

5-day Online Short Term Course on Internet of Underwater Things (IoUT) with AI & ML



Organized by

Central Institute of Technology Kokrajhar

From May 22 to May 26, 2023

Funded by TIH Division IITG TIDF

About Workshop

The Internet of Underwater Things (IoUT) is an interconnected and distributed network developed for connecting underwater objects in maritime and underwater environments through wired or wireless communication technologies. IoUT's network architecture is inherently heterogeneous and ought to be sufficiently resilient to function in challenging conditions. As a result, underwater communications face significant difficulties when reliant on limited computation, storage, and energy sources. Over the past few years, Artificial Intelligence (AI) and Machine Learning/Deep Learning (ML/DL) have made significant strides and been used to enhance the efficiency of many systems. In IoUT, Machine Learning and Deep Learning (ML/DL) offers intelligent solutions for analyzing marine Data, and thus it will be thoroughly investigated in the proposed event. The proposed event will systematically review existing architecture, state-of-the-art applications and challenges of the IoUT followed by proposing a range of promising direction for research and innovation in the broad areas of IoUT, Fog computing and ML/DL.

About TIH Division IITG

TIH (Technology Innovation Hub) Division IITG TIDF is running various projects to develop technology for societal needs. Underwater exploration system for underwater monitoring and surveillance, intelligent tracking system for drone technology are a few to name.



About CIT Kokrajhar

Central Institute of Technology (CIT), Kokrajhar is situated in Kokrajhar District of Bodoland Territorial Council (BTC) in Assam. CIT has been established for the basic objective of fulfilling the aspirations of the Bodo People relating to their cultural identity, language, education and overall economic development of the region and to impart Bodo youths with requisite technological and vocational training to produce the required manpower to give the impetus to economic growth of this area and to integrate the Bodo People into the mainstream of Technical and Vocational Education. It is a Centrally Funded Institute under the Ministry of Human Resource Development, Government of India.

The Institute was established on the 19th of December 2006. The genesis of this Institute was the memorandum of Settlement on Bodoland Territorial Council (BTC) signed between the Assam Government, the Union Government and the Bodo Liberation Tigers, on February 10, 2003, in New Delhi. The Institute is an autonomous body registered under the Societies Registration Act., 1860 and functions under a Board of Governors (BOG).



Registration

Participants can register their names by filling the following google form with necessary fees details.

Google form link

<https://forms.gle/66b9rQNyBUyZMaSG9>



Fee details

Indian Participants
Faculty/Staff: 1000 INR
Students(M.Tech PhD): 500 INR
Foreign Participants: 4000 INR
Registration Link: Google form (valid till 22/05/2023)
Please make the payment via details given below:
Bank: Canara Bank
Beneficiary: IIT Guwahati Technology Innovation and Development Foundation
Account Number: 8652101030401
IFSC Code: CNRB0008652

Course Coordinators

- Dr. Amitava Nag, Professor, Dept. of Computer Science and Technology, CIT Kokrajhar. email: amitava.nag@cit.ac.in Mobile: 8240804002

- Ganesh Roy, Assistant Professor, Dept. of Instrumentation Engineering, CIT Kokrajhar email: g.roy@cit.ac.in Mobile: 9932281980

Focus Areas

Topics to be Covered

- Internet of Underwater Things (IoUT)
- Artificial Intelligence of Things (AIoT)
- Underwater Wireless Communication (UWC)
- Machine Learning Effects on IoUT Applications
- Deep learning models for real-time IoUT
- Technology for Underwater Exploration
- Deep Learning and Neural Networks
- IoT-enabled ocean monitoring applications
- Underwater Wireless Sensor Networks (UWSNs)
- Design and Development of ROV for underwater Exploration
- IoT-enabled ocean monitoring applications
- Mobile Robotic System by Involving IoT and AI Techniques
- Unresolved research problems, challenges, and opportunities of IoUT

Experts:

- Prof. Sukumar Nandi, Dept. of CSE, IITG
- Prof. S. K. Dwivedy, Dept. of Mech.Engg., IIT Guwahati
- Prof. Debashish De, School of IT, MAKAUT, India
- Prof. Subhasis Bhaumik, Dept. of AE and AM, IIST Shibpur
- Dr. Jyoti Prakash Singh, Dept. of CSE, NIT Patna
- Dr. Pranav Kumar Singh Dept. of CSE, CIT Kokrajhar
- Dr. Suman Deb, Dept. of CSE, NIT Agartala
- Dr. Ranjan Maity, Dept. of CSE, CIT Kokrajhar
- Dr. Apurbal Senapati, Dept. of CSE, CIT Kokrajhar
- Dr. Mourina Ghosh, IIIT Guwahati
- Dr. Nabajyoti Mazumdar, IIIT Alahabad
- Dr. Ravi Kant Jain, CSIR-Central Mechanical Engineering Research Institute, Durgapur
- Dr. Ferdous Ahmed Barbhuiya, IIIT Guwahati
- Dr. Baidyanath Saha, Concordia University of Edmonton, Alberta, Canada
- Mr. Himanshu Shaw, Real-time Systems Laboratory, Electrical and Computer Engineering, University of Houston, Texas, USA