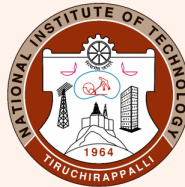




ACCELERATE
विद्यया



Hardware Implementation of Machine Learning and Deep Learning Algorithms using FPGA: A Hands-On Approach

(Under the KARYASHALA Scheme - A SERB initiative)

Jointly Organized by

Department of Electronics and Communication Engineering & Department of Computer Applications
National Institute of Technology, Tiruchirappalli

05th – 11th December 2022

About The Institute:

National Institute of Technology (formerly known as Regional Engineering College) Tiruchirappalli is one among the premier Institutions of India and is well known for its high standards in teaching and research. It offers 10 undergraduate and 23 postgraduate programs in disciplines spanning engineering, science, architecture, and management. It has been declared as an Institute of National Importance by the Government of India under NIT Act. NIT Tiruchirappalli retained its No. 1 position among all NITs, 6th year in a row in the “India Rankings 2021” released by NIRF. The Institute has signed MoUs with various Industries and Institutions both in India as well as in abroad to promote collaborative research and consultancy.

Department of Electronics and Communication Engineering:

The Electronics and Communication Engineering (ECE) Department was established in the year 1968. The department offers Undergraduate (UG), Postgraduate (PG), M.S. (By Research) and Ph.D. degree programs that provide students with the knowledge and tools they need to succeed in the Electronics and Communication Engineering. Research in the department focuses on high-impact various disciplines: Communication systems, Wireless networks, Signal and Image Processing, RF MEMS and MIC, Microwave antennas, Optical communication and Photonics, VLSI technologies.

Department of Computer Applications (CA)

The Department of Computer Applications is one of the pioneering departments of the institution that offers Information Technology courses including MCA, M.Sc. Computer Science, and M. Tech. Data Analytics. It is dedicated to the mission of inculcating value-based, socially committed professionalism to the cause of overall development of students and society.

About the Programme:

Machine learning has emerged to be a key approach to solving complex cognition and learning problems. Deep neural networks, in particular, have become pervasive due to their successes across a variety of applications, including computer vision, speech recognition, natural language processing, etc. While machine learning algorithms deliver impressive accuracy on many deployment scenarios, the complexity of the algorithms also poses a unique computational challenge to state-of-the-art hardware design. To this end, this workshop is designed to help students come up to speed on various aspects of hardware for machine learning, including basics of deep learning, deep learning frameworks, hardware accelerators, co-optimization of algorithms and hardware, training and inference, support for state-of-the-art deep learning networks.

Focus Areas:

- Machine Learning and its Applications
- Basics of FPGA Programming & ML Algorithms on FPGA
- Deep Learning and its Applications
- Basic Deep Learning Algorithms on FPGA
- Computing Convolutionals & Reducing Complexity,
- Computationally Efficient Deep Networks on FPGA
- Parallel Processing Concepts & Optimization of Algorithms on FPGA
- Network on Chip, Signal Processing on FPGA
- Image Processing Algorithms on FPGA
- Hardware Accelerator for Machine Learning
- Hardware Design Flow, Software Design Flow using Vitis

Target Audience: Research scholars, PG Students

Resource Persons: The course faculty includes resource persons from IITs, NITs, Coreel and Xilinx.

The number of participants is restricted to 25.

Timing: 09.30 AM - 12.30 PM & 02.00 PM - 5.00 PM

There is no Registration Fee, TA will be given as per government norms, Free Food & Accommodation

How to apply:

1. The applicant should fill the online form to apply using the link : <https://forms.gle/72UpX61vKbKsmot1A>
2. The applicants must produce a letter of authentication from their Supervisor/HoD/Head of Institute indicating their association with institute and “No Objection Certificate (NOC)” for allowing their student to undergo karyashala, if selected.

The last date to apply is 10th November 2022.

Coordinators:

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