



Five Days Virtual STC & FDP
on
**ROLE OF AI/ML IN ELECTRICAL, ELECTRONICS AND
BIOMEDICAL ENGINEERING APPLICATIONS
(RAEEBEA-2024)**

7th – 11th November 2024

National Institute of Technology Rourkela

Odisha, India

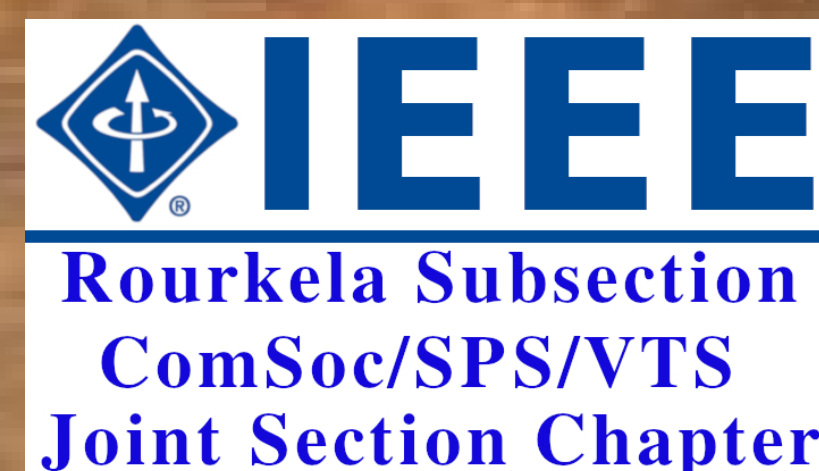
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राष्ट्रीय प्रौद्योगिकी संस्थान
ରାଉରକିଲା ପ୍ରଯୁକ୍ତି ବିଦ୍ୟାଳୟ

Coordinator
Dr. Anwesha Sengupta
Dr. Arijit Guha
Dr. Suman Kr Dey

Technical Co-sponsored



COURSE OVERVIEW

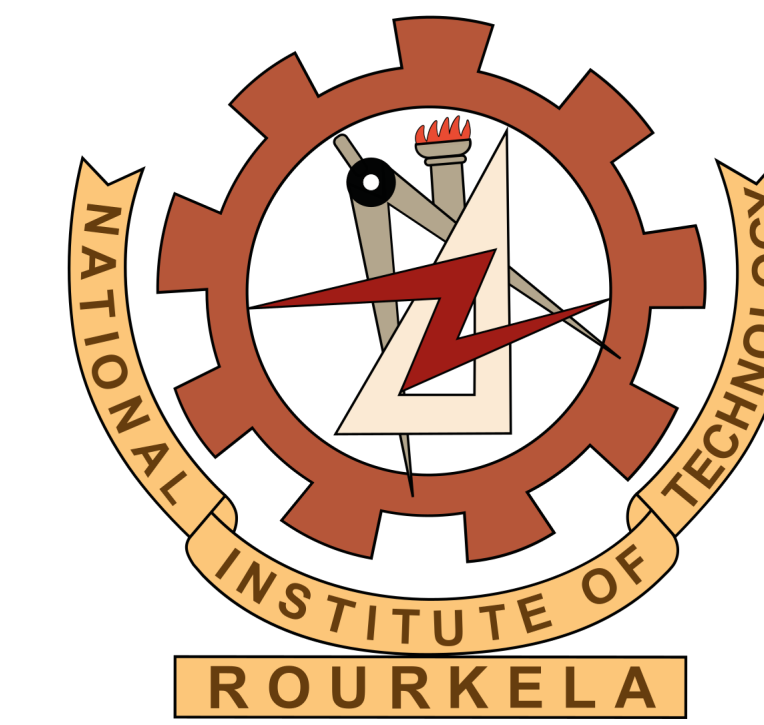
This short-term course is specially designed and framed considering the role of AI and ML in electrical, electronics and biomedical engineering applications. In electrical engineering, AI/ML is being used for smart grid management, fault detection, and optimization of energy distribution, leading to more efficient and sustainable power systems. In electronics, AI/ML is aiding in the design and optimization of integrated circuits, signal processing, and automation, enhancing performance and reducing development time. Autonomous systems like drones and robotics are also benefiting from AI for navigation, control, and decision-making. In biomedical engineering, AI/ML is transforming healthcare through applications in medical imaging, diagnostics, personalized medicine, and wearable health technologies. AI-powered algorithms assist in early disease detection, such as cancer and neurological disorders, by analyzing medical data more accurately and rapidly than traditional methods. Current trends indicate increased adoption of AI/ML for automation, optimization, and predictive analytics in these fields. Future directions include deeper integration of AI for real-time data processing, autonomous decision-making, and more advanced human-computer interactions, paving the way for smarter, more efficient, and personalized solutions across industries.

TOPICS TO BE COVERED

- ⇒ AI for smart grid optimization
- ⇒ AI/ML for optical communication
- ⇒ AI strategies for renewable energy management
- ⇒ Smart Antenna Systems
- ⇒ Deep learning techniques for medical image analysis
- ⇒ ML based multi-agent system

DISTINGUISHED SPEAKERS FROM ACADEMIA & INDUSTRIES

- ☺ **Prof. Saptarshi Chatterjee**, Asst. Professor, National Institute of Technology Rourkela.
- ☺ **Prof. Ananyo Sengupta**, Asst. Professor, National Institute of Technology Rourkela.
- ☺ **Prof. Anirban Dasgupta**, Asst. Professor, Indian Institute of Technology Guwahati.
- ☺ **Dr. Shubhobrata Bhattacharya**, Engineer, Education Team, MathWorks, India.
- ☺ **Prof. Sobhan Dhara**, Asst. Professor, National Institute of Technology Rourkela.
- ☺ **Prof. Suman Kr. Dey**, Asst. Professor, National Institute of Technology Rourkela.
- ☺ **Prof. Sandip Ghoshal**, Asst. Professor, National Institute of Technology Rourkela.



Five Days Virtual Short Term Course
& Faculty Development Program

on

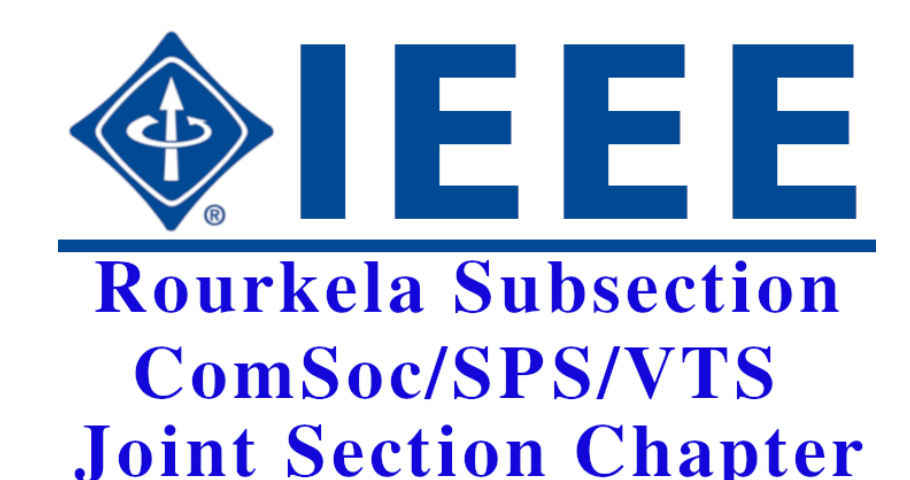
ROLE OF AI/ML IN ELECTRICAL, ELECTRONICS AND BIOMEDICAL ENGINEERING APPLICATIONS (RAEEBEA-2024)

7th – 11th November 2024

Organized by

DEPARTMENT OF ELECTRICAL ENGINEERING
National Institute of Technology Rourkela
Odisha-769008, India

Technically Co-Sponsored by



ABOUT THE INSTITUTE

National Institute of Technology (NIT) Rourkela was founded as Regional Engineering College, Rourkela in 1961. It is a prestigious Institute with a reputation for excellence at both undergraduate and postgraduate levels, fostering the spirit of national integration among the students, a close interaction with industry and a strong emphasis on teaching and research in both basic and applied fields. Being an Institute of National Importance it has been consistently ranked within TOP 20 engineering institutes for last five consecutive years as per NIRF ranking of Ministry of Education, Government of India. The Institute houses twenty versatile departments across different fields of engineering, science, management, and humanities.

34	19	30	291-300
NRF	NRF	NRF	QS
Overall	Engg.	Research	Asia

To know more about the Institute please [Click Here](#).

ABOUT THE DEPARTMENT

The department of Electrical Engineering is established with the vision to design technologies and nurture technologists for diverse and sustainable growth in electrical engineering, leading to wealth and welfare of humanity. The department offers various UG and PG programmes with the mission to develop a platform for forging students as technocrats in line with cutting-edge academic, research and modern industrial practices, and enhancing their aptness in any technical sectors across the globe.

To know more about the EE Department please [Click Here](#).

WHO SHOULD ATTEND

A team of distinguished experts from academia and industries will share their expertise on topics related to the role of AI/ML in Electrical, Electronics, and Biomedical Engineering Applications. Thus, the course is suitable for engineers, faculty, and research scholars pursuing a Ph.D. This course will open up many potential research directions, opportunities and challenges ahead. Interested UG and PG students who would like to further explore cutting-edge research in this area will be accommodated in this course.

[The participants will be provided with online certificates upon successful completion of the course.](#)

REGISTRATION DETAILS

Category	Registration Fee in INR (including GST)#
Research Scholar/PG/UG Students	Rs. 590/-
Faculties from Academia	Rs. 944/-
Engineers from Industry and R&D Organizations	Rs. 1,180/-

Registration Fee*: To be deposited in the following account.

Account Name: Continuing Education NIT Rourkela

Account Number: 10138951784

IFSC Code: SBIN0002109

Swift Code: SBININBB137

Bank: State Bank of India

Branch: NIT Campus Rourkela

UPI ID: 01389517841@sbi



Registration fees is not required for Faculty/Staff/Student of NIT Rourkela. Without registration fees no certificate will be provided.

To complete online registration, Please fill up the [Google Form](#) after paying the registration fee.

Registration deadline: 3rd November, 2024

Confirmation to participants: 4th November, 2024

Online platform details and detail program schedule will be intimated by: 6th November, 2024

COORDINATORS

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Dr. Arijit Guha, Asst. Prof.

Dr. Suman Kr. Dey, Asst. Prof.

Department of Electrical Engineering

National Institute of Technology Rourkela,

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CONTACT AND QUERIES

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