REGISTRATION FEE

Professional Members

Non-IEEE Members	: Rs. 500/- (inclusive of 18% GST)
IEEE Members	: Rs. 400/- (inclusive of 18% GST)
IEEE SPS Members	: Rs. 350/- (inclusive of 18% GST)

Student Members

Non-IEEE Members	: Rs. 400/- (inclusive of 18% GST)
IEEE Members	: Rs. 300/- (inclusive of 18% GST)
IEEE SPS Members	: Rs. 250/- (inclusive of 18% GST)

*Accommodation will be provided on request basis

WHO CAN ATTEND?

Registration is open to students, research scholars, faculty and industry persons.

ACCOUNT DETAILS

Name: Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology Trust
Account Number: 75330400000013
Bank: Bank of Baroda
Branch: Vel Tech Engineering College
IFSC: BARB0VJVELT (Fifth character is zero)

Registration Link

https://forms.gle/yhvXBcdedkLMuKdm7

SELECTION PROCESS

Participants are limited to a maximum of 100 on first-come-first-serve basis and selected candidates will be intimated through email.

IMPORTANT DATES

Registration closes by	: 07.06.2024
Intimation of selection	: 11.06.2024
Confirmation by participants	: 14.06.2024

CONTACT DETAILS

Dr. Rajkumar R, Associate Professor - ECE
9842524419, *rrajkumardr@veltech.edu.in*
Ms. Subha K J, Assistant Professor - ECE
8939733507, *subhakj@veltech.edu.in*

ORGANIZING COMMITTEE

CHIEF PATRONS

Col. Prof. Vel Dr. R. Rangarajan
Founder President & Chancellor
Dr. Sagunthala Rangarajan
Foundress President
Mrs. Rangarajan Mahalakshmi Kishore
Chairperson and Managing Trustee

PATRON

Prof. S. Salivahanan
Vice Chancellor

CO-PATRONS

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Dr. K. Porkumaran
Chairman, IEEE Madras Section

ADVISORS

Dr. A. T. Ravichandran
Dean Academics
Dr. P. Sakthivel
Vice Chairman (Academics), IEEE Madras Section
Dr. R. Hariprakash
Secretary, IEEE Madras Section
Dr. S. Radha
Treasurer, IEEE Madras Section
Dr. N. Venkateswaran
Chairman, IEEE SPS - Madras Section

CONVENERS

Dr. R. S. Valarmathi
Dean School of Electrical and Communication
Dr. A. Selwin Mich Priyadharson
Professor & Head - ECE

ORGANIZING COMMITTEE

Dr. Jana S
Professor - ECE
Dr. Rajkumar R
Associate Professor - ECE
Dr. Rahul S G
Assistant Professor - ECE
Ms. Subha K J
Assistant Professor - ECE

Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

NAAC A++ | Recognized as CATEGORY-1 DEEMED TO BE UNIVERSITY | UGC

IEEE | IEEE Signal Processing Society

School of Electrical and Communication
Department of Electronics & Communication Engineering
in association with
IEEE SPS Student Branch Chapter, Vel Tech
Organizes
IEEE Signal Processing Society Sponsored
2024 IEEE SPS Seasonal School
on

"Exploring Quantum Signal Processing: Core Principles to Applications"

01st - 05th JULY 2024

ABOUT THE INSTITUTION

Vel Tech offers UG, PG and Ph.D. programs in both engineering and management. The institution has made distinctive progress since the founding in 1997, by adopting the unique and trending educational methodologies. It is a private deemed to-be university, established in 2008. The university has been recognised by UGC as the "Category 1 Deemed to be University" and approved by AICTE, New Delhi as well. Vel Tech is the first member from India to be part of CDIO, an innovative educational framework for producing the next generation engineers. Vel Tech has been recognized as the best engineering institution and ranked A++ in NAAC and 87th position in NIRF India Rankings 2023. The TBI (Technology Business Incubator) of Vel Tech is recognized as the Center of Excellence under NIDHI PRAYAS by the Government of India.

ABOUT THE SCHOOL

The School of Electrical and Communication at Vel Tech imparts knowledge in electrical, electronics and communication engineering and all other allied areas. The students of the school actively participate in nationally reputed clubs such as robotics club and small device programming club, to enthuse and bring out their skills from them. Many of the faculty members of the school are doctorates from reputed institutions from India and abroad. The students of the school are involved in nationally significant projects namely Small Satellite projects in collaboration with international industries in France, Germany etc. The department has been consistently producing illustrious engineers of fine caliber and enabling them to occupy the prestigious position in the academics and the industrial fields.

ABOUT THE DEPARTMENT

The Department of Electronics and Communication Engineering was established in the year 1997. Over the time, the department has emerged in diverse dimensions and affords a spellbound ambience for teaching and learning. The department offers B.Tech. in Electronics and Communication Engineering which has received Tier-1 NBA accreditation for 3 years in the year 2018 and extended for next three years till June 2025., M.Tech. in Embedded Systems & Technologies and Ph.D. in ECE degree programmes with technology-oriented courses that create industry ready personnel in the prudent fields of Electronics and Communication Engineering. Also all the programs are approved by AICTE. To be in pace with technological advancements and meet the Global demands, the department offers B.Tech in Electronics and Communication Engineering with specializations in AI&DS, AI&ML and Cyber Security. The department consists of 123 faculties in total with 110

doctorates. The department has received a total project funding worth 2.3 Crores from various funding agencies viz. DST-SERB, DBT, DRDO, CPRI, ISRO-Respond. The department has well equipped curriculum-based laboratories and state of the art facilities for research and development. The department of ECE always strives to create careers for students in several industries BOSCH, IBM, WIPRO, TCS, VaTech Wabag Ltd., Zebronics, Microship etc.

ABOUT IEEE SPS STUDENT BRANCH CHAPTER, VEL TECH

The IEEE Signal Processing Society (SPS) is a leading professional society within IEEE, focusing on signal processing for information generation, transformation, and interpretation. SPS supports members with publications, conferences, education, and leadership opportunities. The inaugural ceremony of the IEEE Signal Processing Student Branch Chapter (SBC15921D) at Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology marked a significant milestone on May 13, 2022. Since its inception, the chapter has thrived, embodying a spirit of innovation and collaboration. With a robust membership base, including 8 IEEE SPS Professional Members and 75 IEEE SPS Student Members. The chapter's impact is much evident with over 25 meticulously organized events till date from hands-on workshops to coding contests, poster design competitions, technical quizzes, panel discussions, outreach programs, project expos, technical talks, seminars, and laboratory visits. Due to the exemplary efforts, the chapter was honored with the Membership Growth Reward of 250 USD in 2023, a testament to its dedication to fostering a thriving community of learners and practitioners in the field of signal processing.

ABOUT THE SEASONAL SCHOOL

Quantum Signal Processing (QSP) represents a cutting-edge interdisciplinary field that merges the principles of quantummechanics with classical signal processing techniques. At its core, QSP leverages the unique features of quantum computing to revolutionize the way we analyze and manipulate signals. QSP relies on quantum algorithms, employing quantum gates and circuits to manipulate qubits for tasks like filtering and Fourier analysis. Quantum algorithms offer advantages in handling large datasets due to quantum parallelism. Quantum Machine Learning extends QSP's scope into feature extraction and classification.QSP finds applications in telecommunications for improving communication systems. This seasonal school offers an opportunity to delve into QSP, where quantum principles meet classical signal processing tasks.

RESOURCE PERSONS

- **Dr. Arun B Aloshious**
  Assistant Professor - EEE, IIT Guwahati
- **Dr. Kavitha S S**
  Assistant Professor - ECE, NIE, Mysore, IEEE Member
- **Dr. Kolla Bhanu Prakash**
  Professor - CSE and Associate Dean (R&D), KL University, Andra Pradesh, IEEE Senior Member
- **Dr. Jayakumar V**
  Assistant Professor - IT, Presidency University, Bengaluru, IBM Qiskit Advocate, IEEE Senior Member
- **Dr. Manjula Gandhi S**
  Associate Professor - IT, Coimbatore Institute of Technology, IBM Qiskit Advocate
- **Dr. S. Brindha**
  Professor - ECE, Sri Sai Ram College of Engineering, Chennai, Vice Chairman- IEEE SPS Madras Chapter
- **Dr. S. Jana**
  Professor - ECE, Vel Tech Rangarajan Dr. Sagunthala R&D Institution of Science and Technology, Avadi, Chennai, IEEE Member.

TOPICS

- Fundamentals of Quantum Computing
- Quantum Building Blocks
- Quantum Entanglement and Error Correction
- Quantum Algorithm
- Quantum Signal Processing Basics with Hands-on using IBM Quiskit
- Traditional Machine Learning Algorithms and its Applications
- Quantum Neural Networks
- Hands-on with Pennylane
- Quantum Machine Learning Algorithms
- Hands-on using IBM Quiskit for QML
- Quantum Convolutional Neural Networks
- Quantum Auto Encoders
- Applications of Quantum Computing
- Awareness Session on IEEE SPS Membership and Benefits