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#6th Ranked in India for Engineering (NIRF 2025)



Advanced PG Certificate in

# AI Engineering on Cloud and AIOps

**By Continuing Education Centre, IIT Roorkee**

## HYBRID MODE

Ideal for AI Engineers, ML Developers, MLOps Experts, and Cloud-Native Architects

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# Message from —
# Coordinator, Continuing Education Centre (CEC)

**Prof. Soumitra Satapathi** is the **Coordinator of Continuing Education Center** and **Professor of Physics and Founding Head**, Center for Sustainable Energy at **Indian Institute of Technology Roorkee**. A pioneer in **Sustainable Energy Research and materials science**, Prof. Satapathi is best known for his work on high efficiency low cost **solar cells, sustainability, AI, ML and cybersecurity**. He has published more than **175 high** impact research papers and filed several patents. Prof. Satapathi is the Fellow of **Australian Institute of Physics, Institute of Physics UK**, **Royal Society of Chemistry**, **Energy Institute UK**, to name a few. He is the **founding president** of **Perovskite Society of India**. He is the member of different empowered committees of **Govt of India and serves as expert members in different ministries**. In his long research journey, Prof. Satapathi has guided several **PhD students, postdocs** and **master's students**. He is an **entrepreneur** and also **TEDx speaker**.



*Prof. Satapathi has received several National and International awards as recognition of his pioneering work including Fulbright Faculty Fellow, Outstanding Faculty from IIT Roorkee, DRDO Scientist Award, Bhaskara Award, Govt of India in Solar Energy Research, GCRF Award from University of Strathclyde, UK, Director's award from Max Planck society, Mainz, Germany and Indo Canada Shastri Award from Shastri Institute, Canada etc. He is also a TedX speaker. Prof. Satapathi has received his MS and PhD in Physics from University of Massachusetts, USA.*

**PROF. SOUMITRA SATAPATHI**

Coordinator, Continuing Education Centre (CEC), IIT Roorkee

# Context of The Program

## Build AI Systems that Actually Scale!

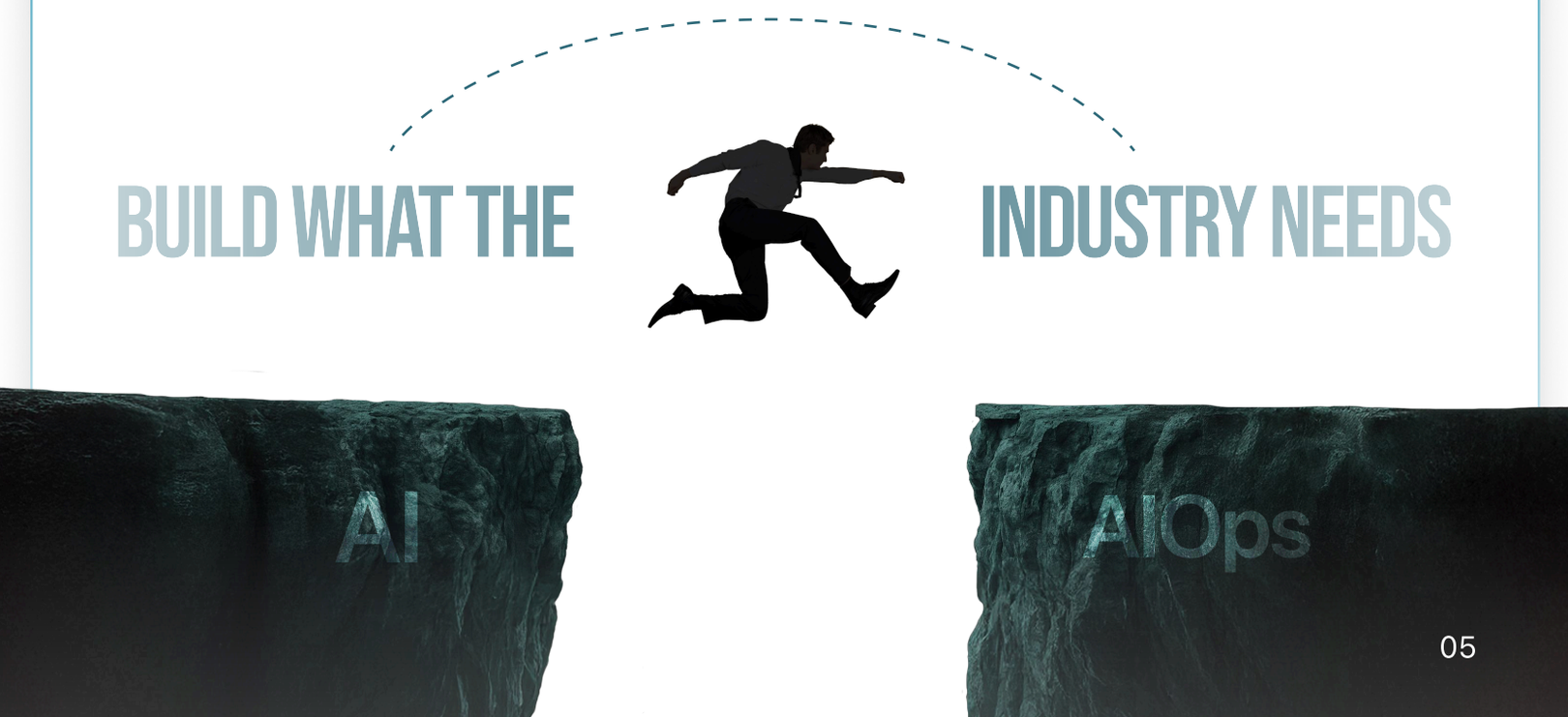
We are no longer in the age of isolated AI experiments. Today, the real impact comes from AI systems that go beyond model-building, into deployment, scaling, and lifecycle management on the cloud. **This is the Era of AI Engineering & AIOps**, where performance, reliability, and continuous learning are the baseline expectations.

**From Lab to Real World - This is Where AI Gets Real.**

## The Shift: From AI Models to AI Infrastructure

Most professionals can build models. Few can engineer full-stack AI systems, systems that handle real-time data ingestion, cloud-native deployment, observability, and rollback under enterprise-grade SLAs. **This program is designed to create those few.**

**Be the One Who Makes AI Work in the Real World.**



## The Failure of GenAI Pilots is a DevOps Problem

Over 90% of GenAI pilots never make it to production.

### Why?

Not because the models are bad, but because of weak data pipelines, outdated deployment practices, and a lack of cloud-native AI operations maturity.
This program bridges that production gap, combining AI Development with Cloud Infrastructure and AIOps to train engineers who can ship robust, scalable, and secure AI systems.

**Build What Most Can't: AI Systems that Actually Ship**

## Cloud Is Not an Add-On. It's the Foundation

Modern AI workloads, from multimodal LLMs to predictive systems run on AWS, Azure, and GCP.
This program emphasizes:

- GPU Provisioning & Cost Optimization
- Cloud-native Deployment (Kubernetes, Docker)
- Data Pipeline Orchestration (Airflow, N8n)
- Security, Observability, and Rollback Protocols

Because if your AI isn't cloud-native, it isn't production-ready.

**Production AI Starts Where Cloud Fluency Begins**

## Designed for the Full-Stack AI Engineer

Today's AI teams are shrinking in size, but growing in capability. Employers don't want fragmented teams anymore. They want engineers who can build, deploy, monitor, and scale across the full lifecycle. This program prepares you to be:

- A Cloud-fluent AI Developer
- An MLOps and AIOps Practitioner
- A GenAI & Agentic AI System Builder

## What You'll Learn to Build?

End-to-end AI pipelines that go from notebook to API to production

RAG systems and memory orchestration with vector databases

Real-time AI applications with rollback, monitoring, and latency control

Enterprise-grade AI systems, not just prototypes

Autonomous agent architectures, built using tools like LangChain, CrewAI, LlamaIndex

## Built for Engineers Who Deliver Value from Day One

This is not a research course. It's a practitioner's program for **Software Engineers**, **MLOps Engineers**, and **Data Engineers** who want to move beyond notebooks and into production environments.

Whether you're scaling fraud detection, deploying intelligent agents, or building AI-native infrastructure, this program equips you to do it at scale, reliably, and independently.
**AI Engineering on Cloud & AIOps** isn't just about writing models. It's about engineering production-grade intelligence.



# About the — Program

ARTIFICIAL INTELLIGENCE

The **Advanced PG Certificate in AI Engineering on Cloud and AIOps by IIT Roorkee is a 9-month Hybrid Program**, a first of its kind, specially designed to **Bridge the Gap between AI Pilot Use-cases and Real-world AI Deployment**.

The program empowers learners to design, build, and deploy full-stack cloud-native GenAI systems, including **Multi-agent Architectures, MLOps Pipelines, and Cloud-native AI Applications**, with a strong emphasis on security, scalability, and business impact.

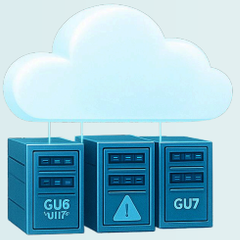
- 9-month Hybrid Program
- Advanced Certificate
- AI Engineering
- AIOps
- Cloud-Native AI
- Generative AI
- Agentic AI
- MLOps Pipelines
- Full-stack AI Systems
- Production-grade AI
- Security and Scalability
- Cloud Infrastructure
- Campus Immersion
- Futurense Bridge Course

## ✦ Why Cloud-Native AI, GenAI, and Agentic AI are at the Core of this Program?

Today's AI landscape demands more than just intelligent models; it demands production-ready systems that are **Cloud-native by Design, Scalable, and Autonomously Adaptable**.



## This Program is Built for the Real World of AI




### Cloud-native Architecture

Cloud-native architecture ensures that AI solutions are elastic, secure, and infrastructure-ready for deployment in the real world across **AWS, Azure, and GCP.**

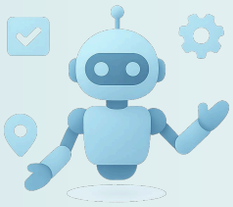
01



### Generative AI

Generative AI tools, such as LLMs and multimodal models, are at the forefront of new product interfaces and internal automation; however, without proper deployment mechanisms, they often remain stuck in prototypes.

02



### Agentic AI

Agentic AI systems are fast becoming integral in use cases that demand Continuous Reasoning, Memory Retention, and API Orchestration, Critical for Building Enterprise-grade Autonomy.

03

### Rather than focusing solely on model-building, this program equips learners to:

- Build a robust AI infrastructure on the cloud from the ground up
- Integrate hands-on Projects in building GenAI models, agent workflows, & MLOps pipelines seamlessly into live environments
- Design and deploy full-stack systems that are secure and reliable
- Live Interactive sessions with IIT faculty and top industry experts
- Use-Case-Driven Curriculum including real-world examples from finance, compliance, operations, and risk
- Weekend Classes that are designed to accommodate working professionals
- Optional 2-day campus immersion at IIT Roorkee
- Integrated Futurense Bridge Course for technical readiness

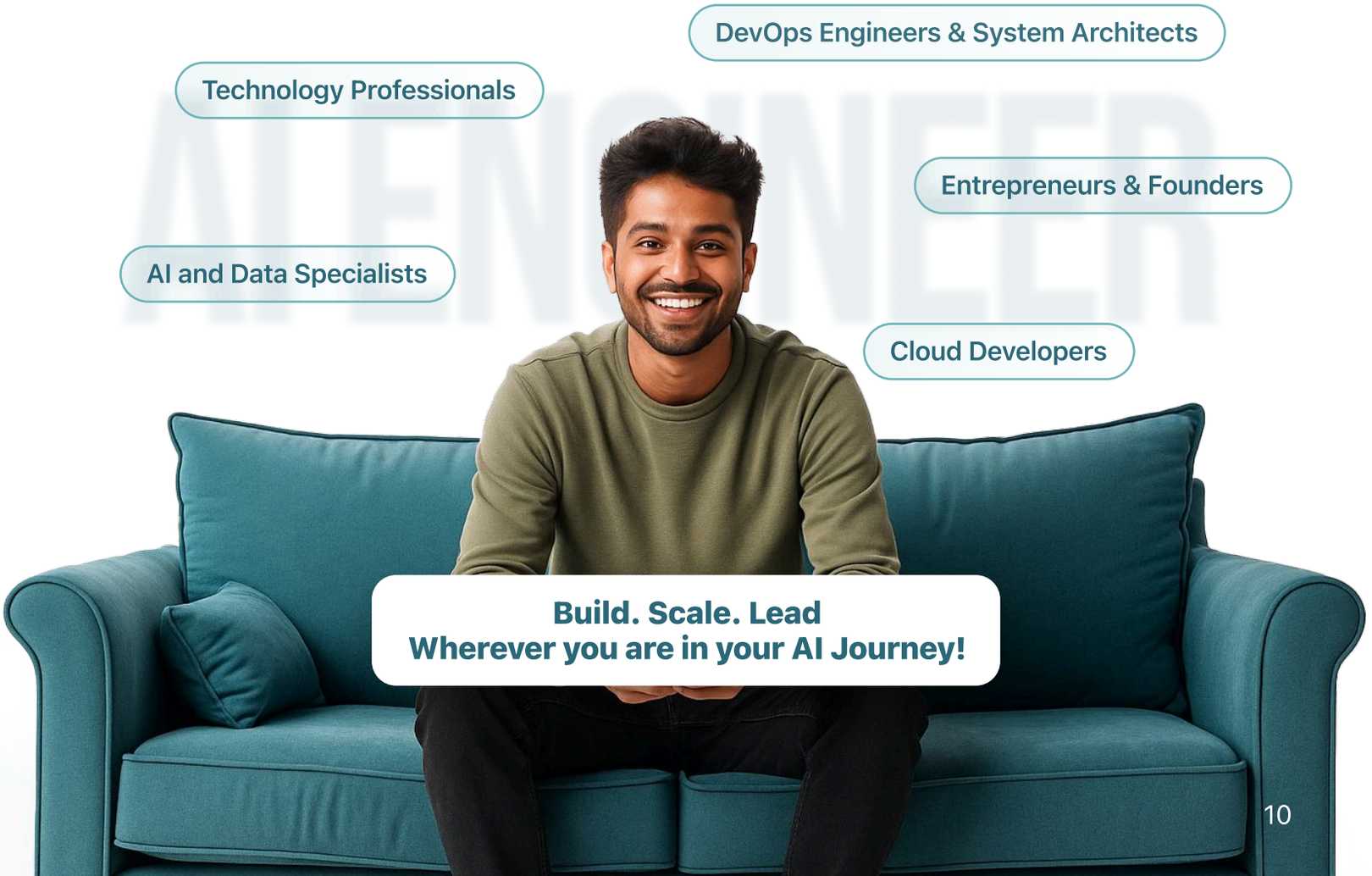
## Who is this –

# Program for?

Whether you're an experienced engineer or an entrepreneur building the next big thing in AI, this program is built to equip you with the skills to launch, manage, and scale enterprise-ready AI systems on the cloud.

## This Certificate is Ideal for:

- **Technology Professionals:** Developers and engineers working on or aspiring to work on cloud native AI apps hands-on, and looking to master end-to-end AI workflows from model design to cloud deployment.
- **Cloud Developers:** Professionals seeking to deepen their knowledge in deploying AI-native solutions in AWS, Azure, or GCP environments.
- **AI and Data Specialists:** Those aiming to shift from analysis and modeling to operationalizing AI with MLOps and Agentic AI stacks.
- **Entrepreneurs & Founders:** Visionaries creating AI-first products and platforms who want hands-on experience in full-stack GenAI system building.
- **DevOps Engineers & System Architects:** Professionals eager to add AI deployment, agent orchestration, and secure pipeline design to their portfolio.



# Program – Highlights

## What Sets this Program Apart?

This is a complete transformation journey from foundational AI concepts to **Full-scale Deployment of Production-Grade GenAI and Agentic AI Systems**. Each module has been carefully designed to build progressive expertise, supported by IIT Roorkee's academic rigor and Futurense's industry-first application design.

## YOUR 8-STEP JOURNEY TO AI MASTERY

- **AI & ML Foundations**
  Learn core concepts + cloud context
- **Cloud for AI**
  AWS, Azure, GCP essentials
- **Deep Learning & NLP**
  CNNs, RNNs, transformers, chatbots
- **Generative AI & LLMs**
  Prompting, prototyping, multimodal tools
- **GenAI Deployment**
  Docker, Kubernetes, scalable infra
- **MLOps & AIOps**
  Versioning, rollback, monitoring
- **Multi-Agent Systems**
  LangChain, n8n, memory-driven agents
- **Capstone Project**
  Build real, cloud-native AI solutions



## END-TO-END PROJECT-BASED LEARNING

Work on real-world projects aligned to enterprise-grade use-cases:

- GenAI Document Processors
- AI-Enabled Workflow Automation
- LangChain-based Customer Assistants
- Autonomous Agent Workflows
- Full-stack Cloud AI Deployments

## CERTIFICATE FROM CEC IIT ROORKEE

Earn a career-transforming certificate from **India's #6-ranked institute (NIRF 2025)** - a powerful credential for AI engineering roles worldwide.

## INDUSTRY-BACKED LEARNING EXPERIENCE

Masterclasses from tech leaders at EY, TCS, Infosys, HCLTech & McKinsey on:

- AI Engineering best practices
- Enterprise AI security
- MLOps & AIOps pipelines
- Agentic AI in production

## OPTIONAL 2-DAYS CAMPUS IMMERSION

Spend time at IIT Roorkee engaging with faculty, presenting your final project, and collaborating with fellow learners.

**By the End of the Program, you will be equipped to Lead AI Projects and Develop Scalable, Real-world AI Solutions.**



# Learner journey

01 Apply & Take the Pre-Screening Test

02 Receive admission confirmation & pay fees

03 Begin Futurense Bridge Course

04 Attend weekend live sessions

05 Complete assignments & projects

06 Attend a 2-day optional campus immersion

07 Earn a PG Certificate from CEC IIT Roorkee

## Program –

# Outcomes

By the end of this program, learners will be equipped with the capabilities to operationalize the product for real-world impact.

### Design and implement end-to-end AI and ML workflows

Including data preparation, supervised & unsupervised model training, and evaluation metrics using real-world datasets.

### Demonstrate expertise in core ML, deep learning, and NLP

Master neural networks, CNNs, RNNs, and transformers for predictive modeling and text-based AI systems.

### Apply advanced Generative AI methods

Use GANs, VAEs, and diffusion models to generate text, images, & data for both synthetic experimentation and creative automation.

### Build, fine-tune, and deploy Large Language Models (LLMs)

Use frameworks like Hugging Face, LangChain, & CrewAI to create domain-specific GenAI applications through effective prompt engineering

### Develop and manage AI-powered agents and multi-agent systems

Leverage Agentic AI stacks using orchestration tools and retrieval-augmented generation techniques to automate complex workflows.

### Deploy AI applications on the cloud

Containerize and scale AI systems using Docker, Kubernetes, AWS, and GCP while maintaining compliance, observability, and uptime.

### Operationalize AI through AIOps and MLOps

Ensure retraining, rollback, and versioning of models using pipelines that support continuous learning and monitoring.

### Address AI safety, ethics, and governance

Understand the legal and ethical implications of AI and build applications that are secure, responsible, and regulation-ready.

### Translate AI into a measurable business impact

Bridge the gap between models & outcomes with solutions that directly improve KPIs across domains like finance, marketing, operations, & product.

## Career —
# Outcomes

**Upgrade to High-Growth & High-Paying Roles in AI Engineering -**
**Master the Skills to Build, Deploy, and Scale Real-world AI Systems Across Industries.**

This program is designed not just to upskill, but to transform your career. For those with existing backgrounds in AI, ML, or data roles, the journey doesn't stop at learning new tools; it's about evolving into autonomous AI leaders.

## ✦ Role Evolution for Experienced Professionals

Whether you're a Data Scientist, Data Engineer, or MLOps expert, this certificate course helps you transition into next-gen roles

As your skillset expands from prompt engineering and workflow design to LLM optimization and multi-agent orchestration, your career path accelerates toward high-impact leadership roles in cloud-native and production-ready AI systems.

## ✦ Tools & Platforms Covered

**MACHINE LEARNING** — scikit-learn, dmlc XGBoost, LightGBM

**DEEP LEARNING** — PyTorch, TensorFlow, Keras

**AGENTIC AI** — crewai, Autogen, Semantic Kernel

**GENERATIVE AI** — Transformers, LLM APIs, Open-Source LLMs

**CLOUD** — Compute & Hosting, Storage & Datalakes, Serverless & APIs



## This Program Prepares You for –

# High-demand Job Roles

Current role and upgraded role after CEC IIT Roorkee program

### DATA SCIENTIST

**Skills**

Python, R, SQL, Basic Statistics, Data Visualization

**₹4 - 12 LPA**

### AI ENGINEER WITH GENAI SPECIALIZATION

**Upgraded Skills after attending the Program**

LLM fine-tuning, Prompt Engineering, LangChain, AutoGen, CrewAI, Agentic Workflow Design, RAG, Vector Databases

**₹18 - 35 LPA**

### MACHINE LEARNING ENGINEER

**Current Skills**

Python, Basic TensorFlow/PyTorch, Simple Model Training

**₹5 - 10 LPA**

### GENERATIVE AI ENGINEER

**Upgraded Skills after attending the Program**

Advanced GenAI, LLMs (GPT-4, Cohere), Hugging Face, Diffusion Models, GANs, VAEs, Cloud ML Platforms (AWS SageMaker, Azure ML)

**₹20 - 40 LPA**

### DATA ENGINEER

**Current Skills**

SQL, Basic ETL, Python, Simple Data Pipelines

**₹4 - 8 LPA**

### AI DATA ENGINEER

**Upgraded Skills after attending the Program**

Unstructured Data Processing, AI-driven ETL, Real-time Data Streaming, Cloud-native Pipelines (AWS, Azure, GCP), Vector Databases

**₹15 - 25 LPA**

### MLOPS ENGINEER

**Current Skills**

Basic Docker, Simple CI/CD, Model Deployment

**₹6 - 10 LPA**

### AI SYSTEMS ENGINEER WITH AIOPS

**Upgraded Skills after attending the Program**

AIOps, Multi-agent Orchestration, Advanced MLOps, Kubernetes, Prometheus, Grafana, Seldon, Evidently AI, Cloud Security

**₹22 - 45 LPA**

*Note: There is no job guarantee after completing this course, However, career support will be provided by the Futurense. IIT Roorkee will not be responsible for the career support.

### DATA ANALYST

**Skills**

SQL, Excel, Basic Python, Tableau/ PowerBI

**₹4 - 8 LPA**

### AI PRODUCT ANALYST

**Upgraded Skills after attending the Program**

Comprehensive AI/ML understanding, Business Impact Analysis, Basic GenAI applications, Data-driven insights with AI tools

**₹18 - 30 LPA**

### BUSINESS INTELLIGENCE DEVELOPER

**Skills**

SQL, Basic ETL, Power BI/Tableau, Data Visualization

**₹4 - 7 LPA**

### CLOUD AI SOLUTIONS DEVELOPER

**Upgraded Skills after attending the Program**

AI/ML integration, Cloud platforms, Basic system design, Performance optimization, Serverless AI

**₹20 - 35 LPA**

### AI ENGINEER

**Skills**

Python, Basic ML Algorithms, Simple Neural Networks

**₹5 - 12 LPA**

### AGENTIC AI ENGINEER

**Upgraded Skills after attending the Program**

Advanced Agentic AI, Multi-agent Systems, Semantic Kernel, Knowledge Base Integration, Production AI Deployment

**₹25 - 50 LPA**

### CLOUD ENGINEER

**Skills**

Basic AWS/Azure, Simple Deployments, Basic Networking

**₹4 - 8 LPA**

### CLOUD AI ENGINEER

**Upgraded Skills after attending the Program**

Advanced Cloud AI Services, Serverless AI, Auto-scaling ML Infrastructure, Cost Optimization, AI-native cloud architecture

**₹25 - 45 LPA**

*Note: There is no job guarantee after completing this course, However, career support will be provided the Futurense. IIT Roorkee will not be responsible for the career support.

# Role Evolution for Freshers & 1+ Years of Experience

Make the shift from surface learning to engineering production-grade GenAI systems, hands-on, end-to-end, and built for the real world.

## GENERATIVE AI ENGINEER

**Skills Required**

Advanced GenAI, LLMs (GPT-4, Cohere), Hugging Face, Diffusion Models, GANs, VAEs, Cloud ML Platforms (AWS SageMaker, Azure ML)

**₹12 - 30 LPA** STARTING SALARY

## AI ENGINEER

**Skills Required**

Python, Machine Learning basics, TensorFlow/PyTorch, LLM fine-tuning, Prompt Engineering, LangChain, AutoGen, CrewAI

**₹12 - 25 LPA** STARTING SALARY

## MACHINE LEARNING ENGINEER

**Skills Required**

Python, Basic TensorFlow/PyTorch, Model Training, Data Preprocessing, Feature Engineering, Model Evaluation

**₹12 - 28 LPA** STARTING SALARY

## DATA SCIENTIST

**Skills Required**

Statistical Analysis, Python, R, SQL, Data Visualization, Machine Learning fundamentals

**₹12 - 22 LPA** STARTING SALARY

## AIOPS ENGINEER

**Skills Required**

Basic Docker, Simple CI/CD, Model Deployment, Kubernetes basics, Prometheus, Grafana, Cloud platforms

**₹15 - 35 LPA** STARTING SALARY

## DATA ANALYST

**Skills Required**

SQL, Excel, Basic Python, Tableau/PowerBI, Statistical Analysis, Data Visualization

**₹12 - 18 LPA** STARTING SALARY

## AI PRODUCT ANALYST

**Skills Required**

Comprehensive AI/ML understanding, Business Impact Analysis, Data-driven insights, Product Management basics

**₹15 - 30 LPA** STARTING SALARY

## CLOUD AI ENGINEER

**Skills Required**

Basic AWS/Azure, Simple Deployments, Cloud Security, Serverless AI, Auto-scaling ML Infrastructure

**₹18 - 35 LPA** STARTING SALARY

*Disclaimer: Job outcomes vary based on experience, role, employer, location, and market conditions.

# Curriculum

## Module 1: Foundations of AI, ML, and Generative AI

- **Topics**
  - Supervised, Unsupervised Learning, Math for ML and Data Preprocessing
  - Generative AI & LLM Basics

## Module 2: Deep dive into Machine Learning Algorithms

- **Topics**
  - Linear & Logistic Regression, Decision Trees, Random Forests
  - Regularization, Evaluation & Classification Metrics, Reinforcement Learning

## Module 3: Understanding Deep Learning

- **Topics**
  - Clustering Techniques
  - Dimensionality Reduction, Pattern Discovery

## Module 4: Exploring Natural Language Processing (NLP)

- **Topics**
  - ANN Fundamentals, TensorFlow-based Neural Networks
  - CNNs, RNNs, LSTMs & Transfer Learning

## Module 5: Exploring Cloud Ecosystems

- **Topics**
  - Image Processing, CNN Architectures
  - Object Detection with YOLO

## Module 6: Advancements in Hypervisors & Virtualization

- **Topics**
  - Text Preprocessing, Tokenization
  - Vectorization (TF-IDF, Word2Vec), NLP Feature Engineering

## Module 7: MLOps for Real-World Deployment

- **Topics**
  - Cloud Concepts, Service & Deployment Models
  - AWS/Azure/GCP Overview

## Module 8: Engaging with Generative AI

- **Topics**
  - Virtualization Techniques, Hypervisor Architecture
  - VM Management & Performance

## Module 9: Transformers & LLMs using LangChain

- **Topics**
  - Model Versioning, Experiment Tracking
  - CI/CD Pipelines, Model Serving

## Module 10: Prompt Engineering & LLM Agents

- **Topics**
  - Text, Image, Audio & Video Generation
  - GANs, Autoencoders, Diffusion Models

## Module 11: Synthetic Data & Datasets for LLMs

- **Topics**
  - Transformers, Encoder–Decoder Models
  - BERT, Pretrained LLMs & Frameworks

## Module 12: Generative AI Embeddings & Retrieval

- **Topics**
  - Prompt Design, Multimodal Prompting
  - Cost Optimization, Tool & Agent Integration

## Module 13: Agentic AI & Agentic Frameworks

### Topics

- Synthetic Data Concepts
- Generation Techniques & Real-world Applications

## Module 14: Container Orchestration for LLM Systems

### Topics

- Vector Embeddings, Vector Databases
- Retrieval-Augmented Generation, Ethics & Bias

## Module 15: Cloud Security & Resilience

### Topics

- Autonomous Agents, Planning & Reasoning
- Multi-Agent Frameworks

## Module 16: Cloud for GenAI & LLMs

### Topics

- AI Infrastructure & Deployment Architectures, Cloud-Native LLM Platforms & Operations
- AI Security, Governance & Risk Management

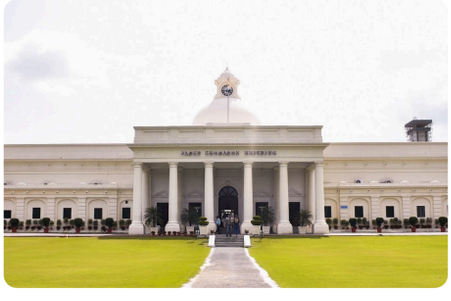
## IIT Roorkee –

# Campus Immersion

## A 2 Days Optional Campus Immersion at IIT Roorkee Provides:

- Expert live masterclass sessions led by esteemed faculty and industry leaders
- Network with peers and leading professionals in the AI and data science fields
- Explore the IIT Roorkee campus, gain access to exclusive labs and workshops, and get project feedback.

**Note:** A tentative additional fee of approximately ₹10,000 will be applicable, subject to the actual cost incurred. This will be collected separately before the immersion period. Accommodation may be provided either on campus or off campus, depending on the availability of facilities.









*Source of the photographs: IIT Roorkee website, DoMS IIT Roorkee Facebook and Instagram



## Program –
# Leadership



**PROF. NEETESH KUMAR**
Associate Professor
Department of Computer Science & Engineering

**Dr. Neetesh Kumar** brings over a decade of experience at the intersection of **Cloud Computing, DevOps, Parallel Computing, and High-Performance Computing**. He holds a **Ph.D. in Parallel Computing from Jawaharlal Nehru University (JNU), New Delhi, and an M.Tech in Computer Science and Technology**.

As a seasoned academic and industry trainer, Dr. Kumar has **Mentored over 1,000+ Professionals** and held key teaching roles at reputed institutions such as **DTU and IIITM Gwalior**. His ability to simplify complex computing concepts has made him an influential voice in preparing the next generation of technology leaders.

His research received international recognition, including accolades like the **Qualcomm Faculty Award (QFA) 2023, Google CSR Grant**, and multiple Best Paper and Travel Grants from prestigious global conferences.

Prof. Kumar's vision for this program is centered on equipping professionals with real-world expertise in AI engineering and AIOps, ensuring learners not only understand advanced systems but can also operationalize and scale them in industry settings.



## Futurense –

# Leadership Council

futurense leadership council

Gain access to mentorship and networking opportunities with AI leaders shaping the future of technology.



**Nithya Subramanian**
Head of Data & Analytics - AMEA
BEST BUY



**Pankaj Rai**
Group Chief Data and Analytics Officer
ADITYA BIRLA GROUP



**Kaushik Das**
Managing Director
JCPenney



**Anupam Gupta**
VP Enterprise Data and Analytics
UNITEDHEALTH GROUP



**Tushar Sahu**
Director Engineering
Google



**Anand Das**
Chief digital & AI Officer: Engineering
TVS



**Divesh Singla**
SVP of Global Operations & DART, Head APAC & Managing Director India & Philippines
SIGNANT HEALTH



**Ishu Jain**
Head of Analytics
Myntra



**Saurabh Agarwal**
Chief Executive Officer
DAIOM



**Ashish Dabas**
Vice President
Capital One



**Nitin Srivastava**
Data & Analytics India Lead
Dainik Jagran



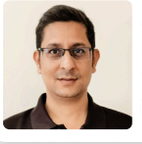
**Shrisha Ray**
Director of Engineering
THOMSON REUTERS



**A V Rahul**
Director, Analytics
Barracuda



**Madhu Hosadurga**
Global Vice President, Enterprise AI
Schneider Electric



**Ankit Mogra**
Director - Insights & Analytics
ATHER



**Muthumari S**
Global Head of Data & AI Studio
brillio



**Aditya Khandekar**
President
Corridor Platforms



**Pankaj Srivastava**
SVP - Head of Credit Analysis Unit Offshore
HSBC



**Satyakam Mohanty**
Founder & Managing Partner
wyser



**Saurabh Kumar**
Director - Data Engineering
LOWE'S



**Sharmistha Chaterjee**
EEM- Head of Software and Systems Engineering
CommonwealthBank



**Arvind Balasundram**
Executive Director, Commercial Insights & Analytics
REGENERON science to medicine®



**Praveen Sathyadev**
Head - EU/ UK Business Growth (VP) - Analytics, Insights and AI
C5i



**Anirban Nandi**
Head of AI Products & Analytics (Vice President)
Rakuten



**Indrani Goswami**
Associate Director
NYKAA



**Srini Oduru**
Head of IT Delivery and Operations
Cervello an ATKearney company



**Sumon Mal**
Director Engineering
SONY liv



**Alok Tiwari**
Director Of Analytics
JUNGLEE GAMES



**Supria Dhanda**
Co-Founder & Managing Partner
wyser



**Akshay Kumar**
Research & Analytics Leader
Gallagher



**Vishal Nagpal**
Data Science & Analytics Leader, Trustworthy Shopping Experience
BEST BUY



**Monica S Pirgal**
Chief Executive Officer
BHARTIYA CONVERGE



**Deepa Mahesh**
Head of Strategy & Operations, Board Member
Ex- Mu Sigma DO THE MATH



**Madhurima Agarwal**
Managing Director - Microsoft for Startups
Microsoft



**Swati Jain**
Partner - Digital, AI & Analytics
Deloitte.



**Krithika Muthukrishnan**
Chief Data Science Officer
scripbox



**Bhargab Dutta**
Chief Digital Officer
CENTURYPLY®



**Tushar Chahal**
Chief Technology Officer
Numisma Bank



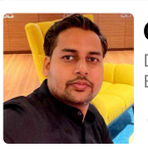
**Ruchika Singh**
Director , Data Science & Insights
Spotify



**Arpit Agarwal**
Senior Director, Data Analytics & AI
Google



**Sulabh Jain**
Chief Analytics Officer
IMPACT ANALYTICS



**Gaurav Srivastava**
Data Analytics & Engineering Leader
amazon



**Aneelkumar Savalagi**
Global Chapter Leader - ICSS, Global DD&T
Takeda



**Pramod Rawat**
Director
WELLS FARGO

& Many More

## Futurense –

# Bridge Course

Before diving into the rigorous technical curriculum of **IIT Roorkee's Advanced PG Certificate in AI Engineering on Cloud and AIOps**, every learner begins their **journey with the Futurense Bridge Course**. This specially designed foundation module ensures **you're not just ready to learn, but ready to build.**

Whether you're a **data engineer, software developer, or a DevOps professional** transitioning into AI roles, the Bridge Course sets the stage with the **right conceptual clarity, tool fluency, and problem-solving mindset.**

- You don't need to be an **AI expert**
- You don't need **experience deploying LLMs.**
- You just need the **right start**, and that's exactly what this course provides.

## ✦ What Will You Master in the Bridge Course?

- **GenAI & Agentic AI Fundamentals:** Understand how modern AI systems, from LLMs to autonomous agents, are reshaping operations, workflows, and infrastructure.
- **Prompt Engineering for Engineers:** Go beyond basic prompting: learn how to structure system, context, and user prompts for business-ready outputs using tools like ChatGPT, Claude, and AutoGen.
- **Cloud & AI Workflow Readiness:** Get an introduction to working with AI in cloud-native environments (AWS, GCP, Azure), including basics of containerization and infrastructure setup.
- **Problem Framing & System Thinking in AI:** Learn to convert real-world business and engineering challenges into solvable AI engineering tasks, from building ETL pipelines to designing RAG workflows.

### BRIDGE COURSE HIGHLIGHTS

- **60+ Hours** of Structured Pre-Program Learning
- **Hands-On Labs** on Prompting, Tool Stacking, & Workflow Automation
- **Business & Tech Use-Cases** (Ops, Compliance, Finance, SaaS, Support)
- **Personalized AI** Readiness Assessments & Feedback

## ✦ Why It Matters?

**In AI, the Fastest to Deploy Wins**

According to a 2025 LinkedIn Workforce Study, roles like **Generative AI Engineer and Agentic AI Developer** have grown **400% YoY**. Companies are no longer experimenting with AI; they're scaling it across entire functions.

The Futurense Bridge Course ensures that when you step into IIT Roorkee's core modules, you're not playing catch-up; you're already building the future.

# Eligibility Criteria

- **Minimum 50% in graduation** (Bachelor's degree in STEM: B.Tech/B.Sc./MCA, etc.)
- Preferably **1+ years of professional experience** (qualified freshers may apply if they have completed courses or certifications in AI or data engineering, or Cloud)
- **Exposure to computing or programming** (via coursework, projects, or work)
- **Mandatory pre-screening test** for program readiness

# Program details

**FORMAT**

**Hybrid** (Live Online + Campus Immersion)

**DURATION**

**9 Months**

**FEES**

**₹1.25 Lakhs + GST**

**SCHEDULE**

**Saturday & Sunday,** 2 Hours Each

**START DATE**

**22nd Aug 2026** (Tentative)

**CERTIFICATE**

Issued by **CEC IIT Roorkee**

A tentative additional immersion fee of approximately **₹10,000** will be applicable, subject to the actual costs incurred.

# Admission process

01 Application

02 Pre-screening Test

03 Fee Payment

04 Start Bridge Course

05 Join Program

## About —

# IIT Roorkee




**The Indian Institute of Technology Roorkee (IIT Roorkee)** was established in **1847**, making it one of the oldest technical institutions in India. Originally known as **Thomason College of Civil Engineering**, it became an **IIT in 2001**. IIT Roorkee is renowned for its well-known technological education, research, and innovation, contributing significantly to the advancement of engineering and technology in India and globally.

Spread across a sprawling **365-acre Campus**, IIT Roorkee is equipped with advanced facilities for both academic and research activities. The institute offers a **Multidisciplinary Approach to Education**, with academic programs organized through various departments and cutting-edge research conducted through **Specialized Centers of Excellence**. IIT Roorkee has consistently been at the forefront of technological development and has played a vital role in addressing societal challenges through research and innovation.

IIT Roorkee has been proactively offering **Executive Education Programs Aimed at Working Professionals**. These programs are designed to cater to the dynamic demands of the industry, providing participants with the skills and knowledge required to succeed in their careers. Leveraging its strong academic expertise and collaborations with **Industry Leaders**, IIT Roorkee offers a wide array of **High-quality Programs**, combining theoretical knowledge with practical insights.

The institute maintains robust industry linkages to design customized training and development programs, addressing specific organizational needs. IIT Roorkee boasts modern infrastructure, including **Advanced Classrooms, Well-equipped Laboratories, a Vast Library Collection, and Digital Learning Platforms**, ensuring an immersive and engaging learning experience for all its participants.

## About —

# Futurense Technologies

Futurense

In today's fast-changing world of deep tech, where skills become outdated overnight, staying ahead means constant evolution.
At Futurense Uni, we offer online degree programs with IITs and IIMs across next-generation domains—delivered with the same rigor as regular degrees and certifications, and carrying the credibility aligned with real-world relevance and hiring trends.
Through Futurense Global Pathways, we enable seamless, cost-efficient transitions to Master's programs across the globe via hybrid models that combine international opportunity with the strength of IIT and IIM certifications.
We are also reshaping core technical education through the Futurense School of AI, embedding AI-first, outcome-driven learning models across private institutions to uplift students with industry-aligned skills and future-ready training.
At the foundation of this ecosystem are the enterprises that power it—informing every curriculum, guiding every standard, and partnering with us to build their future workforce. Whether through tailored skilling, certification programs, or our Hire Train Deploy model that trains talent in our campuses and delivers high-impact teams at scale, every outcome is grounded in real hiring signals and designed to evolve ahead of industry demand. Because India's leadership in deep tech will not come from catching up—it will come from building what's next.

Let's Build what's *Next*-together

# Let's get in Touch


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