

SPECTRO

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FEB 16, 17 & 18





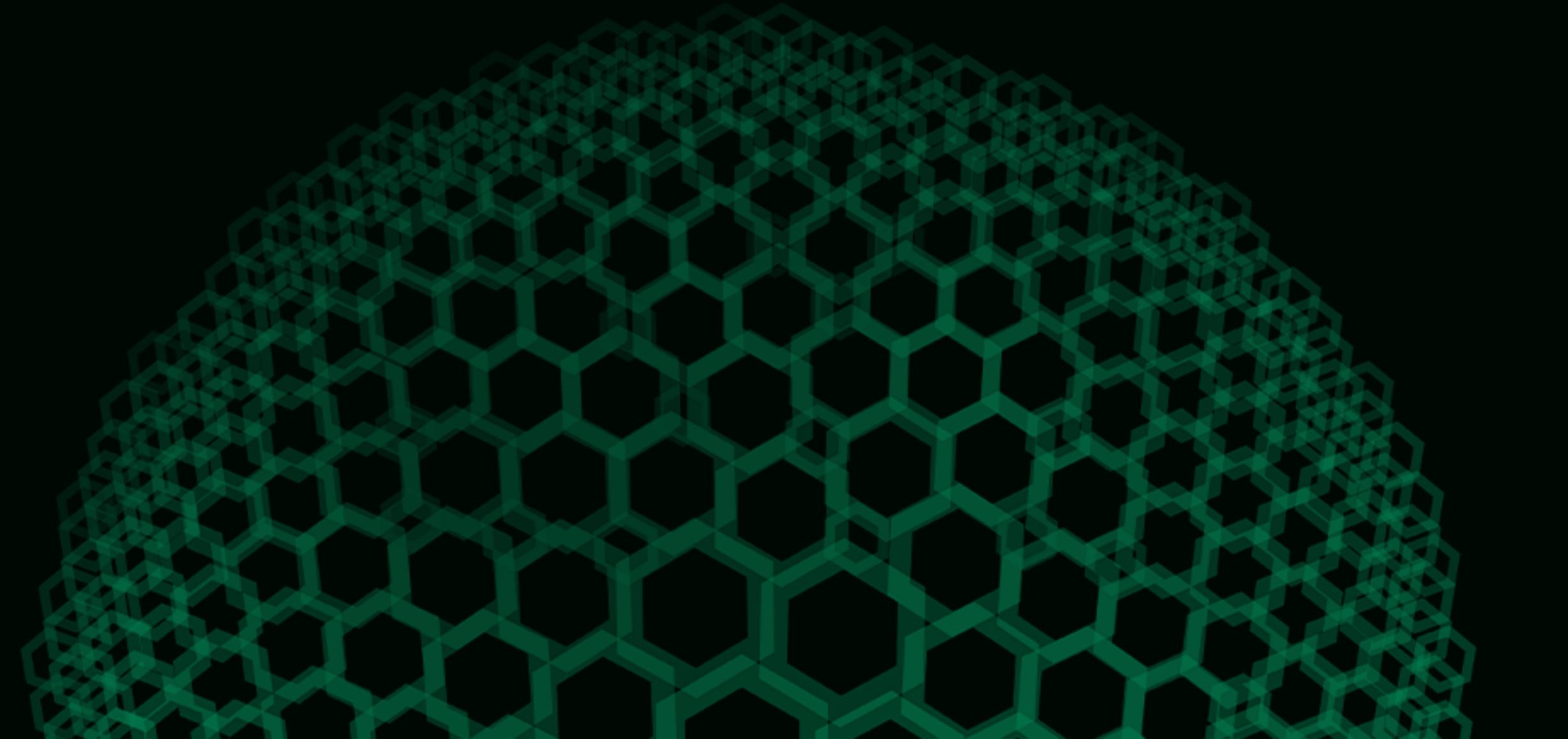
About IEEE FISAT SB.

Established in 2003 with the motto "Integrating Innovations," the IEEE FISAT Student Branch is a hub of technical excellence. Under the leadership of Shri S Gopakumar and IEEE Gold Member Shri Varghese Cherian, the chapter hosts various events, making it one of the top 5 active student branches in the Kerala section with 460 members and over 100 new additions annually. In 2022, the chapter received the Outstanding Student Branch by IEEE India Council, the Exemplary Student Branch Award from IEEE Region 10, and the Darrel Chong Bronze Medal. It stands as the second-largest in the IEEE Kerala Section and globally ranks second in both the Computer Society and Power and Energy Society Chapters in terms of membership. The IEEE FISAT SB continues to be a symbol of technological prowess and community impact.

01

SpectroSpect.

Welcome to Spectrospect, the premier national event for engineering students, focusing on wireless communication and signal processing. Organized by IEEE FISAT SB, it stands as the flagship event under the IEEE SPS FISAT SBC. Over three days, attendees will participate in hands-on workshops, technical sessions, and engaging activities. Join us for a dynamic blend of theory and practical skills, fostering lasting connections in the exciting realm of signal processing.



02

Workshops.

Participate in a comprehensive learning experience at Spectrospect through our meticulously planned lineup of five parallel interactive workshops. These workshops encompass a range of advanced topics, including Brainwave Robotics, Digital signal Processing, Quantum Signal Processing, Speech Recognition, and Blockchain & Signal Processing. Each workshop offers a structured and formal environment for participants to delve into the intricacies of these cutting-edge technologies. Engage in hands-on activities, gain valuable insights, and broaden your understanding of signal processing. Join us at Spectrospect and elevate your knowledge and skills in these innovative and formal workshop sessions.

1. Brainwave Robotics

Delve into the synergy of brainwaves and robotics in our workshop. Learn fundamentals, integrate brainwave tech with robotics, and master microcontrollers, actuators, and power supplies. Emphasizing conceptualization, explore embedded systems, AI, and automation. Gain hands-on experience in EEG instruments, microcontroller programming, device interfacing, and wireless Bluetooth modules. Construct robots with algorithms and explore practical brainwave sensor applications. This workshop at the intersection of neuroscience and robotics equips you with essential skills for the dynamic tech landscape.



2. Digital Signal Processing

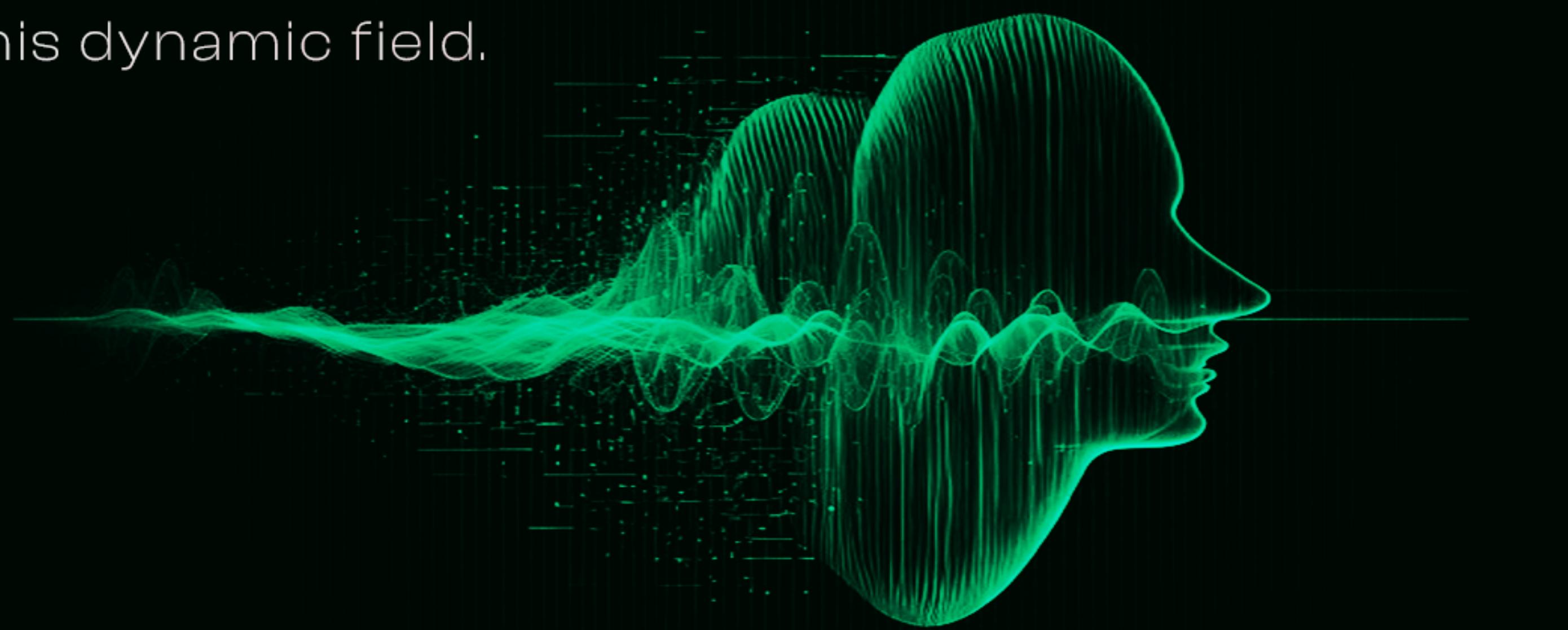
Join our two-day Digital Signal Processing (DSP) workshop, conducted with MATLAB, for a deep dive into DSP concepts and practical implementation. Explore sampling, quantization, discrete-time signals, and systems, using MATLAB for signal generation, manipulation, and visualization. The workshop covers FIR and IIR filters, spectral analysis, and modulation techniques. Cap it off with a DSP project in audio processing, image processing, or communications, gaining hands-on experience in MATLAB.

3. Quantum Signal Processing

Explore the fusion of quantum computing and signal processing in our Quantum Signal Processing workshop. Gain a foundational understanding of quantum mechanics, gates, and qubits. Delve into Quantum Fourier Transform, quantum filtering, and quantum noise, with hands-on exercises for practical experience. Addressing challenges and future directions, this workshop equips participants with the knowledge and skills to navigate this exciting interdisciplinary realm at the forefront of technological innovation.

4. Speech Recognition

Uncover the essence of speech recognition in our workshop, where fundamental concepts and techniques are highlighted for transforming spoken language into written text. Explore acoustic and language modeling, delving into feature extraction and phoneme recognition. From voice assistants to transcription services, discover the broad applications of speech recognition, sparking innovation in natural language processing, human-computer interaction, and accessibility. Join us to unlock opportunities for research and development in this dynamic field.



5. Blockchain & Signal Processing

Unearth the fusion of blockchain and signal processing in our workshop. Covering fundamentals, cryptographic principles, and diverse blockchain types, participants engage in hands-on exercises implementing blockchain-based signal processing applications. Explore decentralized algorithms, smart contract development, and network setup. Discover emerging trends and research opportunities in this intersection, gaining a comprehensive understanding of enhancing signal processing systems with blockchain. Topics include blockchain technology, applications in signal processing, and practical exercises.



Our Target Audience.

The event is tailored for university students, featuring a 3-day program with 2-day workshops and a project expo highlighting the latest developments in signal processing. The sessions cover diverse topics, including discussions on current medical trends using signal processing. The goal is to enhance awareness and skills in signal processing, allowing participants to learn through live experiences and analyze the latest trends in the field. The event is designed to inspire a passion for the continually evolving sector of Signal Processing among university students.



Contact Us.

Samanuai A

Chair, IEEE FISAT SB

Ph.no: +91 6238943968

Helen Anil

SPS Chair, IEEE FISAT SB

Ph.no: +91 90720 30864

Ann Mary Jojy

Event Lead

Ph.no: +91 92079 78096

Gregory Kurien

Event Lead

Ph.no: +91 80758 84601

Isac John Eralil

Event Lead

Ph.no: +91 86069 09009

Hormis Nagar, Mookkannoor

Angamaly, Kerala

Email: fisatieeeesb@gmail.com

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