



**EDGE  
COMPUTING**




**DISCOUNTS ARE AVAILABLE**

# HANDS-ON EDGE ARTIFICIAL INTELLIGENCE USING EMBEDDED MACHINE LEARNING

**CPD COURSE  
(PEC)**



  
**START FROM  
16-SEP-2023**

**DURATION  
20 HOURS**

**NUST CERTIFIED  
COURSE**

## COURSE DESCRIPTION:

Artificial Intelligence is the most rapidly growing field due to its huge and broad spectrum applications in all domains. However, AI algorithms are very computational extensive and require GPU's and other heavy computing platforms. Edge computing or Edge AI, the embedded version of AI with tinyML getting very popular due to its ability of providing an embedded platform for a quick and less resource hungry platform for processing and deploying AI algorithm for millions of applications on edge devices which includes single board computer, Arduino Board and Smart Phones.

## COURSE OUTLINE


- INTRODUCTION TO MACHINE LEARNING
- INTRODUCTION TO NEURAL NETWORK
- USING A MODEL FOR INFERENCE
- DEPLOY AND EVALUATE MODEL ON EMBEDDED SYSTEM

**LEARNING INVESTMENT \$  
RS: 16,000/-** 



**Scan For Registration**

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**NUST KARACHI CAMPUS**



# EDGE COMPUTING

PDC

NUST-PNEC

**NUST CERTIFIED  
COURSE**

## WORKSHOP CONTENTS:

### **PRACTICAL EDGE COMPUTING (EDGE AI) USING EMBEDDED MACHINE LEARNING:**

In this course, students will be introduced the concept of tiny machine learning and Edge AI to solve problems. The course will also cover the application of machine learning on embedded systems such as single board computers and microcontrollers. The students will be given a hand-on experience of training and deploying a Neural Network based machine learning model on an embedded platform and evaluating its performance. The course concludes with a challenge of classification project where they will have the opportunity to implement the concepts learned.

The course will be taught in different modules with a practice quiz/assignment at the end of each module as follows

#### **MODULE 1 INTRODUCTION TO MACHINE LEARNING**

1. Introduction to Machine Learning
2. Tiny ML, Embedded Machine Learning & Edge AI
3. Edge AI Platforms and their implementations

#### **MODULE 2 INTRODUCTION TO NEURAL NETWORK**

1. Introduction to Neural Network
2. Neural Networks and Training
3. How to Evaluate a Model
4. How to Use a Model for Inference

#### **MODULE 3 USING A MODEL FOR INFERENCE**

1. Using a Model for Inference
2. Testing Inference over embedded systems
3. Project: Deploy and Evaluate Model on Embedded System

### **ABOUT THE TRAINER:**

Dr Gul Shahzad is working as Assistant professor in the department of Electronic and Power Engg dept and is also the director of Artificial Intelligence Lab.

He has done his PhD from Hanyang University South Korea in Electronics Engineering and did his research in the domain of Internet of Things (IoT) while working on a Korean Government funded smart city project. Dr. Gul did his masters from Germany in information of communication Engineering and has worked in Franhofer institute and max Planck institute, two prestigious Research and Development organizations in Germany.

In PNEC-NUST, Dr. Gul is involved in teaching at both graduate and postgraduate level in the relevant domain such as AI and Decision Support System, AI & Machine Learning, Advanced Wireless Communications, Digital Signal Processing. He is also the founder and advisor of NRAI (NUST Artificial Intelligence and Robotics) society, which is involved in the development of AI enabled Humanoid robot.

## **CONTACT US**

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