

Learning Edge AI in embedded systems provides numerous advantages, particularly as the demand for intelligent devices continues to grow. Edge AI refers to running AI algorithms on devices directly at the "edge" of a network (closer to where data is generated) without relying on cloud processing.

EDGE AI

Course Content:

Duration: 30 Days

Sl.No	Topic
1.	Neural Network: <ul style="list-style-type: none">• ANN versus BNN• Basic Building blocks• Learning in ANN
2.	Supervised Learning <ul style="list-style-type: none">• Regression• Logistic Regression• Classification• Naive Bayes Classifiers• K-NN (k nearest neighbors)• Decision Trees• Support Vector Machine

3.	Unsupervised Learning <ul style="list-style-type: none"> • Hierarchical clustering • K-means clustering • Principal Component Analysis • Singular Value Decomposition • Independent Component Analysis
4.	Reinforcement Learning <ul style="list-style-type: none"> • Markov Decision Process • Q learning
5.	Keras and Tensorflow <ul style="list-style-type: none"> • Introduction and Configuration • Modules • Layers • Models • Evaluation and Prediction
6.	Capture and Label data from Sensors via Microcontroller
7.	Emulation using Nano Edge AI Studio <ul style="list-style-type: none"> • Anomaly Detection • Class Classification • Extrapolation
8.	Getting started with X-Cube-AI <ul style="list-style-type: none"> • Installation • Artificial Intelligence (AI) IDE-based project for STM32 microcontrollers with automatic conversion of pretrained Neural Networks (NN) and integration of the generated optimized library.

9.	Implement a Learning Model on a Microcontroller.
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Learning Edge AI in embedded systems offers several advantages:

Technical Mastery: Understanding AI and embedded systems.

Real-World Applications: Opportunities in industries like healthcare, industrial automation, smart cities, and more.

Career Growth: High demand for Edge AI professionals.

Innovation: Empowering you to develop intelligent, autonomous devices.

Edge AI in embedded systems represents the future of intelligent, decentralized computing.

