



National Institute of Technology Andhra Pradesh

Tadepalligudem, Andhra Pradesh - 534101
Department of Electronics and Communication Engineering

An Online Faculty Development Programme On Applications of Machine Learning in 5G / 6G Communications 14th-18th December 2020

Patron

Prof. C. S. P. Rao
Director, NIT Andhra Pradesh

Co - Patrons

Dr. Dinesh P. Sankar Reddy
In-charge Registrar, NIT Andhra

Dr Kiran Kumar Gurrala,
Head, Department of ECE, NIT AP

Coordinators

Dr. B Narasimha Rao,
Assistant Prof, Department of ECE, NIT AP

Dr. Krishna Chaitanya A
Assistant Prof, Department of ECE, NIT AP

About FDP

The main objective of this five-day faculty development programme is to acquaint the participants with the recent technological advancements occurring in areas of wireless communications. The FDP mainly addresses applications of machine learning for wireless communications. FDP will be helpful for the faculties and researchers working in the areas of wireless technologies.

About NIT Andhra Pradesh

National Institute of Technology Andhra Pradesh is the 31st institution among the chain of NITs started by the Government of India. NIT Andhra Pradesh was established in the state of Andhra Pradesh in the year 2015. The institute offers B.Tech., M.Tech., M.S. (by Research), and Ph.D. Programmes in Eight Engineering Disciplines.

About Department

The Department of Electronics and Communication Engineering offers B. Tech, M.Tech (Signal Processing and Communication Engineering), M.S (by Research), and Ph.D. Programmes. Faculties of the department are working in the following research areas: Wireless networks, Information theory, Error control codes, VLSI signal processing, Radar Engineering, Unmanned aerial vehicles, wireless cooperative communications, Millimeter/Microwave Sources, Microwave antennas, Microwave Passive Circuits.

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Speakers

Dr. Sanjeev Sharma
Department of ECE, IIT (BHU) Varanasi

Dr. Anand M. Baswade
Department of EECS, IIT Bhilai

Dr. Sudhakar Modem
Department of EE, IIT Jammu

Dr. Shivanshu Shrivastava
Post Doctoral Fellow, Shenzhen University

Dr. Sudharsan P
Department of ECE, NIT Trichy

Dr. Kalpana Naidu
Department of ECE, NIT Warangal

Dr. Bharath B N
Department of EE, IIT Dharwad

Dr Krishna Chaitanya A
Department of ECE, NIT AP

Dr. Sreejith T. V
Department of EECS, IIT Bhilai

Dr. Sudheer Poojary
Qualcomm, Bangalore



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Schedule

Date	Forenoon Session (10:00 am - 11:30 noon)	Afternoon Session (2:30 pm - 4:00 pm)
14 - Dec - 2020	Optimization in wireless networks Dr Krishna Chaitanya A	Performance evaluation in Wireless Networks, Dr. Sudheer Poojary
15 - Dec - 2020	5G NR Physical layer aspects, Dr. Sreejith T. V	Energy Harvesting: Application in wireless and IoT networks, Dr. Sudhakar Modem
16 - Dec- 2020	Application of deep learning in hybrid RF/MLC systems, Dr. Shivanshu Shrivastava	Application of stochastic geometry in wireless analysis, Dr. Sudharsan P
17 - Dec - 2020	Machine Learning in Communications Dr. Bharath B N	Resource allocation in Heterogeneous networks, Dr. Kalpana Naidu
18 - Dec - 2020	Coexistence of Cellular and Wi-Fi Networks in Unlicensed Spectrum, Dr. Anand M. Baswade	Nonorthogonal Multiple Access Techniques: Future Radio Access, Dr. Sanjeev Sharma

General Instructions

The registrations are open for Faculty members, Research scholars and PG students. There is a registration fee of Rs 200/-. The maximum number of participants is limited to 150. Last date for registration is 11/12/2020. Please use the following [link](#) for registration. E-certificates will be issued for all the participants.

Contact Information

Dr Krishna Chaitanya - 8309945777, email : krishna@nitandhra.ac.in
Dr. B Narasimha Rao - 7989935826, email: narasimha@nitandhra.ac.in



National Institute of Technology Andhra Pradesh
(An autonomous Institute under the aegis of Ministry of Education, GoI)
Tadepalligudem, Andhra Pradesh - 534101
Department of Electronics and Communication Engineering



सर्वदा जगते
Ministry of Education
Government of India

Faculty Development Programme on
“Application of Machine Learning in 5G / 6G
Communications”

(14th to 18th December, 2020)

Certificate of Participation

This is to certify that **Mr. Sridhar Babu C** from **G Narayanamma Institute of Technology and Science** has participated in the online Faculty Development Programme entitled “**Applications of Machine Learning in 5G / 6G Communications**” from 14th to 18th December, 2020 organized by the **Department of Electronics and Communication Engineering, NIT Andhra Pradesh, Tadepalligudem, Andhra Pradesh.**

B. Narasimha Rao
Chaitanya

Dr. B Narasimha Rao & Dr. Krishna Chaitanya

FDP Coordinators

Assistant Professor

G. Narayanamma Institute of NIT Andhra Pradesh
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Kiran

Dr Kiran Kumar Gurrala

Head, Dept of ECE,
NIT Andhra Pradesh



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Department: Electronics and Communication Engineering

2020-21

REPORT

Report on FDP: Applications of Machine Learning in 5G/6G Communications

Organizer: National Institute of Technology Andhra Pradesh

Department: Electronics and Communication Engineering

Date: 14th-18th December 2020

Patron: Prof. C. S. P. Rao, Director, NIT Andhra Pradesh

Co-Patrons: Dr. Dinesh P. Sankar Reddy, In-charge Registrar, NIT Andhra

Dr. Kiran Kumar Gurralla, Head, Department of ECE, NIT AP

Introduction: The National Institute of Technology Andhra Pradesh organized a Faculty Development Program (FDP) on "Applications of Machine Learning in 5G/6G Communications" from 14th to 18th December 2020. The FDP aimed to provide participants with insights into the intersection of machine learning and the next-generation communication technologies, focusing on 5G and the evolving landscape of 6G communications.

Summary:

14th Dec 2020:

- Forenoon Session: Optimization in wireless networks by Dr. Krishna Chaitanya A
- Afternoon Session: Performance evaluation in Wireless Networks by Dr. Sudheer Poojary

15th Dec 2020:

- Forenoon Session: 5G NR Physical layer aspects by Dr. Sreejith T. V
- Afternoon Session: Energy Harvesting: Application in wireless and IoT networks by Dr. Sudhakar Modem

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16th Dec 2020:

- Forenoon Session: Application of deep learning in hybrid RF/VLC systems by Dr. Shivanshu Shrivastava
- Afternoon Session: Application of stochastic geometry in wireless analysis by Dr. Sudharsan P

17th Dec 2020:

- Forenoon Session: Machine Learning in Communications by Dr. Bharath B N
- Afternoon Session: Resource allocation in Heterogeneous networks by Dr. Kalpana Naidu

18th Dec 2020:

- Forenoon Session: Coexistence of Cellular and Wi-Fi Networks in Unlicensed Spectrum by Dr. Anand M. Baswade
- Afternoon Session: Nonorthogonal Multiple Access Techniques: Future Radio Access by Dr. Sanjeev Sharma

Key Topics Covered: The FDP covered a wide range of topics crucial to the understanding and application of machine learning in 5G/6G communications. Sessions included discussions on optimization and performance evaluation in wireless networks, 5G NR physical layer aspects, energy harvesting, deep learning in hybrid RF/VLC systems, stochastic geometry in wireless analysis, machine learning in communications, resource allocation in heterogeneous networks, coexistence of cellular and Wi-Fi networks, and non-orthogonal multiple access techniques for future radio access.

Conclusion: The FDP provided participants with a comprehensive understanding of the applications of machine learning in the rapidly advancing field of 5G/6G communications. The diverse topics covered by expert speakers from academia and industry contributed to a holistic learning experience for the participants, enhancing their knowledge and skills in this cutting-edge domain. The event was a success in promoting collaboration and knowledge dissemination in the field of advanced communication technologies.

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Signature of the Faculty member