codingninjas x Electronics & ICT Academy
Indian Institute of Technology Guwahati
An Initiative of Ministry of Electronics & Information Technology(Meity)

PG CERTIFICATION PROGRAM IN

DATA ANALYTICS WITH GENERATIVE AI

E&ICT ACADEMY, IIT GUWAHATI

A 6-months program
to help you stand out as
#CertifiedDataAnalyst

N·S·D·C
National Skill Development Corporation
Transforming the skill landscape

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ABOUT THE PROGRAM

The **six-month, online PG Certification** in Data Analytics with Generative AI, offered by E&ICT Academy at IIT Guwahati & Coding Ninjas, is **designed for graduates** aiming to excel in data analytics. With the **data analytics market projected to hit $650 billion by 2029** There's a growing need for skilled professionals and sectors like finance, healthcare, and tech increasingly relying on data-driven insights.

This program provides a dual skill set in analytics and generative AI as AI-driven roles are projected to grow by 30% by 2026. The **AI-focused curriculum** co-designed by the IIT Guwahati faculty combines theory with practical experience. Solve real world case, learn visualization, predictive modeling, SQL, Python, EDA. **Learners will have on-campus orientation, IIT faculty guest lectures, graduation ceremony, and E&ICT Academy IIT Guwahati alumni status.**

Coding Ninjas' career support includes **resume reviews, mock interviews, mentorship, and live guidance from instructors.** With flexible learning options requiring a commitment of 14-15 hours per week, it's accessible to graduates from all fields. The competitive admission process involves an **online application and a 1:1 consultation**. This program leads to **high-impact roles, equipping participants with technical proficiency and industry-relevant skills.**

ABOUT E&ICT ACADEMY IIT GUWAHATI

- The Electronics & ICT Academy at IIT Guwahati, an initiative by the Ministry of Electronics and Information Technology (MeitY), provides high-quality education and training in emerging tech fields.

- Aims to bridge gap between academic training and industry by offering courses that equip a skilled workforce with practical knowledge.

- IIT Guwahati is 6th member of IIT Fraternity, founded in 1994, ranked 7th best institute in India.

- Prestigious PG certification by E&ICT Academy IIT Guwahati will not only make you industry ready but your profile will be highly regarded by recruiters, and can significantly increase your chances of getting shortlisted for tech job roles.

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PRINCIPAL INVESTIGATOR

Prof. Gaurav Trivedi is Professor,
EEE Department and Principal Investigator,
E&ICT Academy, IIT Guwahati.

Dear Students,

We are thrilled to partner with Coding Ninjas for the PG Certification Program in Data Analytics by E&ICT Academy, IIT Guwahati. Coding Ninjas' dedication to high quality, practical coding education aligns perfectly with our mission at E&ICT Academy, IIT Guwahati to enhance technical skills and employability through widely accessible programs.

This collaboration fits into our larger goal of providing top-notch education in emerging fields, thereby empowering the next generation of technologists.

To all students, I encourage you to embrace this opportunity with enthusiasm and dedication. Your journey in this certification program will be transformative, equipping you with the knowledge and experience to achieve your career aspirations.

This certification program offers a comprehensive curriculum, hands-on projects, and mentorship from industry experts, ensuring you gain the skills needed to excel in technical fields.

Warm regards,
Prof. Gaurav Trivedi,
Professor, EEE Department and
Principal Investigator, E&ICT Academy

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WHY DATA ANALYTICS WITH GENAI?

High Demand and Lucrative Careers
Data analytics market is projected
to reach $550 billion by 2028.

FORTUNE BUSINESS INSIGHTS

Promising Salary
Data analysts earn an average salary of 6.5 LPA.

glassdoor

Future-Proof
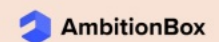85% of businesses invest in data and AI,
with continued growth expected.

Gartner.

AI Synergy
GenerativeAI boosts data productivity
by upto 40%.

McKinsey &Company

Career Growth
Roles like machine learning engineer and
AI specialist can earn 15–20 LPA.

AmbitionBox

Job Growth
Data-related roles are projected to grow 20%
over the next decade.

Forbes

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PROGRAM JOURNEY

Choose between BLENDED JOURNEY or LIVE JOURNEY for learning

Kickstart at E&ICT IIT Guwahati

- Orientation at IIT Guwahati campus
- Meet your program instructors
- Connect with your peers

Feel like the Elite

- Admission letter, ID card & T-Shirt
- E&ICT IIT Guwahati alumni status
- Guest lectures by IIT faculty

Master Data Analytics by solving real-world problems

- AI-infused curriculum by IITG & CN
- Work on real-world case studies
- Projects & training on GenAI & industry applications

Experts to help you when needed

- 1000+ Teaching Assistants available
- 20 industry-expert sessions
- Dedicated Relationship Manager

Succeed like the Top 1%

- PG certification by EICT IIT Guwahati
- Graduation ceremony at IIT Guwahati
- Get industry-ready as an expert

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Admission letter

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ADMISSION LETTER

E&ICT Academy, IIT Guwahati – PG Certification in Data Analytics with Generative AI

Dear [Student Name],

We are glad to offer you admission into the E&ICT Academy, IIT Guwahati's PG Certification Program in Full Stack Development with Generative AI, powered by Coding Ninjas. This partnership brings together Coding Ninjas' commitment to world-class coding education and E&ICT Academy, IIT Guwahati's mission to make high-quality programs accessible to all.

This is more than just a program—it's a transformative journey that will equip you with the knowledge and experience to reach your career aspirations in software development.

Program Highlights:

E&ICT Academy, IIT Guwahati - Approved Curriculum: Learn from a curriculum designed to provide you with industry-relevant skills and knowledge.

Recognized Internship & Training Certification: Highly respected in the industry and recognized by employers, enhancing your job prospects.

ID Card

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Learner ID : 2684723497
Name : Aman Rauthan
Program : PG Certification Program in Data Analytics with Generative AI
Valid till : 20th April, 2025

Prof. Gaurav Trivedi, Principal Investigator,
E&ICT Academy, IIT Guwahati

Director
(Training Partner)

T-Shirt

Electronics & ICT Academy
Indian Institute of Technology Guwahati

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Certificate

Certificate ID: <CertificateReferenceNumber>

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

Indian Institute of Technology, Guwahati

PG Certification

This is to certify that

Your name

has successfully completed the Online PG Certificate in

"Data Analytics with Generative AI"

Organized by Electronics & ICT Academy Indian Institute of Technology, Guwahati in association with

Coding Ninjas

held from __/____ to __/____

Prof. Gaurav Trivedi
Principal Investigator
E&ICT Academy IIT Guwahati

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CURRICULUM FOR YOUR SUCCESS

Module	Topics	Case Studies
Introduction to Data Analytics and Excel	• Introduction to Data Analytics and it's types • Data Cleaning and tools of Data Analysis • Operations, Functions and Formatting in MS Excel • Data Extraction and it's understanding • LOOKUPs in Excel • Al tools in MS excel • Data Cleaning in Excel - Handling Missing • Values and Outliers • Charts in Data Analytics • Methods of Data Analysis - Univariate and Bivariate • Power Query • Data Transformation in Power Query	National Air Quality US Healthcare Dataset India CPI Inflation
Data Visualization with PowerBi	• Introduction to Power Bl and Business Intelligence • Basic functionality of PowerBl and Data Transformations • Data Cleaning with Power Bl • Al Tools in Power Bl • Advanced Power Query and Data Modelling • DAX Functions • Advanced DAX Functions • Hierarchy and visualization in Power Bl • Creating Compelling Reports in Power Bl • Data Analysis and Data Storytelling using Power Bl • Features in Power Bl Service with Al Insights • Row Level Security and KPIs	IT Department PowerBi Dashboard E-com Orders

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Module	Topics	Case Studies
Analytics with SQL	• Introduction to SQL and different types of databases • Fundamentals of SQL and Data • Management in MySQL Workbench • Advanced SQL Query Techniques for Data • Retrieval and Documentation • CRUD Operations and Data Integrity • Database Schema Management • Operations • String Operations • Aggregate Functions • Joins, Constraints and ER Modelling • Advanced Query writing using Joins and Aggregate Functions • Case Statements for Conditional Logic and Aggregation • Common Table Expressions (CTEs) and • Subqueries in SQL • Date Manipulation - Data Types and • Functions • Fundamentals of Window Functions and it's applications • Views, Indexes and Data Partitioning • Stored Procedures and Triggers • TCL and DCL Commands	Retail Store E-Com Business

Module	Topics	Case Studies
Python Programming	• Introduction to Python and AIML • Fundamentals of Python: Syntax, Variables, and Data Types • Types and Order of Operators • Strings : Operations and Methods • Data Structure - List, Tuple, Set, Dictionary • Conditional Statements • Looping Statements • Control Transfer Statements - Break, Continue and Pass • Functions • Exception Handling • Modules • File Handling , Overview of library • Numpy - Libraries for Array Management • Attributes, Operations, and Statistical Analysis using NumPy • Data Structures and Series Management using Pandas • Data Manipulation and Analysis in Pandas: File Handling, Data • Selection, and Aggregation • Data Visualization using Matplotlib and Seaborn • Concepts and Application of OOPS • Database Connectivity : Using Libraries for Data Management	Covid-19 PhonePe Digital Payments

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Module	Topics	Case Studies
Statistics & EDA with Python	• Introduction to Statistics • Types of Data and Data Collection • Sampling Techniques & Measures of Central Tendency • Descriptive Statistics: Measures of dispersion • Introduction to Probability in Statistics • Probability Distributions • Central Limit Theorem and Sampling • Distributions and their properties • Hypothesis Testing • Confidence Intervals • Statistical Tests and uses for bivariate analysis	**Loan Default** **Pro Kabaddi League** **Superstore Sales**
Generative AI (Live lectures)	• Introduction to Generative AI: Concepts, tools, and applications • Prompt Engineering Techniques for crafting effective prompts • Generative AI in Excel for Data processing and automation • Python Development with Generative AI: prompting, assistance, and best practices. • Generative AI for SQL Coding: prompting, debugging, and optimization • Generative AI for Data Analysis and Visualization: Summarization, EDA, and best practices.	**Credit Risk Modelling**

HOW AI IS BEING USED FOR DATA ANALYSIS?

Excel

- **Analyze Data:** Spot trends and outliers by asking simple questions.
- **Flash Fill:** Recognizes patterns in data and applies them to similar rows automatically.

Power BI

- **Advanced Visualizations:** AI provides clear, interactive visuals to make data insights more accessible.
- **Constant Improvement:** The AI capabilities in Power BI are advanced and continuously evolving.

SQL

- **Query Generation:** AI tools like Photon Natural Language by Salesforce create SQL queries based on prompts.
- **Basic SQL Knowledge Needed:** While AI simplifies querying, familiarity with SQL basics is beneficial.

Python

- **Data Manipulation**: Use Pandas for quick data cleaning and structuring.
- **Predictive Analytics:** Build machine learning models with Scikit-learn.

and more applications will be covered in the program.....

REAL WORLD CASE STUDIES

National Air Quality

Analyse national air quality data, focusing on PM 2.5 and PM 10 levels to understand pollution trends and regional variations. Evaluate potential health impacts based on these key indicators.

US Healthcare Case Study

Investigate healthcare data to identify prevalent conditions, cost trends, and hospital admissions across demographics. Provide recommendations for reducing costs, managing resources, and improving patient outcomes.

India CPI Inflation

Examine India's inflation trends through Consumer Price Index data, focusing on key sectors like food, energy, and transport. Assess year-over-year inflation patterns, the impact of global events, and COVID-19's influence on essential sectors, offering insights into India's economic dynamics.

Ecom Orders

Analyse 2023 e-commerce data from a Bangalore-based mobile accessories company serving 14 countries. Explore order methods (app, website, WhatsApp, helpline), customer segments, and targeted sales teams to improve sales strategies and boost global customer engagement.

Retail Analytics

Use data to address product performance, customer segmentation, and behaviour analysis. Gain insights from sales and customer data to optimise inventory and improve customer engagement.

E-Com Company

Analyze customer insights, product performance, and sales trends to enhance market segmentation, inventory management, and sales strategy. Apply SQL to uncover actionable insights for boosting customer satisfaction and sales.

COVID-19 Analysis

Explore the global impact of COVID-19 using datasets on cases, deaths, and recoveries. This study enhances skills in Python for data manipulation, cleaning, and visualisation, offering insights into pandemic trends across regions.

PhonePe Transactions

Analyze PhonePe transaction data along with demographic details from Indian states and districts. Examine trends in transactions, device usage, and demographic correlations while ensuring data consistency for in-depth insights.

Pro Kabaddi Dataset

Conduct Exploratory Data Analysis (EDA) on Kabaddi match events to uncover insights on gameplay and player performance using Python libraries like Pandas, NumPy, and Matplotlib.

Superstore Sales

Analyze the Superstore Sales dataset to uncover trends and insights critical for retail decision-making, applying advanced data techniques for actionable business insights.

Loan Default Analysis

Examine loan application data to identify factors influencing defaults by analysing demographic, financial, and behavioural attributes, helping inform risk management strategies.

TOOLS COVERED

ChatGPT

SciPy

Gemini

python™

NumPy

Power BI

Excel

MySQL™

pandas

scikit learn

Meta
Llama 3

Google
colab

Jupyter

statsmodels

SKILLS LEARNED

- Data Analytics Fundamentals

- Data Cleaning and Handling Missing Values

- Data Extraction and Transformation

- Univariate and Bivariate Analysis

- Data Visualization Techniques

- Data Storytelling

- Database Management and SQL Querying

- SQL Joins, Constraints, and Modeling

- Advanced SQL Techniques (Window Functions, CTEs, etc.)

- Python Programming Basics

- Data Manipulation in Python (Pandas, Numpy)

- Data Visualization in Python (Matplotlib, Seaborn)

- Statistical Analysis and Hypothesis Testing

- Probability and Statistical Tests

- Business Intelligence Reporting

- Data Security (Row Level Security)

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TEACHING PEDAGOGY

⏱ DURATION

6 Months

📖 LEARNING MODE

• **Live Classes**

Weekly three live classes, 2 hours each. Recording for each will be provided after class.

Tuesday 9-11 PM	Thursday 9-11 PM	Saturday 9-11 PM

💬 ADDITIONAL SUPPORT

• **Live 1:1 doubt support**

Team of over 1,000 teaching assistants is available 7 days a week from 10 AM to 12 mid-night to connect with them via chat, audio call, or screen sharing to resolve your queries.

• **Relationship Manager**

Support you throughout the program, helping with queries, connecting you with trainers and experts, tracking your progress of weekly assignment, regular tests, and providing guidance to ensure you achieve your career goals.

YOUR FACULTY

Trisha Jagtiani
Instructor, Exp - **17+ years**
BNP PARIBAS   enel x

Anmol Lohia
Instructor, Exp - **7+ years**
Grant Thorntor
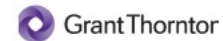
Nadeem Hussain
Instructor, Exp - **6+ years**
Deloitte.   KhataBook

Ashwin Goyal
Instructor, Exp - **4+ years**
OYO   ₹

Maaheen Jaiswal
Instructor, Exp - **4+ years**
Google   UO Mu Sigma

Sameer Dubey
Instructor, Exp - **7+ years**
HOME CREDIT

Huzefa Lohawala
Instructor, Exp - **5+ years**
PayPal

Puneet Jain
Instructor, Exp - **6+ years**
amagi   Flipkart

Rishav Jain
Instructor, Exp - **4+ years**
COGNITIO ANALYTICS

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MEET THE MENTORS

Anirban Paul
Senior Member Of Technical Staff - Data Science & AI

ORACLE

6+ yrs of work experience

Akhilesh
Consultant

Deloitte.

8+ yrs of work experience

Rishav Jain
Analytics Manager

COGNITIO ANALYTICS

6+ yrs of work experience

Ankit Sharma
Senior Developer (Data Science and Analytics)

TransUnion

10+ yrs of work experience

Ankit Anand
Decision Science Consultant

accenturestrategy

7+ yrs of work experience

Dhiraj Singla
Lead Engineer, Technology (Data Analytics)
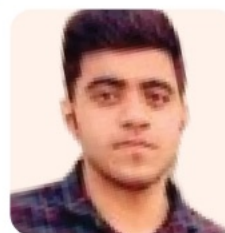
Iris

10+ yrs of work experience

Avan Vora
Data Science & Analytics Trainer

BrowserStack

10+ yrs of work experience

Nishchay Kukreja
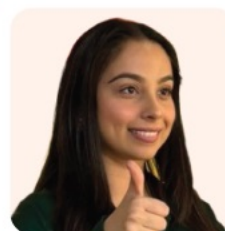Data Analyst

Credgenics

3+ yrs of work experience

Ranjhana
ESL Teacher

BRITISH COUNCIL

5+ yrs of work experience

Gurpreet
Training the cabin crew

TNC AVIATION

6+ yrs of work experience

CODING NINJAS CAREER SERVICES

10 Mentorship Sessions

Guidance from top industry mentors to connect theoretical understanding with practical implementation through their insights

10 Industry expert sessions

Sessions with industry experts from reputed companies who have proven competencies in specific fields and are excellent guides to help you determine your next steps in the industry.

Mock Interviews & Resume Reviews

Gain valuable insights through mock interviews & resume reviews conducted by industry experts from MAANG and other top product companies

Job Board Access

Access to coding ninjas job portal to help you with the best options to take your career forward

Please note, neither Coding Ninjas nor E&ICT Academy, IIT Guwahati, is liable for getting you placement or job offer upon completion of the program. However, as a valuable benefit, we provide you with access to Coding Ninjas' Career Services. These resources are designed to support your career growth and improve your job prospects.

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ADVICE FROM ALUMNI

The following notes have been collected and summarised from various **Coding Ninjas Alumni** after they completed the program.

We hope you can learn from their experiences and take inspiration to make the most of this opportunity.

Impostor Syndrome:

The Problem: I often felt like I didn't belong and doubted my abilities.

My Solution: I reminded myself that it's okay to not know everything and that learning is continuous. Seeking support from peers, faculty, mentors, and success managers helped me build confidence.

Shourya Gupta
Microsoft

Prioritising Skill Development:

The Problem: I found myself overly focused on securing a job over everything else.

My Solution: I shifted my focus to improving my core skills and building a strong foundation in programming, which ultimately helped me secure a top job.

Soumya Gupta
NatWest Group

Focus on problem solving:

The Problem: I felt I understood the concepts but couldn't solve problems.

My Solution: Along with listening to lectures, I practised high level questions frequently. If I got stuck at a particular level, I shifted a level down to regain confidence to solve. I kept following this process till I became confident.

Naman Jain
Microsoft

Time Management:

The Problem: I struggled with procrastination, leading to last-minute rushes to complete assignments and projects.

My Solution: Think quantitatively about your time. Break tasks into smaller steps, set deadlines, and prioritise. Eliminate distractions, and reward yourself for completing tasks on time.

Rahul Maurya
TEKION

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By the end of the program you'll become an industry ready #CertifiedDataAnalyst

Things you will be able to do by the end of the program

SKILL SET

Data Understanding and Analysis Frameworks

PRACTICAL EXAMPLE

You will be able to analyze various types of data, apply appropriate analysis frameworks, and work on projects like assessing National Air Quality to understand real-world data implications.

SKILL SET

Data Storytelling

PRACTICAL EXAMPLE

You will be able to craft compelling narratives from data analyses, ensuring that findings are communicated clearly and effectively, as seen in your projects and case studies.

SKILL SET

SQL for Data Retrieval and Manipulation

PRACTICAL EXAMPLE

You will be able to write SQL queries to retrieve, filter, and join data from databases, applied to case studies like retail and e-commerce analytics.

SKILL SET

Data Visualization

PRACTICAL EXAMPLE

You will be able to create meaningful visualizations using Power BI to present data insights effectively, demonstrated through projects like analyzing e-commerce orders.

SKILL SET

Excel for Data Analytics

PRACTICAL EXAMPLE

You will be able to utilize Excel for data preparation, analysis, and storytelling, demonstrated through minor projects and case studies, such as analyzing business problems and crafting insightful visualizations.

SKILL SET

Python Programming for Data Analytics

PRACTICAL EXAMPLE

You will be able to write Python code for data analysis, including handling data types and structures, demonstrated through projects like analyzing IPL data.

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SKILL SET

Python Data Libraries

PRACTICAL EXAMPLE

You will be able to use libraries such as NumPy, Pandas, and Matplotlib to perform data analysis and create visualizations, with projects including COVID-19 and PhonePe transaction analysis.

SKILL SET

Statistical Analysis

PRACTICAL EXAMPLE

You will be able to perform descriptive and inferential statistical analysis, including hypothesis testing, to draw insights from data, applied in various case studies.

SKILL SET

Exploratory Data Analysis (EDA)

PRACTICAL EXAMPLE

You will be able to conduct EDA to transform, clean, and select features from datasets, exemplified by working with datasets like Pro-Kabbadi.

SKILL SET

Generative AI

PRACTICAL EXAMPLE

You will be able to gain insights that are automated, and workflows that are simplified. Datasets will be analyzed to provide summary insights, natural language will be converted seamlessly, and optimal visualizations will be suggested.

CERTIFICATE

E&ICT IIT Guwahati will award a certificate of successful completion to participants who complete the program successfully with 70% of the score in the evaluation. You should have watched at least 70% of the course content in your classroom to be considered eligible for program completion criteria and receive a PG Certificatefrom E&ICT, IIT Guwahati.

Certificate ID: <CertificateReferenceNumber>

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Indian Institute of Technology, Guwahati

◆ **PG Certification** ◆

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held from __/____ to __/____

Prof. Gaurav Trivedi
Principal Investigator
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