



AICTE Training and Learning (ATAL) Academy

Sponsored

Five Day National Workshop

On

Advancements in Antenna Engineering using Artificial Intelligence

21.09.2020 to 25.09.2020



Convener

Dr. R. BOOPATHI RANI

Assistant Professor, Department of ECE, NIT Puducherry



Department of Electronics and Communication Engineering

National Institute of Technology Puducherry

(An Institute of National Importance under MHRD, Govt. of India)

Thiruvettakudy, Karaikal – 609609 U.T. of Puducherry

www.nitpy.ac.in

ABOUT THE INSTITUTE

National Institute of Technology Puducherry (NITPY) is an autonomous Technical Institute located in Union Territory of Puducherry. The institute is situated in 258 Acres of land near Village Poovam at Thiruvettakudy, Karaikal. It is one among the 31 National Institutes of Technology of India and is declared as an Institute of National Importance by Government of India under NIT Act, 2007. The Institute was sanctioned by the Government of India in 2009 as part of Eleventh Five-Year Plan (2007-2012). The institute was established in 2010, starting its intake in the academic year 2010-11. The Institute is offering Five B.Tech. Degree programs and Three M.Tech. Degree programs in addition Ph.D. degree programs in Science and Humanities, Electronics and Communication Engineering, Electrical Engineering, Computer Science Engineering, Mechanical Engineering, Civil Engineering and Physical Education.

ABOUT THE DEPARTMENT

The Department of Electronics and Communication Engineering was established during the inception of the Institute in the year 2010. It offers B.Tech. Degree in Electronics and Communication Engineering, M.Tech. Degree program in Communication Systems, VLSI Design and Ph.D. degree program in various fields of Electronics and Communication Engineering. The programs have structured curriculum and syllabus and are being revised time to time in order to keep abreast with the latest developments and emerging technologies.

The department has state of art laboratories with latest equipment. The faculty members are with different specializations. The research activity of the department includes both fundamental research and sponsored projects. SMDPC2SD and DST sponsored projects are in progress.

ABOUT THE WORKSHOP

Artificial Intelligence (AI) is an emerging technology which mimics human intelligence and makes things smarter. The AI can be applied on Antennas to bring out the results without much time consumption. The future of any area lies in the efficient amalgamation with AI. The research outputs also indicate that the introduction of AI in Antenna, produces significant improvements. This workshop introduces the key concepts and programming methods of AI, and its applications in Antenna Engineering. This workshop is funded by AICTE Training and Learning (ATAL) Academy, India.

OBJECTIVES OF THE PROGRAM

- To understand the importance of Artificial Intelligence and its application in Antennas.
- To understand the basics of Artificial Intelligence.
- To understand the basics of microwaves, antennas and its parameters.
- To understand the modern antennas that are vital for next generation communications.

COURSE DELIVERABLES

Upon completion, the successful participants will be able to take up antenna design projects using Artificial Intelligence, to implement AI techniques for Antenna Signal Processing.

The faculty participants will be able to explore the concepts of AI and its applications to students and hence student's good projects as outcome.

The Ph.D. scholars will be able to identify their research problems.

WORKSHOP CONTENTS

- Microwave Fundamentals
- Introduction to Antennas, Parameters
- Introduction to Artificial Intelligence
- AI applications in Antennas – Overview
- Antennas for Cognitive Radio Application
- Antennas for 5G Application
- Optimization Techniques for Beam Forming
- Applications to Metamaterial Antennas
- Metaheuristics in Antenna Engineering
 - Why and How?
- Tunable SIW antenna
- Antennas for Satellite Communication
- Applications to Direction of Arrival Estimation
- Demonstration, Physical Fitness Session

HIGHLIGHTS

Expert's Talks, Fitness Talk, Demonstration

RESOURCE PERSONS

- Dr. S. RAGHAVAN, Professor (HAG) Retd., Department of ECE, NIT Trichy.
- Dr. AMALENDU PATNAIK, Associate Professor, Department of ECE, IIT Roorkee.
- Dr. CHINMOY SAHA, Associate Professor, Department of Avionics, IIST Thiruvananthapuram.
- Dr. R. PANDEESWARI, Associate Professor, Department of ECE, NIT Trichy.
- Dr. PRAKASA RAO A, Associate Professor, Department of ECE, NIT Warangal.
- Dr. S. S. KARTHIKEYAN, Assistant Professor, Department of ECE, NIT Trichy.
- Dr. VARUN GOPI, Assistant Professor, Department of ECE, NIT Trichy.
- Dr. ARANI ALI KHAN, Assistant Professor, Department of EE, IIT Jodhpur.
- Mr. S. PURUSHOTHAMAN, Scientist F, ISRO, Bangalore, Joint Secretary, Antenna Test & Measurement Society, India.
- Dr. R. BOOPATHI RANI, Assistant Professor, Department of ECE, NIT Puducherry.
- Dr. S. BABU, Students Activity and Sports Officer, NIT Puducherry.

ELIGIBILITY

The faculty, Ph.D. and PG Scholars from AICTE approved institutions can attend the workshop.

REGISTRATION FEE - NIL

No registration fee will be collected from the participants.

REGISTRATION

The interested candidates are required to register for the workshop through the AICTE-ATAL website only. Hence, it is requested to login to webpage <https://www.aicte-india.org/atal> for participant's registration. The number of participants is limited to 200 and will be selected as per guidelines. For any clarification, the workshop convener can be contacted.

Last date for Registration: 15.09.2020 or upto 200 participants whichever is first.

Confirmation to the participants through Email: 17.09.2020

ORGANISING COMMITTEE

Chief Patron

Dr. K. SANKARANARAYANASAMY, Director, NIT Puducherry

Patron

Dr. G. AGHILA, Professor & Registrar (i/c), NIT Puducherry

Convener

Dr. R. BOOPATHI RANI, Assistant Professor, ECE, NIT Puducherry, Email id: rbrani@nitpy.ac.in; rbrani@gmail.com; Mobile: 98437 91683

Coordinators

Dr. G. LAKSHMI SUTHA, AP & HoD, ECE, NIT Puducherry
Dr. HARIGOVINDAN V P, AP, ECE, NIT Puducherry
Dr. MALAYA KUMAR NATH, AP, ECE, NIT Puducherry
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Dr. M. SURENDAR, AP, ECE, NIT Puducherry
Dr. B. SURENDIRAN, AP, CSE, NIT Puducherry