CEP Short-term course

Artificial Intelligence for Healthcare Technology and Management

12th September – 14th September, 2022

Organized by

Department of Electrical Engineering
Indian Institute of Technology Patna,

Bihta, Bihar PIN-801106

Coordinator

Dr. Maheshkumar H Kolekar

Associate Professor, EE Dept, IIT Patna

Co-Coordinator

Dr. Meghana Dutta,

Assistant Professor of Economics, IIT Patna

ABOUT IIT PATNA

IIT Patna is an institute of National importance incorporated by an Act of the Indian Parliament in 2008. It is ranked 21st among engineering colleges in India by the National Institutional Ranking framework in 2021. IIT Patna's campus is located at Bihta, 35 km from Patna and 20 km from Ara, at a 501 acres site. The nearest railway station is Bihta, 2 km from the campus. IIT Patna has good road connectivity to and from Patna and Ara. The nearest airport to reach IIT Patna campus is Jai Prakash Narayan Domestic Airport, Patna, which is located 5 km southwest of Patna.

ABOUT SHORT-TERM COURSE

Due to the increasing number of patient data, manual analysis and monitoring of such data is becoming less feasible and more complex. Advanced computing technologies such as artificial intelligence (AI), machine learning (ML) and deep learning (DL) has enabled the healthcare sectors to gain deeper insights from patient data. AI has the ability to successfully process and analyze large variety of data which is far beyond our capacity and has the potential to transform many aspects of patient care. This has led to an increasing demand of big data analytics. **AI in healthcare** has enabled the innovation of several advanced technologies in the field of patient monitoring systems, breast cancer risk predictions and even ICU death predictions. Advanced computing is changing how life sciences organizations approach healthcare research and delivery, offering new opportunities for improving outcomes while reducing costs and risks.

AI is playing an important role in transforming both health and healthcare in and out of clinical setting. It is the future of public health, and acts as a bridge that connects healthcare delivery from a personal level to a system level. Thus, with the help of AI it is possible to support doctors, physicians, administrative staffs as well as customer service representatives by offering them proper assistance, automation of clinical documents, image analysis, disease diagnosis, patient medical history, virtual observation and patient outreach.

The proposed course will give the participants an overall idea of present status of applications of AI for healthcare. Participants will get opportunity to interact with experts from IITs, DRDO, AIIMS Patna, CDAC Patna and hospitals such as IGIMS Patna and PARAS Patna.

This course provides a unique platform for multi-disciplinary knowledge exploration, amalgamation and augmentation of engineering with clinical science. This course helps the faculty to integrate AI and healthcare to cater the needs of students in pursuit of their urge for knowledge.

OBJECTIVE OF THE COURSE

- To provide an in-depth knowledge with practical applications through theoretical session blended with hands-on experiments.
- To enhance the skills of participants to make them well equipped with the current state-of-the-art technologies.
- To provide thorough application oriented and problem-based learning with real life examples.
- To equip the faculty to make utmost competent to capture the knowledge urge of modern-day students.

COURSE CONTENTS

The course will cover the basic concepts of AI in healthcare. Various applications of biomedical signals in different field such as cognitive assessment, brain computer interfacing will be discussed. Application of biomedical signal in disease prognosis and diagnosis

will be explained with results. The course includes technical discussion on the following:

- Introduction to biomedical signals
- Application of biomedical signals in healthcare
- Filtering in medical signal analysis
  Introduction to AI, ML, DL
- Machine and Deep learning applications in healthcare

Medical doctors/practitioners from AIIMS Patna, PARAS hospital, Indira Gandhi Institute of Medical Science Patna are also invited to deliver talk and share their experiences.

ORGANIZING COMMITTEE

PATRON

Prof. T N Singh, Director, IIT Patna

COORDINATOR

Dr. Maheshkumar H Kolekar, Associate Professor, EE, IIT Patna

CO-COORDINATOR

Dr. Meghna Dutta, Assistant Professor of Economics, IIT Patna

EXPERTS/SPEAKERS

Eminent faculties/ scientists from IITs, DRDO, CSIR, NITs, IIITs, AIIMS Patna, PARAS Hospital Patna, IGIMS Patna, reputed Universities, hospitals and industry experts. Tentative list of speakers is as follows:

- Dr Saurabh Varshney, Director, AIIMS Patna
- Dr Sushil Chandra, INMAS, DRDO, New Delhi
- Dr. Maheshkumar H Kolekar, IIT Patna
- Dr. Meghna Dutta, IIT Patna
- Dr Kamlesh Jha, AIIMS Patna

FEE PAYMENT

Fill up the google form and upload the proof of payment in the upload section in the form.
Fee Payment:
The Participation fees for the CEP program will be accepted through e-transfer / RTGS/ NEFT.

Details for Online Payments:
Bank: State Bank of India,
Branch: IIT Patna, Bihta
Bank Account No: 30957551934
MICR Code: 801002005
Beneficiary: Indian Institute of Technology Patna
Bank Telephone: 0612-3028062
IFSC: SBIN0017164
Account Type: Savings A/c

Registration Fees (INR)

- **Students: 1000**
- **Faculty: 4500**
- **Industry Delegates: 6000**

Mode of the course: Hybrid Mode

Short-term course will be held in offline/online.

Last Date for Registration: 15th August, 2022

COURSE REGISTRATION FORM

Online link to the registration form is attached below. Please submit the course fee as mentioned before submitting the form.

Registration form link:

https://forms.gle/9Z9Vzh5Q9WXSjo6bA

ACCOMODATION

Accommodation of participants will be arranged in guest house/hostels on affordable charges. Participant has to pay the charges of accommodation and food.

ADDRESS FOR COMMUNICATION

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DIRECTION