

About IIT Kharagpur



Kharagpur - a dusty town tucked away in the eastern corner of India, famous until 1950 as home to the longest railway platform in the world - became the nursery where the seed of the IIT system was planted in 1951. IIT Kharagpur started its journey in the old Hijli Detention Camp in Eastern India, where some of the country's great freedom fighters toiled and sacrificed their lives for India's independence. Spurred by the success of IIT Kharagpur, four younger IITs sprouted around the country in the two following decades, and from these five came thousands of IITians, the brand ambassadors of modern India. It was the success of this one institution at Kharagpur that wrote India's technological odyssey.

The Institute takes pride in its relentless effort to provide the best platform for both education as well as research in the areas of science and technology, infrastructure designs, entrepreneurship, law, management, and medical science and technology. IITKGP is not just the place to study technology, it is the place where students are taught to dream about the future of technology and beam across disciplines, making differences enough to change the world.



Program Features/ Structure

Classroom lectures

Demo Sessions

Hands-on experiments using different microcontrollers and Machine learning algorithms

Program Fee

INR 1000/- (refundable) for TEQIP-III Sponsored participants

For other Students: INR 3000/-
For Faculties: INR 5000/-
For Industry: INR 10000/- (+ GST @18% per participant for all)

Last day of Registration

20

May 2020

Program Schedule and Venue

5 days, 15 – 19 June 2020 (9:30 AM – 6 PM)

IIT Kharagpur – Takshashila building, Ramanujan Complex

Who will benefit (Eligibility)

Students pursuing B.Tech/ B.E/ MSc, M.Tech, and PhD in any discipline

Accommodation

Accommodation will be provided to the TEQIP-III sponsored participants at the campus Guesthouse. For other participants, the same will be provided on chargeable basis as per rule.

How to Apply

Use the link: <https://erp.iitkgp.ac.in/CEP/courses.htm> to apply ONLINE.



Payment if applicable is to be done **ONLINE** after getting short listed for the program.

Contact Us

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NPIU

TEQIP-III

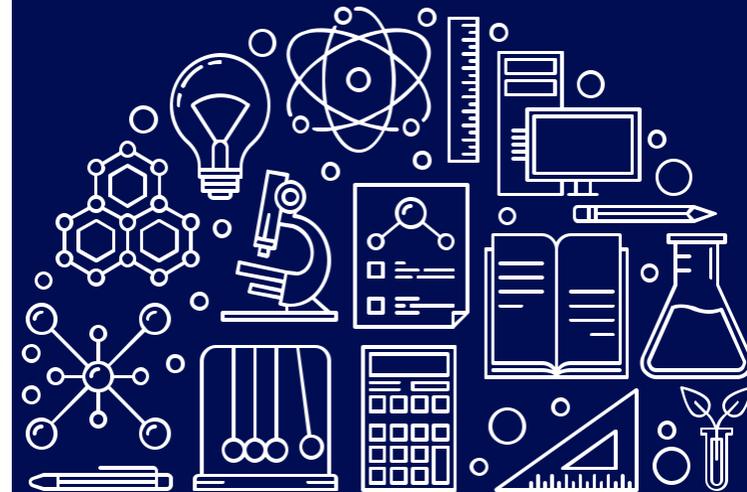
NPIU - A Unit of MHRD, Govt of India for
Implementation of World Bank Assisted Projects in Technical Education

Indian Institute of Technology Kharagpur

Internet of Things and Machine Learning Applications

5 Days

15 – 19 June 2020



Introduction / Overview

The advent of IoT has revolutionized connectivity for modern man. IoT has found its major applications in different sectors of industries and other domains such as healthcare and agriculture. The increasing adoption of IoT has resulted in a need for advanced data analysis and prediction techniques which are capable of supporting big data. With the emergence of machine learning, an application of Artificial Intelligence (AI), it is now possible to perform big data analysis and learn from those data rather than programming it explicitly. Therefore, by implementing machine learning algorithms on the information gathered from the IoT devices, it is possible to analyze and predict results accordingly.

Program Objectives

The objective of this course is to help the academicians and the student community to improve their knowledge about the various cutting-edge technologies in the field IoT and machine learning applications. It would help them gain insights about the current trends of machine learning and AI techniques used in IoT to orient towards the present industrial scenario. This course involves theoretical basics of IoT and machine learning, machine learning requirements in IoT, and combined hands-on experimentation.

What you will learn

Program Content

Introduction to Internet of Things,
Basic Concepts

Networking and Communication Protocols

Machine to Machine Communication and
interoperability

Emergence of Edge Technologies: Fog Computing

SDN in IoT

IoT Case Studies

Introduction to Industrial Internet of Things

Demonstration sessions for different IoT
projects

Introduction to Machine Learning

Big Data in IoT and its handling using ML

Neural Networks

Hands-on Experiments using Arduino and
Raspberry Pi

IoT Data Analytics and Prediction

About the Faculty

Prof. Sudip Misra

Dr. Sudip Misra is a full Professor and Abdul Kalam Technology Innovation National Fellow in the Department of Computer Science and Engineering at the Indian Institute of Technology Kharagpur. Prior to this he was associated with Cornell University (USA), Yale University (USA), Nortel Networks (Canada) and the Government of Ontario (Canada). His current research interests include mobile ad hoc and sensor networks, internet of things (IoT), computer networks, and learning systems. Prof. Misra is the author of over 300 scholarly research papers. He received the IEEE ComSoc Asia Pacific Outstanding Young Researcher Award at IEEE GLOBECOM 2012, Anaheim, California, USA. Further, his team was awarded the GYTI Award (2018) by the President of India, and the 3rd Prize in the Samsung Innovation Award (2014) at IIT Kharagpur, the IBM Innovation Award (2016) at IIT Kharagpur. He was also the recipient of several academic awards and fellowships such as the Young Scientist Award (National Academy of Sciences, India), Young Systems Scientist Award (Systems Society of India), Young Engineers Award (Institution of Engineers, India), (Canadian) Governor General's Academic Gold Medal at Carleton University, the University Outstanding Graduate Student Award in the Doctoral level at Carleton University and the National Academy of Sciences, India – Swarna Jayanti Puraskar (Golden Jubilee Award). He was also awarded the Canadian Government's prestigious NSERC Post-Doctoral Fellowship and the Humboldt Research Fellowship in Germany. Prof. Misra is the Fellow of the National Academy of Sciences (NASI), India, the Institution of Engineering and Technology (IET), UK, and the Institution of Electronics and Telecommunications Engineering (IETE), India.

Prof. Misra has been serving as the *Associate Editor of the IEEE Transactions on Mobile Computing, IEEE Transactions on Vehicular Technology, IEEE Transactions on Sustainable Computing, IEEE Network, and IEEE Systems Journal, International Journal of Communication Systems (Wiley), and IET Communications Journal.* Prof. Misra has published 10 books in the areas of opportunistic networks, wireless ad hoc networks, wireless sensor networks, wireless mesh networks, communication networks and distributed systems, network reliability and fault tolerance, and information and coding theory, published by reputed publishers such as Springer, Cambridge University Press, Wiley, and World Scientific.

He received his Ph.D. degree in Computer Science from Carleton University, in Ottawa, Canada, and the masters and bachelor's degrees, respectively, from the University of New Brunswick, Fredericton, Canada, and the Indian Institute of Technology, Kharagpur, India.

