

3 Months (80 Hrs)

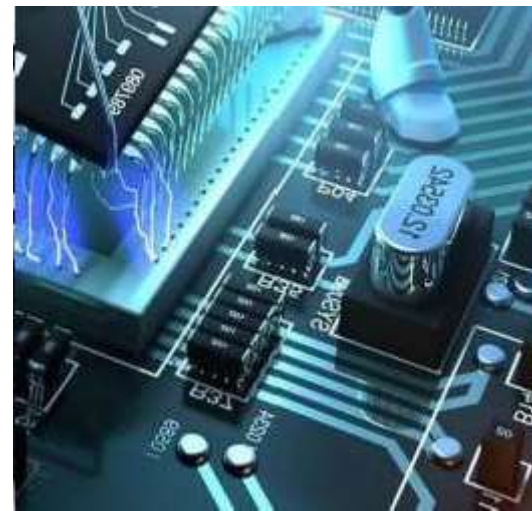


# Online Certification In IoT, Cloud Computing and Edge AI

By E&ICT Academy, IIT Guwahati

The Certification Program in **IoT, Cloud Computing & Edge AI** has been designed with E&ICT Academy, IIT Guwahati and industry leaders to provide the best learning outcome. This 3-month extensive program will help you to learn to specify, design and program modern connected electronic systems based on commodity smartphones and sensor networks.

The transformative intersection between the Internet, mobile and sensor technology has inspired this course. Learn to create the next generation of IoT-enabling technologies, by designing an IoT system to connect Cloud Computing sensors using commodity smart phones via low power Bluetooth Low Energy. Skills such as IoTcloud and embedded system design are practiced.





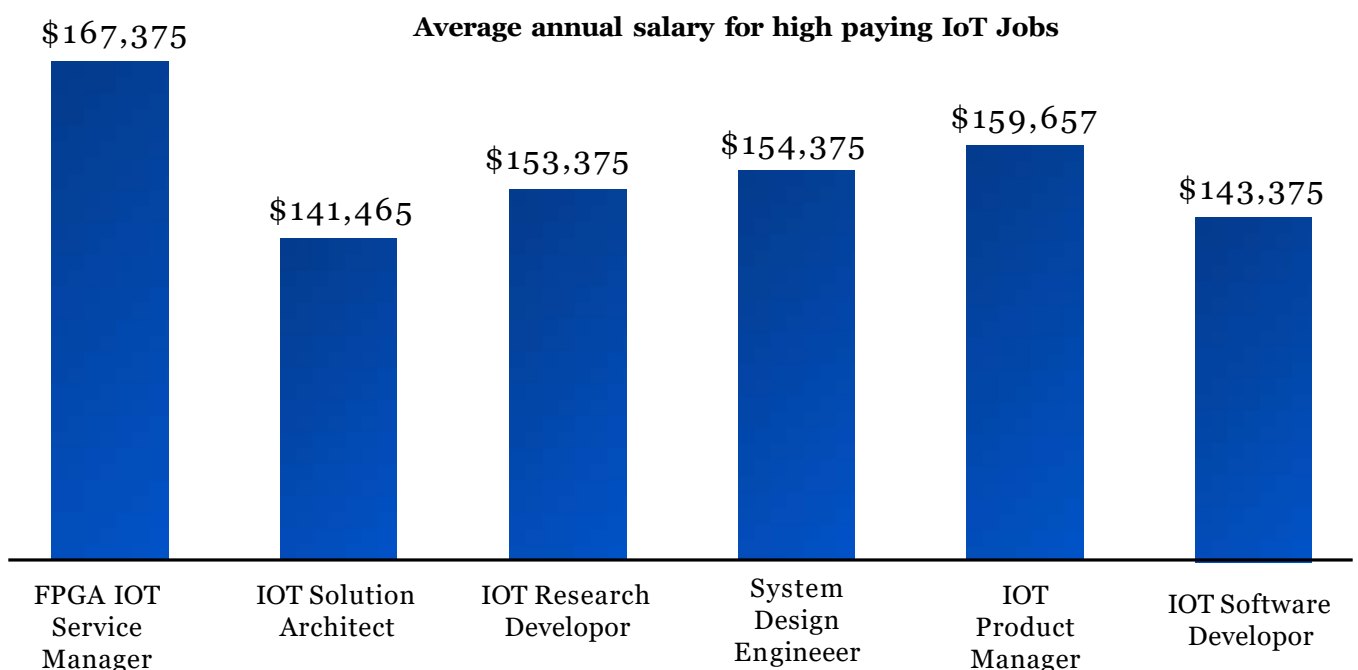
# WHY IS Cloud Computing IMPORTANT?

The IoT India Salary Study 2021 maintains that the salary of IoT professionals in India is nearly 76% higher than that of IT professionals. While IoT professionals get a median salary of Rs. 14.7 LPA, the median salary of IT professionals is around Rs. 8.65 LPA.



Google, PwC, Larsen and Toubro Ltd, Accenture, Cisco, PTC, ScienceSoft, and Tata Group of Companies are some of the prime recruiters of IoT talent.

PayScale categorizes the salary of IoT professionals based on their job roles





**Revenue for 2022 is expected to be \$321 billion worldwide**

**-Business Insider**

**BUSINESS  
INSIDER**



**By 2022, 50 billion IoT devices will be installed around the world.**

**-Gigabit**



**Companies could invest up to \$15 trillion in IoT by 2025**

**-McKinsey Digital**



**Every second, 127 devices hook up to the internet for the First time.**

**-Ericsson**





# ABOUT THE

## IIT GUWAHATI



Indian Institute of Technology Guwahati, the sixth member of the IIT fraternity, was established in 1994. The academic programme of IIT Guwahati commenced in 1995. At present the Institute has eleven departments and three inter-disciplinary academic centres covering all the major engineering, science and humanities disciplines, offering BTech, BDes, MA, MDes, MTech, MSc and PhD programmes. Within a short period of time, IIT Guwahati has been able to build up world class infrastructure and a reputation for itself.

# ABOUT

## E&ICT ACADEMY, IIT GUWAHATI



Electronics and ICT Academy aims to provide specialized training to the faculties of Engineering, Arts, Commerce, Science colleges and Polytechnics institutes by developing short term training programmes on fundamental and advanced topics in IT, Electronics & Communication, Product Design, Manufacturing. In addition, the Academy conducts specialized customized training programmes and research promotion workshops for corporate sector & educational institutions.



The Online Certification Program in **IoT, Cloud Computing & Edge AI** is offered jointly by The IoT Academy and E&ICT Academy, IIT Guwahati to prepare the future workforce in Cloud Computing and IoT

**Dr. Gaurav Trivedi**

Principal Investigator, Associate Professor, IIT Guwahati

E&ICT Academy, IIT Guwahati

“

He is actively participating many Govt of India's initiative e.g. Atmanirbhar Bharat. One of the major participation is in Semiconductor Production Initiative in India He has also setup an acqaponics project in Guwahati.

**Kaushlendra Singh Sisodia**

Director, UniConverge Technologies

“

Director at UniConverge Technologies Pvt Ltd working on ( IoT, AI/ML, Industry4.0, 4G/5G). Partner with E&ICT Academy, IIT Kanpur for IoT skill development. Employed at Ericsson, Sweden for 6.5 Years and shifted to Bangalore to build and support HSPA team. Complete end to end knowledge of WCDMA 3G system.





This 3-month program is uniquely designed by E&ICT Academy, IIT Guwahati and industry leaders to help you learn exactly what the job market demands.



**Certification from E&ICT Academy, IIT Guwahati**



**The IoT Academy Career Service from WeITGlobal**



**Hands-on program and Industry-Grade Capstone Projects**



**Industry-relevant skills for new age IoT, Cloud Computing & Edge AI**



**Designed by leading academic and industry experts along with IIT-Guwahati faculty**

# PROGRAM BENEFITS



## Practical Knowledge

Live instructor-led online classes by industry experts.



## Curriculum

Curriculum designed by professors from IITG and industry experts.



## Support and Guidance

Lifetime access to our Learning Management System and Program Support



## Career Guidance and Placement Support

Complete access to a plethora of our Career Assistance and Placement Services



## Personalised Attention

Dedicated technical and non-technical teams to resolve all your doubts



## Doubt Clearing Sessions

24x7 subject matter expert support for your technical/non-technical doubts



## Certificate/Credentials

Certificate of Completion from E&ICT Academy, Guwahati.



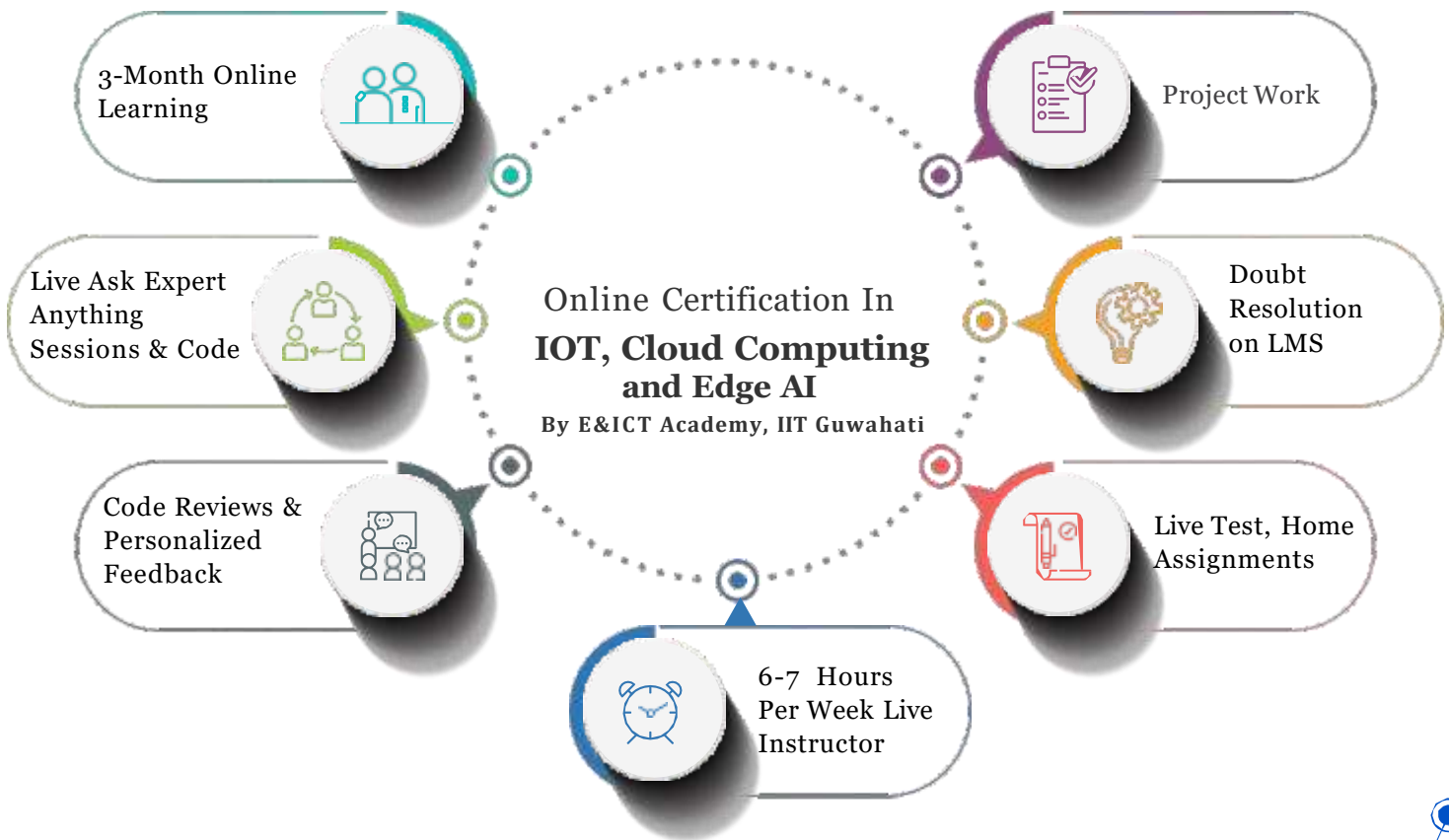
## Immersive Learning Experience

A unique learning ecosystem to give you an offline-like immersive experience



# PROGRAM PEDAGOGY

Learn from one of the best faculty in India through live online sessions. While Academic Professors will help you learn IoT, Cloud Computing & Edge AI concepts, industry experts will impart practical knowledge of IoT, Cloud Computing & Edge AI through real world projects.



## TOOLS, LANGUAGES & FRAMEWORKS



**Introduction to IoT  
And Architecture**



**IoT Protocols**



**Node-RED**



**Machine Learning  
With IoT**



**IoT/ML  
Cloud Computing**



**IoT Security**



**Certification In IoT, Cloud Computing  
and Edge AI  
Academy IIT Guwahati**





# PROGRAM CURRICULUM: LEARNING PATH

Master **Industry- IOT, Cloud Computing and Edge AI** through the most relevant curriculum designed by E&ICT Academy, IIT Guwahati and leaders from the industry.

## Introduction to IoT and Architecture

Module

01

What is IoT, IoT Architecture, IoT Applications, IoT Gateways, Middleware

## IoT Protocols

Module

02

HTTP/REST, MQTT, COAP, AMQP, Websockets, 6LoWPAN

## Node-RED

Module

03

Installation of Nodejs, Installation of Node-Red, Node-Red Dashboard

## IOT Security

Module

04

Introduction to mbed TLS and SSL, Importance of IoT application, AES encryption

## IoT/ ML Cloud Computing

Module

05

Cloud Computing, Deployment Models, AWS-IoT Core, Google IoT Cloud, LORA IoT

## Machine Learning with IoT

Module

06

Data Acquisition, Data Filtering and Pre-Processing, Tensorflow Lite, TinyML,

# CAPSTONE & LIVE SESSION PROJECTS

The projects and assignments will help you accumulate real-world experience in different industries.



Automotive Industry



Education Industry



Telecommunication



Entertainment Industry



Healthcare Industry



Manufacturing Segment



Smart Supply Chain



Production industry



Big Data Analysis





# CAPSTONE PROJECTS

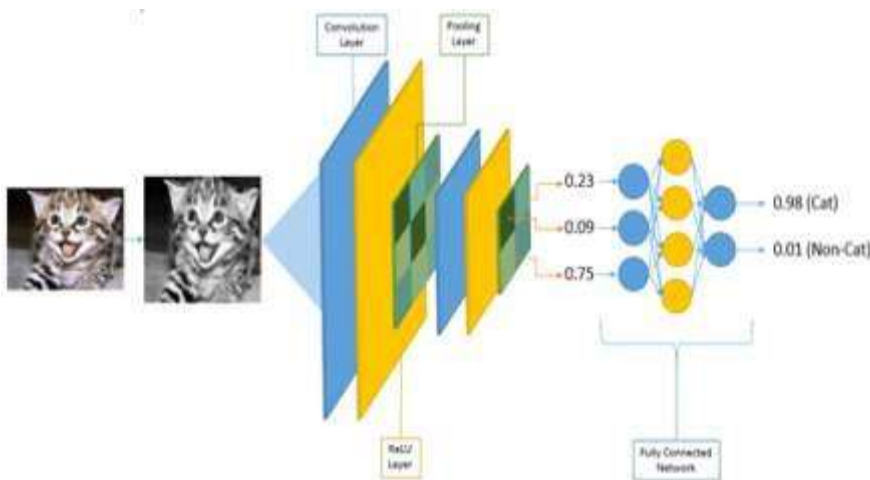
Industry projects will be a part of your Certification Program in **IoT, Cloud Computing & Edge AI** to consolidate your learning. Industry projects will ensure you have the real-world experience to start your career in Cloud Computing & Edge AI.

- 10+ Essential Tools
- Designed by Industry Experts
- Get Real-world Experience

## IMAGE CLASSIFICATION USING EDGE IMPULSE

Image classification Image Classification is one of the most fundamental tasks in computer vision. And for a reason— It has revolutionized and propelled technological advancements in the most prominent fields, including the automobile industry, healthcare, manufacturing, and more. Adding sight to your embedded devices can make them see the difference between poachers and elephants, do quality control on factory lines, etc.

**Hardware Tools you will be using:** Mobile Phone, Edge Impulse, Raspberry PI



## IOT BASED CONTACTLESS BODY TEMPERATURE MONITORING SYSTEM

The person who monitors the temperature of the people need to spend more time and it also takes more effort. So, in order to avoid this time-consuming process, we have an IOT based temperature monitoring and data collection system. In today's world, the Internet of Things is revolutionizing our life by developing a number of systems which can be monitor temperature remotely.

**Hardware Tools you will be using :**  
Raspberry PI, MLX90614 Sensor,  
Raspberry PI Camera

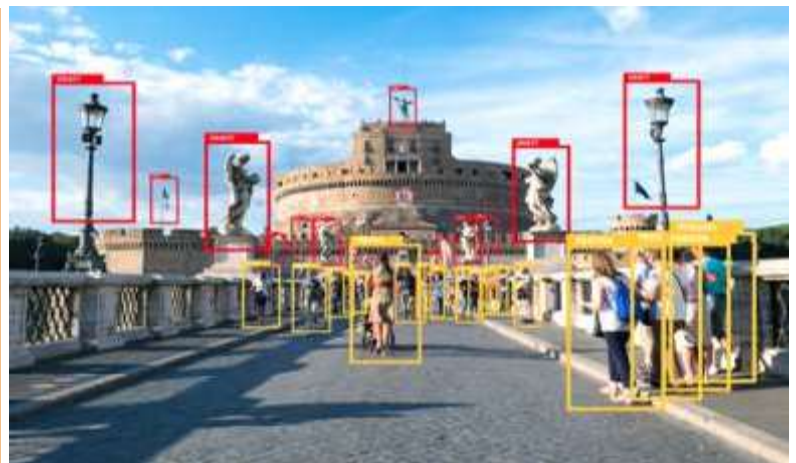


## REAL-TIME OBJECT DETECTION

Real-time object detection is the task of doing object detection in real-time with fast inference while maintaining a base level of accuracy. It is applied in numerous territories of image processing, including picture retrieval, security, observation, computerized vehicle systems and machine investigation.

**Hardware Tools you will be using:**

Raspberry PI Camera, Raspberry PI



## WEATHER MONITORING SYSTEM

The aim of weather monitoring system is to detect, record and display various weather parameters such as temperature, humidity. This system makes use of sensors for detecting and monitoring weather parameters and then this collected information is sent to the cloud which can be accessed using the internet. It works in different conditions.

### Hardware Tools you will be using:

Nodemcu, DHT11, Mq135 Sensor



## Vibration Analysis



## TEMPERATURE DATA RECORD ON AWS

### IOT

Amazon is not only in e-commerce but also focusing on IoT and providing cloud-based service named as AWS IoT. Here, AWS IoT stands for Amazon Web Service Internet of Things. This service allows us to connect our devices to the internet for processing, operating and exchanging data securely. We can connect our temperature Data record on AWS IoT Core

**Hardware Tools you will be using:** Nodemcu, DHT11, AWS

## VIBRATION ANALYSIS USING EDGE IMPULSE

Vibration analysis is defined as a process for measuring the vibration levels and frequencies of machinery and then using that information to analyse the behaviour of any machines and their components and on the basis of data collected from vibration analysis, we analyse how healthy machines.

### Hardware Tools you will be using:

Nodemcu, MPU6050 Sensor



## IOT FLOW BASED

### DASHBOARD

An IoT dashboard is the user interface within an IoT platform that enables users to monitor and interact with connected devices through graphs, charts and other tools and UI elements. It allows users to manage every aspect of their all-connected devices as well as gain perspective on environment through visualization of his device data.

### Hardware Tools you will be using:

Nodemcu, DHT11, Node-RED





## SMART HOME USING GOOGLE FIREBASE

A smart home system is the system that connects with your home appliances to control any specific task by remotely. We can use smart home system to programme our sprinklers, set and monitor our home security system and cameras, and can control home appliances like our refrigerators, air-conditioning and heating.

### Hardware Tools you will be using:

Nodemcu, Relay Module, Google Firebase, MIT APP Inventor

## IOT BASED WAREHOUSE MANAGEMENT SYSTEM

The rise of sales in e-commerce is good news when it comes to revenue reports and a challenge for warehouse managers —as retailers scale and expand, keeping track of large volumes of inventory becomes a demanding task. To meet the needs of an on-demand shopper, warehouses turn to IoT applications. The warehouse is the right platform for launching Internet of Things projects and validating the opportunities of the technology. That's why there's a wide range of IoT applications and use cases.

### Hardware Tools you will be using:

Nodemcu, MQ135 Sensor, DHT11



## IoT BASED FALL DETECTION SYSTEM

Emergencies can happen suddenly and without warning. That is why fall detection technology is an invaluable, life-saving feature in medical alert systems. If you can't press the help button after a fall or during a medical emergency, the automatic fall detection feature of a medical alert system can give you the peace of mind that you will still receive the help that you need. These systems automatically activate the sensors if the user suffers a fall.

**Hardware Tools you will be using:** Nodemcu, MPU6050 Sensor





## Live Career-Oriented Webinars

Live webinar sessions that include curriculum and career services walkthrough to help learners understand their learning objective and expectations of hiring managers.



## Leadership Skill Development Sessions

Recurring training sessions with experts to help learners Develop Interpersonal & Leadership Skills.



## 1-on-1 Career Mentoring Sessions

One-on-one Career Mentoring sessions on how to develop the right skills and attitude to secure a dream job.



## Exhaustive Interview Preparation

Expert tips, sample interview questions, mock interviews with constructive feedback from industry experts to gain hands-on experience of technical rounds, HR round, and more.



## Job Search Assistance & Job Feeds

Access to multiple job portals to help learners navigate through thousands of jobs including global remote jobs.



## Profile Building Assistance

A dedicated Career Coach will provide expert tips on how to create an attractive, relevant resume and LinkedIn profile.





# TOP RECRUITERS

 <b>HSBC</b>	 <b>KPMG</b>	 <b>IBM</b>	 <b>wipro</b>
 <b>MOODY'S</b> ANALYTICS	 <b>accenture</b>	 <b>genpact</b>	 <b>ORACLE</b>
 <b>kotak</b> Kotak Mahindra Bank	 <b>Honeywell</b>	 <b>firstsource</b>	 <b>HDFC BANK</b>
 <b>ICICI Bank</b>	 <b>WNS</b>	 <b>Infosys</b> Navigate your next	 <b>Deloitte.</b>

## OUR ALUMNI WORK AT

 <b>tcs</b>	 <b>accenture</b>	 <b>IKEA</b>	 <b>KPMG</b>
 <b>Mu Sigma</b> DO THE MATH	 <b>BOSCH</b>	 <b>genpact</b>	 <b>IBM</b>
 <b>EY</b> Building a better working world	 <b>wipro</b>	 <b>Infosys</b> Navigate your next	 <b>Deloitte.</b>

After completing the program, you will receive a Online Certification Program in **IoT, Cloud Computing & Edge AI**

which will be awarded jointly by E&ICT Academy, IIT Guwahati. Candidates will be able to explore a wide range of A jobs available globally, like:

**Entry-Level:**

- ☐ IoT Developer
- ☐ Cloud Engineer
- ☐ Junior Engineer



**Mid Level:**

- ☐ IoT Architect
- ☐ IoT Intergration Expert
- ☐ Cloud Developer



**Senior Level:**

- ☐ Senior IoT Developer
- ☐ Cloud native Architect
- ☐ Cloud Full Stack Developer



# PROGRAM FACULTY, INDUSTRY EXPERTS

The best of academics and industry experts to give you a robust learning experience. We aim to give you a complete exposure to real-time and relevant industry applications of the concepts learnt.



**Prof. Gaurav Trivedi**

**Co-Principal Investigator**

Electronics & ICT Academy, IIT Guwahati

[Profile](#)



**Prof. Sumit Kalra**

**Department of CSE**

Indian Institute of Technology Jodhpur

[Profile](#)



**Mr. Kaushlendra Sisodia**

**Industry Expert/Program Advisor**

Director at Uniconverge Technologies, IIT Kanpur  
Alumnus

[Profile](#)



**Dr. Ashwani Singh**

**Industry Expert**

Design Engineering Manager at Schneider  
Electric, Paris

[Profile](#)



**Mr. Jitesh Kumar**

**Senior IoT Engineer**

Senior IoT Engineer and Trainer, The IoT Academy

[Profile](#)



**Mr. Rishabh Kumar**

**Embedded System Engineer**

Senior IoT Engineer and Trainer, The IoT Academy

[Profile](#)



The best of academics and industry experts to give you a robust learning experience. We aim to give you a complete exposure to real-time and relevant industry applications of the concepts learnt.



**Mr. Vivek Kumar**

20+ Yrs Exp, Entrepreneur, Investor, Co-founder at WeITGlobal AB, Sweden and Rediflex AB, Sweden, IIT-Kanpur Alumnus



**Dr. Ashwani Singh**

18+ Yrs Exp, Schneider, Ph.D. France Engineering, Innovation Management , IIoT, Industry 4.0



**Mr. Rajiv Bajpai**

20+ Yrs Exp, Apple (USA), ex-Broadcom, ex-Samsung, IIT-Kanpur Alumnus



**Mr. Manbhawan Prasad**

20+ Yrs Exp, Product Manager at Microsoft, Ireland EMCC Certified Coach, IIT-Guwahati



**Mr. Anil Pandey**

20+ Yrs Exp, Director of R&D - Protocol Stack Development at Rohde & Schwarz MTC, UK, IIT-Kanpur Alumnus



**Mr. Ashish Shrivastava**

16+ Yrs Exp, Senior System Designer, Algorithm and System, LTE/5G Baseband at Ericsson, Sweden



**Mr. Tej Pratap Pandey**

20+ Yrs Exp, COO at Mobiotics, IIT-Kanpur Alumnus



**Mr. Deepak Singhal**

20+ Yrs Exp, Enterprise Architect Director at Capgemini, Speaker on Cloud technologies

The best of academics and industry experts to give you a robust learning experience. We aim to give you a complete exposure to real-time and relevant industry applications of the concepts learnt.



**Sunita Devi Arya**  
**Placed at**



Obtaining information from these industry insiders allows you to decipher the game's hidden codes, which will ensure your victory. The IoT Academy exceeded my expectations and assisted me in obtaining my dream job at IKEA.



**Ravi Teja**  
**Placed at**



Every part of the training was well-organized and provided just what I required. The professors were excellent, the mentors were helpful, and the course was well-designed to meet all of the student's needs.



**Srividhya HK**  
**Placed at**



The IoT Academy assisted me in correctly channelling my energy, revising what I had learnt in college, and learning new things! Also, the industry training, which assisted me in getting a job at a reputed company.



**G Shravan Kumar Reddy**  
**Placed at**



I wanted to improve my knowledge of AI and Machine Learning so that I could keep up with the newest trends and technology. IoT Academy is the name I've chosen for myself. The IoT Academy support staff and mentors were great help. "Highly recommended for people interested in learning about AI and Machine Learning."

# CERTIFICATIONS

Upon successfully completing this program, you'll earn **Online Certification in IoT Cloud Computing and Edge**

that is co-branded by **E&ICT Academy, IIT Guwahati** as the Knowledge Partner.

This certificate will testify to your skills as an expert in **Cloud Computing & Edge AI**

## Sample Certificate



Certification ID: XXXX



**Electronics & ICT Academy**

Supported by Ministry of Electronics and Information Technology (MeitY), Govt. of India

**Indian Institute of Technology, Guwahati**

### Certificate of Completion

This is to certify that Mr./Ms.

**XXXX**

has successfully completed the online

**Certification In  
IoT, Cloud Computing & Edge AI**

organized by Electronics & ICT Academy Indian Institute of Technology, Guwahati

held from XXXX to XXXX.

This is an online certification programme conducted jointly by E&ICT Academy, IIT Guwahati and The IoT Academy towards upskilling.

**Prof Ratnajit Bhattacharjee**  
Principal Investigator  
E&ICT Academy, IIT Guwahati

**Prof Gaurav Trivedi**  
Co-Principal Investigator  
E&ICT Academy, IIT Guwahati

**Kaushlendra Sisodia**  
Director  
Uniconverge Technologies



## PROGRAM ELIGIBILITY CRITERIA

**Those wishing to enrol in the Online Certification Program in IoT, Cloud Computing & Edge AI By EICT Academy IIT Guwahati will be required to apply for admission**

**For admission to the Online Certification Program in IoT, Cloud Computing & Edge AI, candidates should have:**

- Any Undergraduate Degree holder like BCA, B.Tech, B.E, B.Com etc with an average of 50% or higher marks.
- Basic understanding of Cloud Computing & IoT.
- Working Professionals with 1+ years of experience are preferred to apply for this program.
- Fresher can also Apply.



The application process consists of four simple steps. An offer of admission will be made to the selected candidates and accepted by the candidates upon payment of the admission fee.

1



## Online Application Form

Apply by filling a simple online application form. You will be required to provide personal, educational, and professional details. Once we receive your details, our Admission Head will reach out to take your candidature further.

2



## Interview Process

Go through a screening call with the Admission Director's office who will gauge your passion and eligibility for the program.

3



## Scholarship & Offer Letter

Apply for the scholarship (not mandatory) and take the test. An offer letter will be rolled out to the selected candidates.

4



## Admission & Batch Allotment

Complete the admission and make a quick block payment formality with assistance from our loan partners, you will be given course credentials and your learning journey will begin!



## Program Information:

**Online Certification In IoT, Cloud Computing and Edge AI  
By E&ICT Academy, IIT Guwahati**



 [www.eict.iitg.ac.in](http://www.eict.iitg.ac.in)



 [www.theiotacademy.co](http://www.theiotacademy.co)

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