Course Relevance:

Machine intelligence (MI) and the Internet of Things (IoT) are driving forces behind industrial automation and the smart factory concept. Predictive maintenance and quality, human–robot integrations, and adaptive supply chains are driving the evolution of industrial automation. While the industrial world is gradually becoming accustomed to the concept of Industry 4.0, the world is already evolving into Industry 5.0. The Internet of Things (IoT) is an evolved and connected distributed control system that uses sensors and other connected devices to collect, exchange, and analyze data for improved productivity, energy management, and other economic benefits. The I4.0 is a generic term for a collection of strategic frameworks and initiatives, as well as a technical term for the new emerging digitalization of business assets, processes, and services. Different terms are used depending on the country, but they all represent the same concept, which is referred to as "The Fourth Industrial Revolution.“ This course would cover fundamentals of IoT & Machine intelligence including its software, hardware, different networking protocols, clustering , Different learning methods & Block-chain technology in IoT.

Course Objective:

- To provide the overview of IoT.
- To introduce different protocols, networking and security for IoT.
- To provide fundamentals of machine learning, basic regression methods, details about deep & artificial neural networks, support vector machines, clustering and block chain technology
- To provide practical hands-on lab exercises.

Topics To Be Covered:

- Internet of Things Basics,
- Industry4.0, Industrial IoT, Architecture of IoT
- Hardware for IoT, Sensors and Actuators
- Software for IoT, Different Protocols for IoT, Networking,
- Powering & Security of IoT devices,
- Block-chain IoT
- Machine Intelligence for IoT, Mathematical Tools for Machine Intelligence, Support Vector Machine, Artificial neural Network, Deep Learning, Clustering & Classification Algorithms

Speakers:

D. P. Acharya ECE Department, NIT Rourkela

AK. Sahoo ECE Department, NIT Rourkela

AK. Swain ECE Department, NIT Rourkela

A Kumar CS Department, NIT Rourkela

U. C. Pati ECE Department, NIT Rourkela

S. K. Das ECE Department, NIT Rourkela

S Desmukh ECE Department, NIT Rourkela

U. K. Sahoo ECE Department, NIT Rourkela

K. K. Mahapatra ECE Department, NIT Rourkela

A. K. Turuk CS Department, NIT Rourkela

S Chinnara CS Department, NIT Rourkela

Sampad Mohanty, University of South California, USA

Manas Panda, Cisco Systems USA

Professional Development Programme On

IoT & Machine Intelligence For Industry 4.0

06th – 11th June 2022

Coordinators:

Prof. Debiprasad. Priyabrata Acharya
Prof. Ajit Kumar Sahoo
Prof. Ayas Kanta Swain

Centre for IoT & Embedded Technology (CIET)

Electronics and Communication Engineering,
National Institute of Technology, Rourkela-769008
Odisha, India

About National Institute of Technology (NIT) Rourkela:

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 research, both basic and applied. The city of Rourkela is a bustling industrial city, cosmopolitan by nature and is well connected to all parts of the country by road and rail. The nearest airports are Ranchi, Kolkata and Bhubaneswar, which are well connected by trains. Please visit https://www.nitrkl.ac.in/About.aspx to know more about NIT Rourkela.

About Department of Electronics and Communication Engineering

The department was established with the vision to become a nationally acclaimed department of higher learning that will serve as a source of knowledge and expertise for the society. The department offers various UG and PG programmes with the mission to advance and spread knowledge in the areas of electronics, communication, instrumentation, signal processing and VLSI leading to creation of wealth and welfare of humanity. The department also offers M. Tech in Microwave and Radar Engineering and Ph. D. for regular as well as sponsored candidates. The faculties of EC department are handling several externally funded research projects. Please visit https://www.nitrkl.ac.in/EC/ to know more about the Department of ECE.

Important Dates:

Confirmation to participant by email:	**1st June 2022**
Commencement of Course	**6th June 2022**
End of Course	**11th June 2022**

Target Participants:

Professionals from Industry

Contact Details:

Debiprasad Priyabrata Acharya
Professor
Department of ECE, NIT Rourkela
Email: dpacharya@nitrkl.ac.in
Mobile No- +91-9438484151

Ajit Kumar Sahoo
Assistant Professor
Department of ECE, NIT Rourkela
Email: ajitsahoo@nitrkl.ac.in
Mobile No- +91-9437492123

Ayas Kanta Swain
Assistant Professor
Department of ECE, NIT Rourkela
Email: swaina@nitrkl.ac.in
Mobile No- +91-9437341298

Registration Details:

The registration fee (non-refundable) for the participants for attending the programme is given below:

Registration Type	Fees
Industry Person	INR 18000

This excludes lodging and boarding

Bank Account Details for Paying Registration Fee:

Account Name	Continuing Education NIT Rourkela
Account No.	10138951784
Bank	State Bank of India
Branch	NIT Campus Rourkela(02109)
IFS Code	SBIN0002109

Contact and Queries: *Please send your queries directly to the course coordinators.*