A National Level Workshop on

"Understanding the capabilities of FPGA's for Image Processing and Machine Learning"

27th& 28thSeptember 2024

Organized by Department of ECE,JNTUH UCESTH
In collaboration with
CoreEL Technologies

Head of the Department

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REGISTRATION FORM

Name:……

Designation:…….....

Qualification:…….…….....

Name of the college:.....

…….....

Mobile:…….....

Mail Id……..……...……

Signature of Participant Signature of Principal

RegistrationFee– 200/- (Spot Payment)
RegistrationLink:

https://forms.gle/vWpEJiVCsnhYFvhz5

Last date for Registration: 25th September, 2024.

Course Outline:

- Introduction to FPGA Design flow Using AMD Vivado ML Edition
- Working on an IP Based Design Flow example
- Embedded System design Using Vitis
- Designing with IP integrator
- Extending the Embedded System into Programmable Logic
- Understanding the capabilities of FPGA for Image Processing
- Hands-On project on Image Processing
- PYNQ Python Productivity Flow for Machine Learning
- Demonstration of Python Productivity using PYNQ Z2.

Resource Person:

Mr. VenuMadhav

Field Application Engineer

CoreEL Technologies, Bangalore.

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Jawaharlal Nehru Technological University, the **First Technological University** of India, was established on 2nd October 1972 in Andhra Pradesh with headquarters located in the historical city, **Hyderabad.** The University is one of the premier Universities in India accredited by **NAAC** with **A+** Grade. After successful and proven levels of appreciated existence and statures panning over many years, JNTU has been divided into four different universities by Govt. of Andhra Pradesh through ActNo.30, Dt.24th September, 2008. One of the constituent colleges of the University **"JNTUH University College of Engineering, Science and Technology, Hyderabad"** is regarded as a pioneer in shaping the excellence of some of the leading organizations of the industry, by churning out the finest professionals with dedication to scale greater heights in the technological scenario.

The Department of **Electronics & Communication Engineering** established in1973, is instrumental in moulding the careers of students and helping them to become world-class professionals. The department is offering UG, PG, Research and Collaborative Programmes with well experienced faculty and as well as established laboratories.

ECE Department Vision:

To become a pioneer of present and future trends in Electronics and Communication technology with comprehensive outlook through the Continuous process of integrating academia, industry and Synergizing Global Collaborations.

ECE Department Mission:

- Promoting technical symbiosis between the Department and Industry through UG/PG programs and Research.
- Supporting start-ups and incubators for socially responsible endeavors.
- Playing a vital role in the industry, government and civil societies where technology is a key strategic component.
- Establishing Academic Collaborations with International Institutions and Organizations.

About workshop

The main objective of this workshop is to provide the faculty members an opportunity to develop their skills in FPGA's for Image Processing and Machine Learning which has a remarkable importance in the field of VLSI technology today. It is also helps the participants to learn more About Embedded System Design using Zynq, AXI Protocol and Python Productivity using PYNQ Z2. The Workshop aims to enlighten the participants who wish to enhance skills in HDL and gain experience in realization of designs on hardware.

About CoreEL Technologies

CoreEL Technologies (I) Pvt Ltd, CoreEL is a customer Application Specific Products & Solutions company offering Intellectual Property (IP) Hardware, Software & Engineering Services to customers, enabling them to Design Manufacture and Market world class electronic products. The portfolio of offerings include IP cores, System Design, Architecture, Validation, Sustenance, Prototype Manufacturing, Next-Gen products, Semiconductor solutions & Distribution of EDA Tools & COTS products. CoreEL was founded in 1999 and is an ISO 9001:2008 certified head quartered at Bangalore India.

AboutCoreEL University Program

The CoreEL University Program (CUP) focuses on bringing the latest electronics design and embedded computing platforms to institutes of higher learning labs thus, enhancing the quality of technical education in India. Exposure to the latest technology platforms offer a comprehensive learning experience to ensure that the industry-academia gap is reduced.

CoreEL believes that in the world of technology, a skilled workforce is essential. The latest technological innovations and best practices are best absorbed in the academic phase. CoreEL University solutions focus on bringing high-end electronics design and embedded computing platforms to colleges and universities' labs, enhancing the experience of technical education and real-time practice on agile technologies. The induction of the latest technology platforms offers an immersive learning experience to students and trainers to ensure that future industry needs are met. CoreEL enables academia to push industrial learning barriers and thanks to the substantive support of its technology partners and solution providers.

The CoreEL University Program offers the distribution of world-class design suites, development platforms, tools, and technical support to the academic community.

Workshop Outcomes

- Understanding of AMD 7-series FPGA's
- Designing with AMD Vivado Tool
- Understanding the System on Chip Architecture
- Designing Embedded systems using IP based Design flow
- Understanding the PYNQ Python Productivity
- Getting familiar with the Jupyter Notebook interface
- Understanding the capabilities of FPGA's for implementing High-end Applications