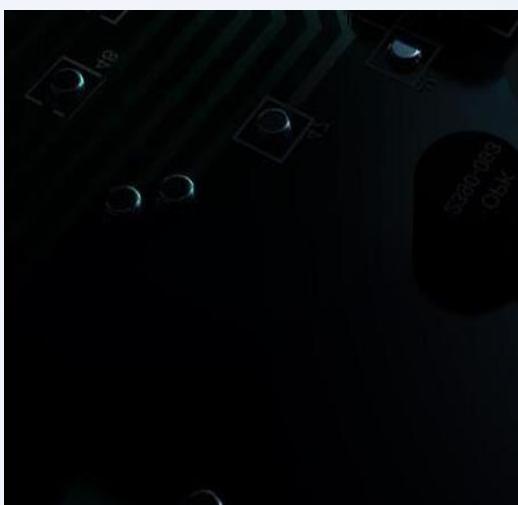
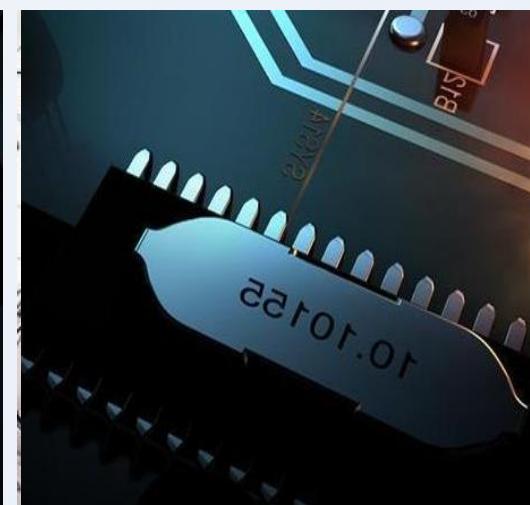
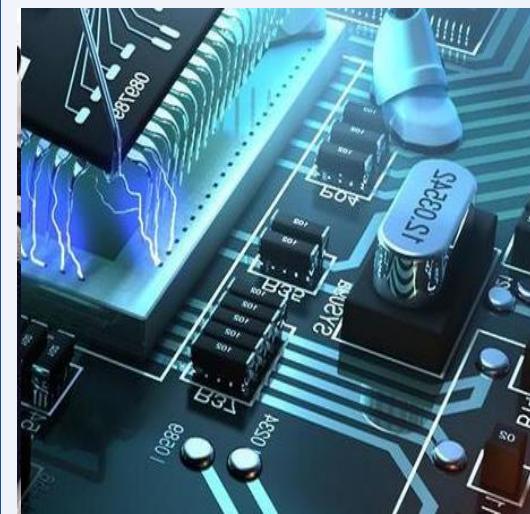


# ABOUT THE PROGRAM

The Certification Program in **Embedded Systems and IoT** has been designed with E&ICT Academy, IIT Guwahati and industry leaders to provide the best learning outcome. This 9-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 embedded sensors using commodity smartphones via low power Bluetooth Low Energy. Skills such as IoT cloud and embedded system design are practiced.



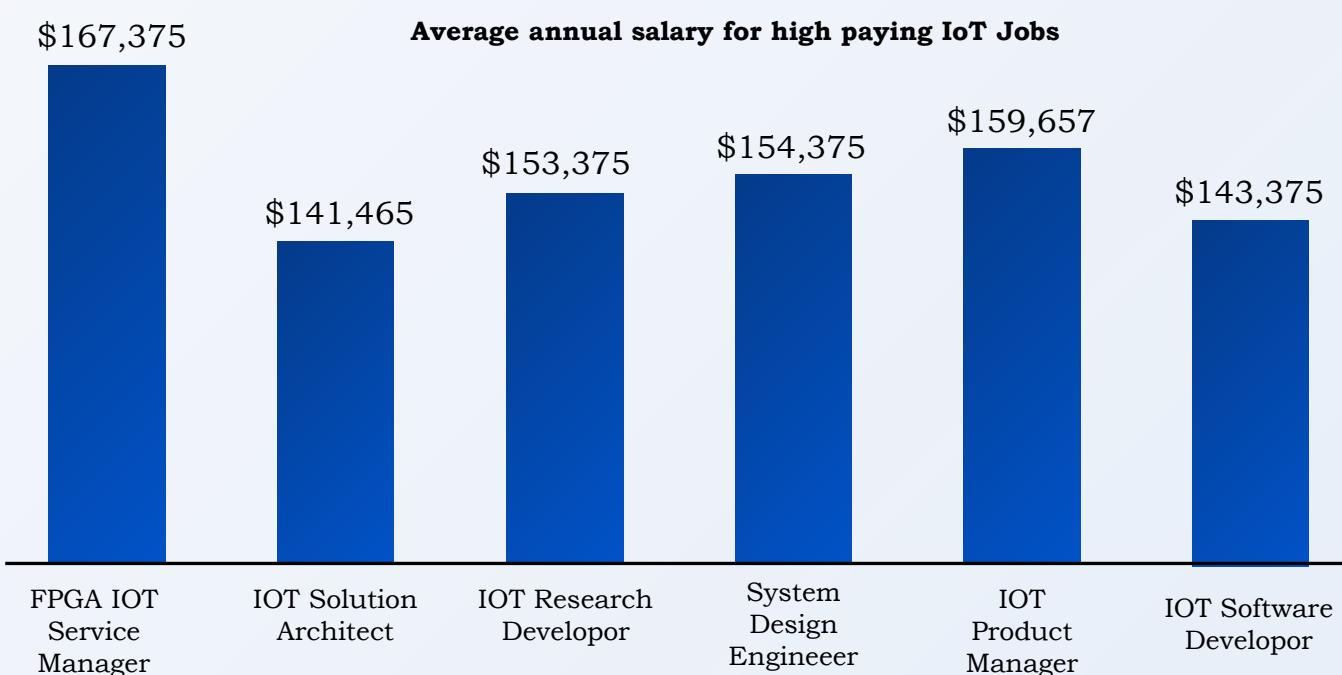
# WHY IS EMBEDDED AND IOT IMPORTANT?

The IoT India Salary Study 2020 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. 15.2 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



# CURRENT TRENDS IN EMBEDDED-IOT JOB MARKET



**Revenue for 2020 is expected to be \$212 billion worldwide**

-Business Insider

BUSINESS INSIDER



**By 2021, 35 billion IoT devices will be installed around the world.**

-Gigabit

**Gigabit**



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

-McKinsey Digital

McKinsey Digital



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

-Ericsson

**ERICSSON**



# ABOUT THE IIT GUWAHATI

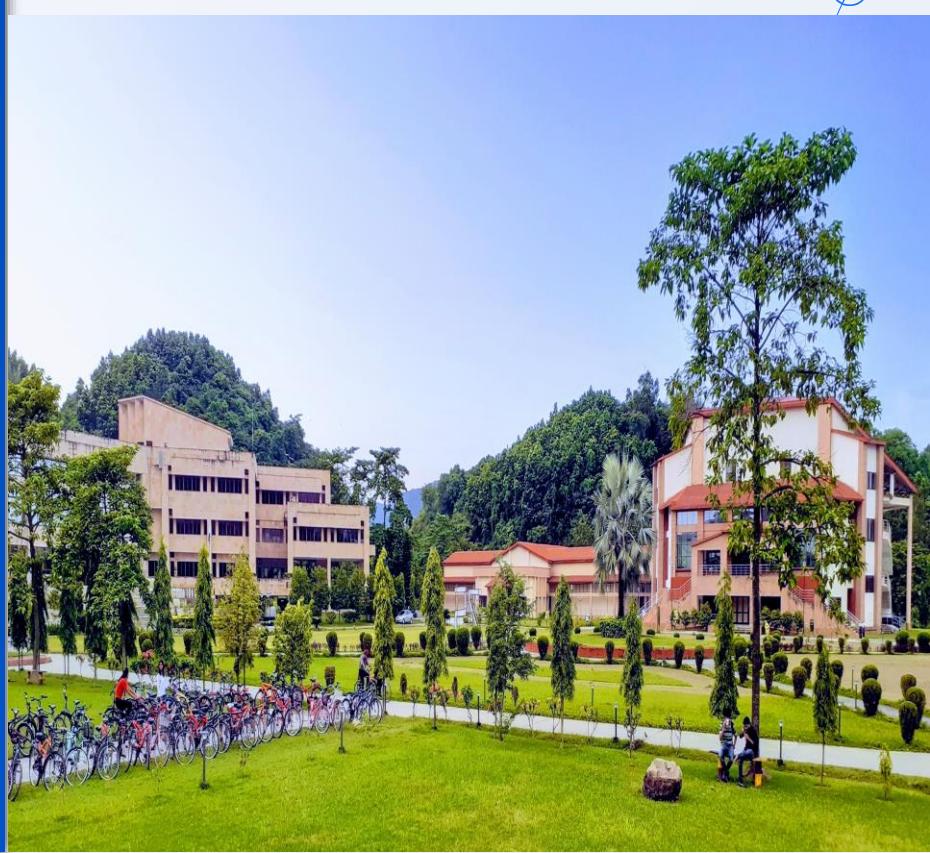


Indian Institute of Technology Guwahati, the sixth member of the IIT fraternity, was established in 1994. The academic programme of IIT Guwahati commenced in 1995. At present the Institute has eleven departments and three inter-disciplinary academic centres covering all the major engineering, science 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.



# ABOUT THE PARTNERSHIP

The Advanced Certification Program in **Embedded Systems and IoT** is offered jointly by The IoT Academy and E&ICT Academy, IIT Guwahati to prepare the future workforce in Embedded Systems and IoT



**Prof. Ratnajit Bhattacharjee**

Principal Investigator

E&ICT Academy, IIT Guwahati



**Kaushlendra Singh Sisodia**

Director, UniConverge Technologies

“

Ratnajit Bhattacharjee (Member, IEEE) received the B.E. degree (Hons.) in electronics and telecommunication engineering from NIT, Silchar, India, the M.Tech. degree in microwave engineering from IIT Kharagpur, India, and the Ph.D. degree in engineering from Jadavpur University, Kolkata, India. He has served as the Head for Electronics and Electrical Engineering Department, IIT Guwahati, Guwahati, India, from 2011 to 2014, where he is currently a Professor. He is also the Chief Investigator for MeitY sponsored project for setting up of an EICT academy, IIT Guwahati.

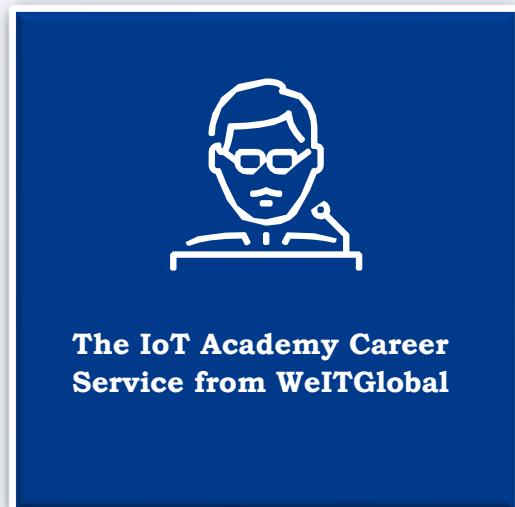
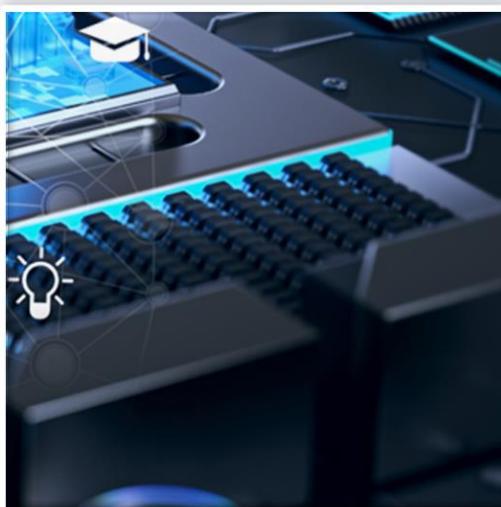
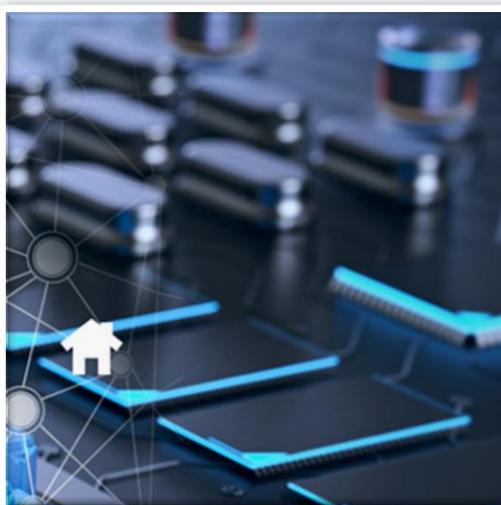
“

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.



# PROGRAM HIGHLIGHTS

This 9-month program is uniquely designed by E&ICT Academy, IIT Guwahati and industry leaders to help you learn exactly what the job market demands.



# 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

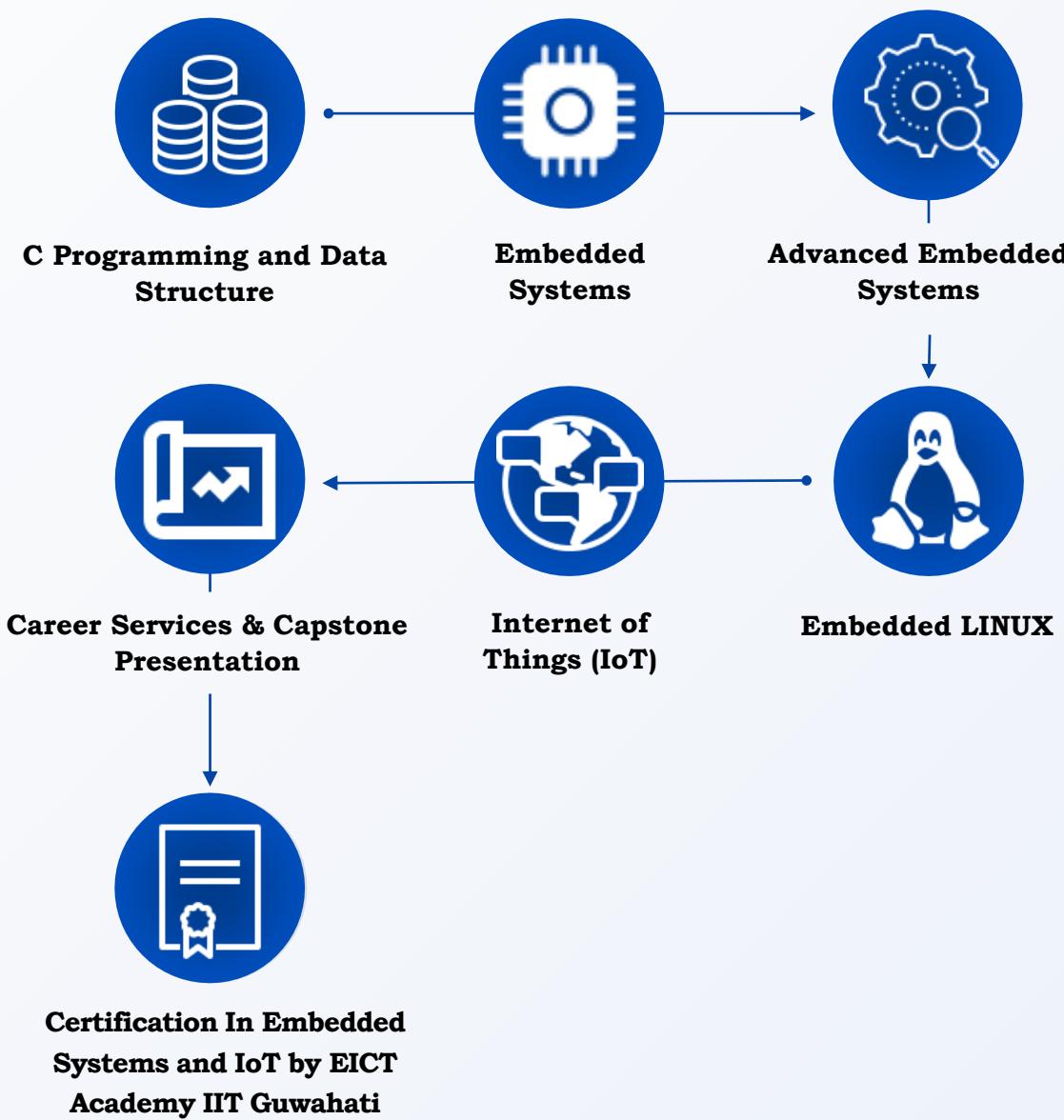
# PROGRAM PEDAGOGY

Learn from one of the best faculty in India through live online sessions. While Academic Professors will help you learn data science concepts, industry experts will impart practical knowledge of machine learning, deep learning, and AI techniques through real-world projects.



## TOOLS AND TECHNOLOGIES


# LEARNING PATH



# PROGRAM CURRICULUM: LEARNING PATH

Master **Industry-relevant skills for new age Embedded Systems and IoT** through the most relevant curriculum designed by E&ICT Academy, IIT Guwahati and leaders from the industry.

## C PROGRAMMING AND DATA STRUCTURE

Module

**01**

Keywords and Data types, Operators, Flow control, Functions, Arrays, Enumeration & volatile, Structure and union, File handling concepts

## EMBEDDED SYSTEMS

Module

**02**

Basic Embedded Systems, NODEMCU(Esp8266), NODEMCU(Esp8266), Network Layered Architecture Communication

## ADVANCED EMBEDDED SYSTEMS

Module

**03**

CORTEX-M ARCHITECTURE and CMSIS, DOWNLOAD AND INSTALL SOFTWARE REQUIREMENTS. Memory, Peripherals and Interfaces, RTOS

## EMBEDDED LINUX

Module

**04**

Embedded LINUX, R-PI and Embedded LINUX, Anatomy of a Linux-based system, Linux-based Embedded System Component Stack, Configuration & Build Process of an Embedded Linux System

## INTERNET OF THINGS (IOT)

Module

**05**

Introduction to IoT and Architecture, IoT Architecture, IoT Protocols Theory, Node-RED, LWIP TCP/IP STACK, IOT Security, Introduction of Cloud Computing

## CAREER SERVICES & CAPSTONE PRESENTATION

Module

**06**

Resume Building, Interview preparation workshop, Capstone Project

# CAPSTONE & LIVE SESSION PROJECTS

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



Automotive Industry



Education Industry



Banking Sector



Entertainment Industry



Healthcare Industry



Manufacturing Segment



Retail Industry



Production industry



Finance Sector



# CAPSTONE PROJECT

Industry projects will be a part of your **Advanced Certification Program in Embedded Systems and IoT** to consolidate your learning. Industry projects will ensure you have the real-world experience to start your career in ML-IOT.

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

## Home Automation

Use of home automation for smart devices taking action on their own

### Tools you will be using:

Bluetooth,wifi,Arduino,raspberrypi,alexa,NLP,AWS,Azure,IBMbluemix,Node Red



## Smart Healthcare

Use of technology to device-to-data centric solutions in healthcare

### Tools you will be using:

ARM,ARDUINO,Bluetooth,Sensors,wifi,Node Red



## Smart Farming

Monitoring crop field through sensors and automation

### Tools you will be using:

LoraWan,ARM,Soil sensor,Moisture sensor,Cellular IOT,Temperature and humidity sensor

## Smart Logistics

Increase in the real-time decision-making process in supply chain management

**Tools you will be using:** NB-IoT, GPS, gas sensor, vibration sensor, ARM, Arduino



## Wireless Metering

Smart metering to provide better connectivity and wireless solutions

**Tools you will be using:**  
LoRaWAN, NB-IoT, DLMS, rs232, rs485, Arduino, arm, AWS, IBM Bluemix, nodemcu

## Smart Grids

Use of smart grids for energy efficiency on a real-time basis.

**Tools you will be using:**  
DLMS, LoRaWAN, Bluetooth, 4G, Arm, nodemcu, Google Cloud, AWS



## Smart Street Light

Smart Street light for automatic light sensing via controller system

**Tools you will be using:**  
LoRaWAN, XBEE, ARM, NODERED

## Predictive Maintenance

To monitor, optimize & maintenance of assets on a real-time basis

### Tools you will be using:

Accelerometer, arm, nodemcu, Edge impulse, Neural network, IBM Watson, wifi



## Condition Monitoring

Help in reducing damage and maintenance costs with IoT solutions

**Tools you will be using:** Current sensing, wifi, ble, xbee, lorawan, nodered, aws



## Smart Building Automation

Simplifying tasks such as control building, security, temperature, etc via devices.

**Tools you will be using:**  
Bacnet, Modbus, Ethernet, arm, nodemcu, nodered, ibm bluemix



## Environment Monitoring

Remote environment monitoring connected virtually via different devices

**Tools you will be using:** PM2.5 sensor, air quality sensor, ARM, ble mesh, lorawan, nbiot,

## Waste management

Reduces fuel consumption while dumping waste in the city

**Tools you will be using:** wifi,nbiot,ph sensor ,moisture sensor ,gas sensor.



## Connected SupplyChain

Easier to track where goods are stored

**Tools you will be using:** temperature and humidity sensor,accelerometer ,lte,nbiot,gps,gas sensor,pressure sensor

## Industry 4.0

Automation such as split decisions based on real time data.

**Tools you will be using:** ETHERNET,Modbus,wifi,ble,arm,nodemcu,rs485,aws,nodered.



# CAREER ASSISTANCE SERVICES



## 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



## OUR ALUMNI WORK AT



# WHAT'S IN IT FOR YOU

After completing the program, you will receive a Advanced Certification Program in **Embedded Systems and IoT**

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:

- Embedded Software Engineer
- System Engineer
- IoT Architecter



## Mid Level:

- IoT Application Engineer
- Senior System Engineer
- IoT Embedded Software Developer



## Senior Level:

- IoT Solution Architect
- System Engineer IV
- Senior Software Engineer



# 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. Ratnajit  
Bhattacharjee**

**Principal Investigator**

Electronics & ICT Academy, IIT Guwahati

[Profile](#)



**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**

**Embedded Systems and IoT**

Senior IoT Engineer and Trainer, The IoT Academy

[Profile](#)



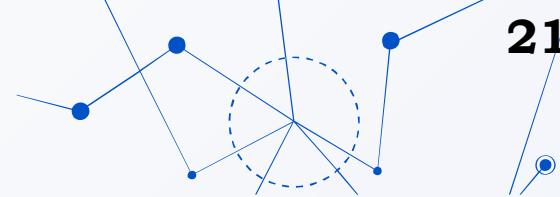
**Mr. Rishabh Kumar**

**Embedded Systems Engineer**

Senior IoT Engineer and Trainer, The IoT Academy

[Profile](#)

# PROGRAM INFLUENCER



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 Srivastava**

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



**Mr. Tej Pratap Pandey**

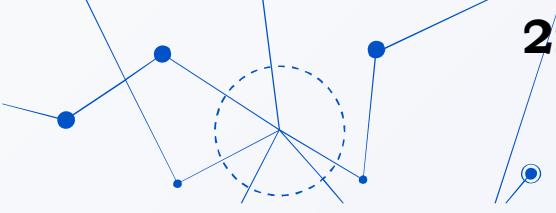
20+ Yrs Exp, COO at Mobiotics, IIT-Kanpur Alumnus



**Mr. Deepak Singhal**

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

# SUCCESS STORIES



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  
**Infosys**  
Navigate your next

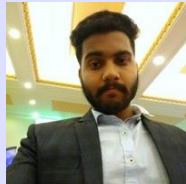
Every part of the training was well-organized and provided just what I required. The professors were excellent, the mentors were helpful, and the course was well-designed to meet all of the student's needs.



**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  
**Infosys**  
Navigate your next

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 **Advanced Certification in Embedded Systems and IoT** 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 **Embedded Systems and IoT**

## Sample Certificate



IIT Guwahati

Certification ID: 123AB67



**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.

**Shashank Vaidyar**

has successfully completed the online

### Advanced Certification Program in Embedded Systems and IoT

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

held from 1st Oct, 2021 to 31st June, 2022

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

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

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

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**Kaushlendra Sisodia**  
Director  
Uniconverge Technologies

## PROGRAM ELIGIBILITY CRITERIA

**Those wishing to enrol in the Advanced Certification Program in Embedded Systems and IoT By EICT Academy IIT Guwahati will be required to apply for admission.**

**For admission to the Advanced Certification Program in Embedded Systems and IoT, 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 programming concepts and mathematics. For candidates who do not know Python, we offer a free pre-program tutorial.
- Working Professionals with 2+ years of experience are preferred to apply for this program.



# APPLICATION PROCESS

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!

# CONTACT DETAILS



## Program Information:

[Advanced Certification Program In Embedded System and IoT](#)

[By E&ICT Academy, IIT Guwahati](#)



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

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