer: Nishchal Hoysal (RBCCPS)**  **Faculty Organizer: Vaibhav Katewa (RBCCPS)**  **Faculty Coordinator: Y. Narahari (CSA)** |
| **10:00am-10:15am** | **BREAK** |
| **10:15am-13:15pm** | **Session 7A: Visual Analytics**  **Cluster Coordinator: Chandra Sekhar Seelamantula (CDS) and Venkatesh Babu (CDS)**  **Chair: Soma Biswas (EE) and Venkatesh Babu (CDS)**  **Student Organizer: Tejan Karmali (CDS)**  **Student Backup: Prerna Arote (ESE)**  **Faculty Organizer: Konduri Aditya (CDS)** |
| 7A.1: Student Presentation 1 (10:15am-10:25am) (Pre-recorded)  - Naveen P (CDS): Anamorphic Depth Embedding-Based Lightweight CNN for Segmentation of Anomalies in COVID-19 Chest CT Images |
| 7A.2: Student Presentation 2 (10:25am-10:35am) (Pre-recorded)  - Arindam Dutta (CDS): Towards Deep Robust Deconvolution for Low-Dose Perfusion Computed Tomography |
| 7A.3: Student Presentation 3 (10:35am-10:45am) (Pre-recorded)  - Dhruv Jawali (EE/IMI): Wavelet Design in a learning framework |
| 7A.4: Student Presentation 4 (10:45am-10:55am) (Pre-recorded)  - Jogendra Nath Kundu (CDS): Appearance Consensus Driven Self-Supervised Human Mesh Recovery |
| 7A.5: Student Presentation 5 (10:55am-11:05am) (Pre-recorded)  - Praveen Kumar Pokala (EE): Nonconvex Analysis-Sparse Model — Moreau Envelope Regularization and Projected Proximal Gradient Descent Optimization |
| Q&A Students 1-5 (11:05am-11:15am) (Live) |
| 7A.6: Student Presentation 6 (11:15am-11:25am) (Pre-recorded)  - Titir Dutta (EE): Sketch-based Image Retrieval |
| 7A.7: Student Presentation 7 (11:25am-11:35am) (Pre-recorded)  - Utkarsh Gupta (CDS): Siamese-SR: A Siamese Super-Resolution Model for Improved Petrophysical Parameter Estimation in Digital Rock |
| 7A.8: Student Presentation 8 (11:35am-11:45am) (Pre-recorded)  - Vijayalakshmi K (ECE): Revealing Disocclusions in Temporal View Synthesis |
| 7A.9: Student Presentation 9 (11:45am-11:55am) (Pre-recorded)  - Vinayak Killedar (EE): Sparsity Driven Latent Space Sampling for Generative Prior based Compressive Sensing |
| 7A.10: Student Presentation 10 (11:55am-12:05pm) (Pre-recorded)  - Jitendra Kumar Dhiman (EE): There is More to a Spectrogram Than Meets the Eye! |
| Q&A Students 6-10 (12:05pm-12:15pm) (Live) |
| **7A.11: Invited Talk 1 (12:15pm-12:45pm) (Live):**  **- Mohan Kankanhalli (NUS Singapore): Privacy-aware Analytics for Human Attributes from Images** |
| **7A.12: Invited Talk 2 (12:45pm-13:15pm) (Live):**  **- Jayavardhana Gubbi (TCS Research): Machine Vision in Industrial Automation** |
| **Session 7B: Nanodevices, VLSI Circuits and Microsystems-2**  **Cluster Coordinator: Mayank Shrivastava (ESE)**  **Chair: Varun Raghunathan (ECE) and Chetan Singh Thakur (ESE)**  **Student Organizer: Alok Joshi (ECE)**  **Student Backup: Dhanaprakaash G (RBCCPS)**  **Faculty Organizer: Dipanjan Gope (ECE)** |
| **7B.1: Invited Talk 1 (10:15pm-10:45pm) (Live):**  **- Siddharth Tallur (IIT Bombay): Microsystems for structural health monitoring** |
| 7B.2: Student Presentation 1 (10:45am-10:55am) (Pre-recorded)  - Sayak Dutta Gupta (ESE): Novel p-type AlTiO Gate Oxide e-mode Operation in AlGaN/GaN HEMTs: 600V Technology with Record High Performance |
| 7B.3: Student Presentation 2 (10:55am-11:05am) (Pre-recorded)  - Ankit Son (ESE): GaN Heterostructure Based Schottky Barrier Diodes for Power and THz Applications |
| 7B.4: Student Presentation 3 (11:05am-11:15am) (Pre-recorded)  - Rajarshi Roy Chaudhuri (ESE): Unique Reliability Phenomena in AlGaN/GaN HEMTs |
| 7B.5: Student Presentation 4 (11:15am-11:25am) (Pre-recorded)  - Jayanta Deka (ECE): Nonlinear light generation in guided mode resonant metasurfaces |
| 7B.6: Student Presentation 5 (11:25am-11:35am) (Pre-recorded)  - Sruti Menon (ECE): Medium refractive index contrast sub-wavelength dielectric structures for nonlinear optics and sensing application |
| 7B.7: Student Presentation 6 (11:35am-11:45am) (Pre-recorded)  - Alekya B (ESE): Sensor Integrated Intubation Catheter for Characterizing Airflow Patterns in Tracheal Stenosis |
| 7B.8: Student Presentation 7 (11:45am-11:55am) (Pre-recorded)  - Anil Vishnu G K (ESE): A portable MEMS-based platform for the electro-thermal phenotyping of breast biopsy tissues |
| 7B.10: Student Presentation 9 (11:55pm-12:05pm) (Pre-recorded)  - Sitaramgupta V S N V (ESE): MEMS Force Sensor for Cardiac Ablation Catheters |
| 7B.11: Student Presentation 10 (12:05pm-12:15pm) (Pre-recorded)  - Uttam Pal (ESE): Multimodal Opto-Thermo-Acoustic (OTA) Technique to Differentiate Cancer from Adjacent Normal Breast Biopsy Tissues |
| 7B.12: Student Presentation 11 (12:15pm-12:25pm) (Pre-recorded)  - Vaidya Girish Bhagwan (ESE): Towards unique device identification using Physically Unclonable Functions |
| Q&A Students 1-11 (12:25pm-12:40pm) (Live) |
| **7B.14: Invited Talk 2 (12:40pm-13:10pm) (Live):**  **- Siddharth Tallur (NUS Singapore): Microsystems for structural health monitoring** |
| **Session 7C: Signal Processing and Communications**  **Cluster Coordinator: Neelesh Mehta (ECE)**  **Chair: Neelesh Mehta (ECE) and Srikrishna Bhashyam (IIT Madras)**  **Student Organizer: Anand Kumar (ECE)**  **Student Backup: Tutan Debnath (ESE)**  **Faculty Organizer: Sundeep Chepuri (ECE)** |
| 7C.1: Student Presentation 1 (10:15am-10:26am) (Pre-recorded + 1min Q&A live)  - Deepchand Meshineni (EE): Vital signs Monitoring using FMCW radar |
| 7C.2: Student Presentation 2 (10:26am-10:37am) (Pre-recorded + 1min Q&A live)  - Bala Venkta Ramulu Gorantla (ECE): Resource allocation with limited feedback overhead for underlay D2D networks |
| 7C.3: Student Presentation 3 (10:37am-10:48am) (Pre-recorded + 1min Q&A live)  - Shubham Sharma (ECE): Design of k-space trajectories for reducing scan time in MRI system |
| 7C.4: Student Presentation 4 (10:48am-10:59am) (Pre-recorded + 1min Q&A live)  - Vinay Kumar B R (ECE): Probabilistic Forwarding with Coding for Network-wide Broadcast |
| 7C.5: Student Presentation 5 (10:59 am-11:10am) (Pre-recorded + 1min Q&A live)  - Deekshith (ECE): Second-order Rate Bounds for a Block Fading Channel Powered by an Energy Harvesting Transmitter |
| **7C.6: Invited Talk 1 (11:10am-11:40am) (Live):**  **- Ajit Rawade (IIT Bombay): Pooled testing for COVID19 samples** |
| 7C.7: Student Presentation 7 (11:40am-11:51pm) (Pre-recorded + 1min Q&A live)  - Govindu Saikesava (ECE): MCS selection algorithms for URLLC IN 5G |
| 7C.8: Student Presentation 8 (11:51pm-12:02pm) (Pre-recorded + 1min Q&A live)  - Vinayak Ramkumar (ECE): Streaming Codes for Reliable, Low-Latency Communication |
| 7C.9: Student Presentation 9 (12:02pm-12:13pm) (Pre-recorded + 1min Q&A live)  - Rama Kiran (ECE): Design of Reduced Feedback Scheme, User Scheduling, and MAC protocols for Full-Duplex Communication Systems |
| 7C.10: Student Presentation 10 (12:13pm-12:24pm) (Pre-recorded + 1min Q&A live)  - Ram Kumar (ECE): Scheduling and Power Control for Wireless Multicast Systems via Deep Reinforcement Learning |
| **7C.11: Invited Talk 2 (12:25pm-13:00pm) (Live):**  **- Adrian Sharples (British Telecom): Beyond the 5G Launch: The Future of Personal Communications** |
| **Session 7D: Computer Systems**  **Cluster Coordinator: Matthew Jacob (CSA) and Jayant Haritsa (CDS/CSA)**  **Chair: K V Raghavan (CSA); Student Presentation Judge: Karthik Ramachandra (MSRI) and Jayant Haritsa (CDS/CSA)**  **Student Organizer: Rameesh Paul (CSA)**  **Student Backup: Nishchal Hoysal (RBCCPS)**  **Faculty Organizer: Rahul Saladi (CSA)** |
| **7D.1: Invited Talk 1 (10:15am-11:15am) (Live):**  **- Suparna Bhattacharyya (Hewlett-Packard Enterprise):** The Silent Learner and the Oblivious Teacher - Meaning Aware Storage for AI |
| **7D.2: Invited Talk 2 (11:15am-12:15pm) (Live):**  **- C. Pandu Rangan (IIT Madras):** Impossible Trinities and Blockchain Trilemma |
| 7D.3: Student Presentation 1 (12:15pm-12:27pm) (Pre-recorded 10 min + 2 min live Q&A)  - Aakash Khochare (CDS): Algorithms for Co-scheduling of Edge Analytics and Routes for UAV Fleet Missions |
| 7D.4: Student Presentation 2 (12:27pm-12:39pm) (Pre-recorded 10 min + 2 min live Q&A)  - Devyani Gupta (ESE): Optimal Link Capacity Selection and Edge Server Placement using Column Generation |
| 7D.5: Student Presentation 3 (12:39pm-12:51pm) (Pre-recorded 10 min + 2 min live Q&A)  - Geetam Chawla (CSA): Automatically finding bugs in web applications |
| 7D.6: Student Presentation 4 (12:51pm-13:03pm) (Pre-recorded 10 min + 2 min live Q&A)  - Ramakant Joshi (ESE): Hardware Accelerator for Particle Transport Simulation |
| **13:15pm-14:00pm** | **BREAK** |
| **14:00pm-17:00pm** | **Session 8A: Cyber-Physical Systems**  **Cluster Coordinator: Bharadwaj Amrutur (RBCCPS)**  **Chair: Vaibhav Katewa (ECE/RBCCPS), Shishir N. Y. Kolathaya (CSA/RBCCPS)**  **Student Organizer: Dhanaprakaash G. (RBCCPS)**  **Student Backup: Prerna Arote (ESE)**  **Faculty Organizer: Vaibhav Katewa (RBCCPS)** |
| **8A.1: Invited Talk 1 (14:00pm-14:30pm) (Live):**  **- Henning Sanneck (Nokia Strategy and Technology, Germany): Cognitive Network Management in Mobile Cyber-Physical Systems** |
| **8A.2: Invited Talk 2 (14:30pm-15:00pm) (Live):**  **- Amith Singhee (IBM Research, India): AI and Hybrid Cloud** |
| **8A.3: Invited Talk 3 (15:00pm-15:45pm) (Live):**  **- Pavithra Prabhakar (Kansas State University, USA): Abstractions for Scalable Verification of AI-Controlled Cyber-Physical Systems** |
| 8A.4: Student Presentation 1 (15:45pm-16:00 pm) (Pre-recorded followed by Live Q&A)  - Chatan Kumar K (ECE): Power System Safety and Security |
| 8A.5: Student Presentation 2 (16:00pm-16:15 pm) (Pre-recorded followed by Live Q&A)  - Rooji Jinan (RBCCPS): Tracking an AR(1) process with limited communication/ Latency optimal replication codes for memory constrained servers |
| 8A.6: Student Presentation 3 (16:15pm-16:30pm) (Pre-recorded followed by Live Q&A)  - Sagar G V (ECE): Translating Natural Language Instructions to Computer Programs for Robot Manipulation |
| 8A.7: Student Presentation 4 (16:30pm-16:45pm) (Pre-recorded followed by Live Q&A)  - Saraswathy Ramanathan (ECE): Latency Redundancy Tradeoff in Distributed Read-Write Systems |
| **Session 8B: Power Engineering**  **Cluster Coordinator: Kaushik Basu (EE)**  **Chair: Kaushik Basu (EE)**  **Student Organizer: Harini V (RBCCPS)**  **Student Backup: Aniruddh S (RBCCPS)**  **Faculty Organizer: Dipanjan Gope (EE)** |
| **8B.1: Keynote Talk (14:00pm-14:30pm) (Live):**  **- Vivek Agarwal (IIT Bombay): Realizing Multilevel Inverter Properties by Cascading Switched Capacitor Networks with Two Level Inverters** |
| **8B.2: Industry Talk 1 (14:30pm-14:55pm) (Live):**  **- Ranganathan Gurunathan (Bloom Energy): Fuel Cell and its applications in Power** |
| **8B.3: Invited Talk 2 (14:55pm-15:20pm) (Live):**  **- Shailesh Ghotgalkar (Texas Instruments): Digital power control in emerging industrial and automotive applications** |
| **8B.4: Inspire Faculty Talk (15:20pm-15:40pm) (Live):**  **- Utsab Kundu (EE): An Overview of Power Management in Server Application** |
| 8B.5: Student Presentation 1 (15:40pm-15:50pm) (Pre-recorded)  - Rupam Pal (EE): Inﬂuence of soil’s electrical parameters on lightning stroke-current evolution |
| 8B.6: Student Presentation 2 (15:50pm-16:00pm) (Pre-recorded)  - Shamibrota Kishore Roy (EE): Characterization and Modelling of Switching Dynamics of SiC MOSFET |
| 8B.7: Student Presentation 3 (16:00pm-16:10pm) (Pre-recorded)  - Tanmay Mishra (EE): Generalized Source emulation approach on micro-alternator |
| Q&A Students 1-4 (16:10pm-16:20pm) (Live) |
| 8B.8: Student Presentation 4 (16:20pm-16:30pm) (Pre-recorded)  - Kamisetti N V Prasad (EE): Design Of Active Magnetic Bearing |
| 8B.9: Student Presentation 5 (16:30pm-16:40pm) (Pre-recorded)  - Kiran Kumar Challa (EE): An Algorithm for Fitting Passive Equivalent Circuits for Lumped Parameter Frequency Dependent Transmission Line models |
| 8B.10: Student Presentation 6 (16:40pm-16:50pm) (Pre-recorded)  - Meenu Jayamohan (EE): Impact Of Inverter Based Generation On Transmission Protection |
| 8B.11: Student Presentation 7 (16:50pm-17:00pm) (Pre-recorded)  - Nakul Narayanan K (ESE): Switched Capacitor Converters for High Power Applications |
| Q&A Students 4-7 (17:00pm-17:10pm) (Live) |
| **Session 8C: Brain, Computation and Data**  **Cluster Coordinator: Prasanta Ghosh (EE) and P. S. Sastry (EE)**  **Chair: P. S. Sastry (EE) and Sreedharan Devarajan (CNS)**  **Student Organizer: Nishchal Hoysal (RBCCPS)**  **Student Backup: Anand Kumar (EE)**  **Faculty Organizer: Sriram Ganapathy (EE)** |
| **8C.1: Invited Talk 1 (14:00pm-14:30pm) (Live):**  **- Suvarna Alladi (NIMHANS): Brain connectivity in health and disease: Joining the dots towards a multidisciplinary approach** |
| **8C.2: Industry Talk 2 (14:30pm-15:00pm) (Live):**  **- Gurpreet Singh Kalsi (Intel Labs India): Look-Up Table based Energy Efficient Processing in Cache Support for Neural Network Acceleration** |
| **8C.3: Open Discussion (15:00pm-15:30pm) (Live):**  **- Moderator: P. S. Sastry** |
| 8C.4: Student Presentation 1 (15:30pm-15:40pm) (Pre-recorded)  - Aditya Rastogi (CDS): Model based deep learning architecture for generalized p-norm regularization |
| 8C.5: Student Presentation 2 (15:40pm-15:50pm) (Pre-recorded)  - Georgin Jacob (ECE): Do deep networks see the way we do? |
| 8C.6: Student Presentation 3 (15:50pm-16:00pm) (Pre-recorded)  - Jaswanth Reddy Katthi (EE): Deep Learning Methods For Audio EEG Analysis |
| 8C.7: Student Presentation 4 (16:00pm-16:10pm) (Pre-recorded)  - Jerrin, Thomas Panachakel (EE): Decoding Imagined Speech from EEG using Transfer Learning |
| 8C.8: Student Presentation 5 (16:10pm-16:20pm) (Pre-recorded)  - Rathin Joshi (ESE): Neonatal Hearing Screening Headband extracting Brainstem and Cortical Response |
| Q&A Students 1-5 (16:20pm-16:30pm) (Live) |
| **8C.9: Invited Talk 3 (16:30pm-17:00pm) (Live):**  **- Neeraj Sharma (EE): Language familiarity impacts talker perception** |
|  | **Session 8D: Computational Sciences**  **Cluster Coordinator: Sashikumaar Ganesan (CDS)**  **Chair: Sashikumar Ganesan (CDS) and Koteswara Rao Sunkara (ITC Ltd)**  **Student Organizer: Tutan Debnath (ESE)**  **Student Backup: Himanshu Bhusan (EE)**  **Faculty Organizer: Ramachandran Ponnuswamy (ESE)** |
| **8D.1: Keynote Talk 1 (14:00pm-14:30pm) (Live):**  **- Giridhara R Babu (PHFI):** [**Role of data in public health response against covid19**](https://docs.google.com/document/d/1JtGYZzDrWMCgB1nORcpGALR02iP-7mSw04E1L9iCdLk/edit?usp=sharing) |
| **8D.2: Keynote Talk 2 (14:30pm-15:00pm) (Live):**  **- Deepak Subramani (CDS):** [**Spatio-temporal Prediction of Epidemic Spread: Data, Models and Ensembles**](https://docs.google.com/document/d/1JtGYZzDrWMCgB1nORcpGALR02iP-7mSw04E1L9iCdLk/edit?usp=sharing) |
| **8D.3: Keynote Talk 3 (15:00pm-15:30pm) (Live):**  **- Gautam Menon (Ashoka University):** [**Designing Optimal Vaccination Policies for COVID-19**](https://docs.google.com/document/d/1JtGYZzDrWMCgB1nORcpGALR02iP-7mSw04E1L9iCdLk/edit?usp=sharing) |
| **8D.4: Keynote Talk 4 (15:30pm-16:00pm) (Live):**  **- Ani Vullikanti (Virginia Tech):** [**Designing interventions in networked models of epidemic spread**](https://docs.google.com/document/d/1JtGYZzDrWMCgB1nORcpGALR02iP-7mSw04E1L9iCdLk/edit?usp=sharing) |
| 8D.5: Student Presentation 1 (16:00pm-16:10pm) (Pre-recorded)  - Amrita Namtirtha (CDS): [Best influential spreaders identification using network global structural properties](https://drive.google.com/file/d/1LvJYvlzO3E7bSU6zm2ODLAt8AKGWY324/view?usp=sharing) |
| 8D.6: Student Presentation 2 (16:10pm-16:20pm) (Pre-recorded)  - Tushar Sakorikar (ESE): [Modelling of electrical transport in biological tissues](https://drive.google.com/file/d/1eAoDxD8Xf2njfKRmbj94X0wzzpbqskma/view?usp=sharing) |
| 8D.7: Presentation 3 Post-Doctoral Researcher (16:20pm-16:30pm) (Pre-recorded)  - Subodh Madhav Joshi (CDS): [Sensitivity analysis of ANNs for fluid flow simulation](https://docs.google.com/document/d/1PnR0V6go7iGQI_qr_gfd5Bw1K3Ywat6FmKLjBChwft8/edit) |
| 8D.8: Student Presentation 4 (16:30pm-16:40pm) (Pre-recorded)  - Abhijith B N (ECE): [Estimation of stochastic responses due to multiple variabilities in electromagnetic finite element modelling](https://drive.google.com/file/d/1Mc-ygpBt-Awdh5GbB-SlizjuhYvamwOV/view?usp=sharing) |
| 8D.9: Student Presentation 5 (16:40pm-16:50pm) (Pre-recorded)  - Harikiran Muniganti (ECE): [Inverse Problems in 3D Full-Wave Electromagnetics](https://drive.google.com/file/d/1lq5-sjQnWjips7aZ0eJmyBTnrqeTKxHI/view?usp=sharing) |
| 8D.10: Student Presentation 6 (16:50pm-17:00pm) (Pre-recorded)  - Raghavendra GS (CSA): [Comparative Analysis of Topological Structures](https://drive.google.com/file/d/1E_rIowhnh4LPqEQCpgdPIl1CKe1K5tYx/view?usp=sharing) |
| 8D.11: Student Presentation 7 (17:00pm-17:10pm) (Pre-recorded)  - Sangeeta Yadav (CDS): [SPDE-Net: Predict an optimal stabilization parameter for SUPG technique to solve  Singularly Perturbed PDEs](https://drive.google.com/file/d/1GMiZj1-3Bs-dLscOroNGyXoOvzMd7ULl/view?usp=sharing) |
| 8D.12: Student Presentation 8 (17:10pm-17:20pm) (Pre-recorded)  - Vinod J. Matthew (CDS): [Scalable Asynchrony-Tolerant PDE Solver for Multi-GPU Systems](https://drive.google.com/file/d/1-vFRehMhZKbvAMzUz2Zzm5hA63GLL8L-/view?usp=sharing) |
| Q&A Students 1-8 (17:20pm-17:30pm) (Live) |
|  |
| **17:00pm-17:30pm** | **BREAK** |
| **17:30pm-19:00pm** | **FELICITATION**  **PROFESSOR P. VIJAY KUMAR (ECE)**  **PROFESSOR Y. N. SRIKANT (CSA)**  **PROFESSOR K. GOPINATH (CSA)** |
| **19:00pm-19:10pm** | **Best Paper in Session Awards**  **Vote of Thanks** |

**Useful Links:**

1. **ALL VIDEOS:** <https://drive.google.com/drive/folders/10oWG9jjQzXcY03P0y1YpJROxbn22xDcO?usp=sharing>

**You can find a folder for your session here.**

1. **Links to sessions:** In case of any issues, contact Nishchal ([nishchalg@iisc.ac.in](mailto:nishchalg@iisc.ac.in), 9741575738) or ​Dhanaprakash ([dhanaprakaas@iisc.ac.in](mailto:dhanaprakaas@iisc.ac.in), 9788756233)

**Friday 7th May 2021:**

|  |  |  |
| --- | --- | --- |
| **Session** | **Time** | **Link** |
| **Inauguration +**  **S1: Plenary-1**  **Madhav Marathe** | **08:55am-**  **10:00am** | [**https://zoom.us/j/98101873619?pwd=L1BwSzdaWDkwVVE1SkR1aldyd3pVUT09**](https://zoom.us/j/98101873619?pwd=L1BwSzdaWDkwVVE1SkR1aldyd3pVUT09) |
| **S2: Faculty Talks** | **10:15am-**  **12:45pm** | [**https://zoom.us/j/98101873619?pwd=L1BwSzdaWDkwVVE1SkR1aldyd3pVUT09**](https://zoom.us/j/98101873619?pwd=L1BwSzdaWDkwVVE1SkR1aldyd3pVUT09) |
| **S3A: Cluster Session**  **AI & Machine Learning** | **13:30pm-**  **16:30pm** | [**https://zoom.us/j/92621019038?pwd=UjlFTktnYUN0TW91RjFFZ28zL0dOUT09**](https://zoom.us/j/92621019038?pwd=UjlFTktnYUN0TW91RjFFZ28zL0dOUT09) |
| **S3B: Cluster Session**  **Nanodevices, VLSI Circuits and Microsystems-1** | **13:30pm-**  **16:30pm** | [**https://zoom.us/j/92483576858?pwd=N2lDMmNQd3NNb28yUExtTG5KOFBwZz09**](https://zoom.us/j/92483576858?pwd=N2lDMmNQd3NNb28yUExtTG5KOFBwZz09) |
| **S3C: Cluster Session**  **Security and Cryptography** | **13:30pm-**  **16:30pm** | [**https://zoom.us/j/98206839356?pwd=bEJNK1ZCWkFXcEI2bFp5Tm03UkdYZz09**](https://zoom.us/j/98206839356?pwd=bEJNK1ZCWkFXcEI2bFp5Tm03UkdYZz09) |
| **S4: Plenary-2**  **Lalitesh Katragadda** | **17:00pm-**  **18:00pm** | [**https://zoom.us/j/98101873619?pwd=L1BwSzdaWDkwVVE1SkR1aldyd3pVUT09**](https://zoom.us/j/98101873619?pwd=L1BwSzdaWDkwVVE1SkR1aldyd3pVUT09) |
| **S5: Plenary-3**  **Milind Tambe** | **18:00pm-**  **19:00pm** | [**https://zoom.us/j/98101873619?pwd=L1BwSzdaWDkwVVE1SkR1aldyd3pVUT09**](https://zoom.us/j/98101873619?pwd=L1BwSzdaWDkwVVE1SkR1aldyd3pVUT09) |

**Saturday 8th May 2021:**

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| --- | --- | --- |
| **Session** | **Time** | **Link** |
| **S6: Plenary-4**  **Jitendra Malik** | **09:00am-**  **10:00am** | [**https://zoom.us/j/98101873619?pwd=L1BwSzdaWDkwVVE1SkR1aldyd3pVUT09**](https://zoom.us/j/98101873619?pwd=L1BwSzdaWDkwVVE1SkR1aldyd3pVUT09) |
| **S7A: Cluster Session**  **Visual Analytics** | **10:15am-**  **13:15pm** | [**https://zoom.us/j/98253612841?pwd=VUdhaHlieUlhUjFIOHBLdEFHc3pMQT09**](https://zoom.us/j/98253612841?pwd=VUdhaHlieUlhUjFIOHBLdEFHc3pMQT09) |
| **S7B: Cluster Session**  **Nanodevices, VLSI Circuits and Microsystems-2** | **10:15am-**  **13:15pm** | [**https://zoom.us/j/99921926316?pwd=QnJ3VzcwTEVhZmhIajN2bUMwcWQrdz09**](https://zoom.us/j/99921926316?pwd=QnJ3VzcwTEVhZmhIajN2bUMwcWQrdz09) |
| **S7C: Cluster Session**  **Signal Processing and Communications** | **10:15am-**  **13:15pm** | [**https://zoom.us/j/99751927767?pwd=Q054OW9NeDhXUGdlUVJHam1Pa2dBQT09**](https://zoom.us/j/99751927767?pwd=Q054OW9NeDhXUGdlUVJHam1Pa2dBQT09) |
| **S7D: Cluster Session**  **Computer Systems** | **10:15am-**  **13:15pm** | [**https://zoom.us/j/94629021071?pwd=alBhSGVLN3AveUdUUHBDWGpsWVg3Zz09**](https://zoom.us/j/94629021071?pwd=alBhSGVLN3AveUdUUHBDWGpsWVg3Zz09) |
| **S8A: Cluster Session**  **Cyber-Physical Systems** | **14:00pm-**  **17:00pm** | [**https://zoom.us/j/97419548678?pwd=WUQvU3pDOU5KZUVmUHE4SWp4ZmovZz09**](https://zoom.us/j/97419548678?pwd=WUQvU3pDOU5KZUVmUHE4SWp4ZmovZz09) |
| **S8B: Cluster Session**  **Power Engineering** | **14:00pm-**  **17:00pm** | [**https://zoom.us/j/97532349336?pwd=eXV3WTFpM2FpVVRMNWZHRXN1RTIxUT09**](https://zoom.us/j/97532349336?pwd=eXV3WTFpM2FpVVRMNWZHRXN1RTIxUT09) |
| **S8C: Cluster Session**  **Brain, Computation and Data** | **14:00pm-**  **17:00pm** | [**https://zoom.us/j/97514423936?pwd=UksyWDhhd210dTYySHF0bnB2S2RWUT09**](https://zoom.us/j/97514423936?pwd=UksyWDhhd210dTYySHF0bnB2S2RWUT09) |
| **S8D: Cluster Session**  **Computational Sciences** | **14:00pm-**  **17:00pm** | [**https://zoom.us/j/93578321805?pwd=azBncWp2TWhmYXRaeXJjTW5SekhYZz09**](https://zoom.us/j/93578321805?pwd=azBncWp2TWhmYXRaeXJjTW5SekhYZz09) |
| **Felicitation**  **Prof. P. V. Kumar; Prof. K. Gopinath; Prof. Y. N. Srikant**  **Awards; Vote of Thanks** | **17:30pm-**  **19:00pm** | [**https://zoom.us/j/98101873619?pwd=L1BwSzdaWDkwVVE1SkR1aldyd3pVUT09**](https://zoom.us/j/98101873619?pwd=L1BwSzdaWDkwVVE1SkR1aldyd3pVUT09) |

# EECS RESEARCH STUDENTS SYMPOSIUM – 2021

# AT A GLANCE

**May 7th (Friday)**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **09:00am-**  **10:00am** |  | **10:15am-**  **12:45pm** |  | **13:30pm-**  **16:30pm** |  | **17:00pm-**  **18:00pm** | **18:00pm-**  **19:00pm** |
| **S1: Plenary-1**  **Madhav Marathe** | **S2: Faculty Talks**  **Phani Motamarri**  **Chaya Ganesh**  **Sundeep Chepuri**  **Vishnu Mahadev Iyer**  **Arup Polley**  **Jishnu Keshavan** | **S3A: Cluster Session**  **AI & Machine Learning** | **S4: Plenary-2**  **Lalitesh Katragadda** | **S5: Plenary-3**  **Milind Tambe** |
| **S3B: Cluster Session**  **Nanodevices, VLSI Circuits and Microsystems-1** |
| **S3C: Cluster Session**  **Security and Cryptography** |

**May 8th (Saturday)**

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| --- | --- | --- | --- | --- | --- | --- |
| **09:00am-**  **10:00am** |  | **10:15am-**  **13:15pm** |  | **14:00pm-**  **17:00pm** |  | **17:30pm-**  **19:00pm** |
| **S6: Plenary-4**  **Jitendra Malik** | **S7A: Cluster Session**  **Visual Analytics** | **S8A: Cluster Session**  **Cyber-Physical Systems** | **Felicitation**  **Prof. P. V. Kumar**  **Prof. K. Gopinath**  **Prof. Y. N. Srikant**  **Awards**  **Vote of Thanks** |
| **S7B: Cluster Session**  **Nanodevices, VLSI Circuits and Microsystems-2** | **S8B: Cluster Session**  **Power Engineering** |
| **S7C: Cluster Session**  **Signal Processing and Communications** | **S8C: Cluster Session**  **Brain, Computation and Data** |
| **S7D: Cluster Session**  **Computer Systems** | **S8D: Cluster Session**  **Computational Sciences** |

**THANK YOU**