



Electronics & ICT Academy
Indian Institute of Technology Guwahati
An Initiative of Ministry of Electronics & Information Technology (MeitY)

STUDENT TRAINING CUM INTERNSHIP PROGRAM IN

DATA ANALYTICS WITH GENERATIVE AI

E&ICT ACADEMY, IIT GUWAHATI

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



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ABOUT THE PROGRAM

The **six-month, online Student Training cum Internship Program** in Data Analytics with Generative AI, offered by E&ICT Academy at IIT Guwahati & Coding Ninjas, is **designed for students** 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.



IIT GUWAHATI

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 STUDENT TRAINING CUM INTERNSHIP 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

WHY DATA ANALYTICS WITH GENAI?



High Demand and Lucrative Careers

Data analytics market is projected to reach **\$550 billion** by 2028.



Promising Salary

Data analysts earn an average salary of **6.5 LPA**.



Future-Proof

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



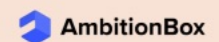
AI Synergy

Generative AI boosts data productivity by **upto 40%**.



Career Growth

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



Job Growth

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



PROGRAM JOURNEY

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 co-designed with IIT faculty
- Work on real-world case studies
- Projects & training on GenAI & industry applications

Experts to help you when needed

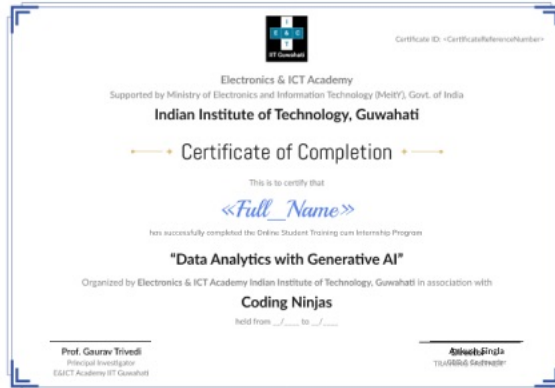
- 1000+ Teaching Assistants available
- 20 industry-expert sessions
- Access to 10X Clubs

Succeed like the Top 1%

- Student Training cum Internship certificate by EICT IIT Guwahati
- Graduation ceremony at IIT Guwahati
- 2-days Hackathon at EICT IIT Guwahati campus



Certificate



T-Shirt



ID Card





Admission letter





CURRICULUM FOR YOUR SUCCESS

Module	Topics	Case Studies
Introduction to Data Analytics and Excel	<ul style="list-style-type: none">• 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• AI tools in MS excel• Data Cleaning in Excel - Handling Missing Values and Outliers• Charts in Data Analytics• Methods of Data Analysis - Univariate and Bivariate	 National Air Quality  US Healthcare Dataset  India CPI Inflation
Data Visualization with PowerBi	<ul style="list-style-type: none">• Introduction to Power BI and Business Intelligence• Basic functionality of PowerBI and Data Transformations• Data Cleaning with Power BI• AI Tools in Power BI• Advanced Power Query and Data Modelling• DAX Functions• Advanced DAX Functions• Hierarchy and visualization in Power BI• Creating Compelling Reports in Power BI• Data Analysis and Data Storytelling using Power BI on Netflix dataset	 IT Department PowerBi Dashboard  E-com Orders

Module	Topics	Case Studies
Analytics with SQL	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Introduction to Python and AIML• Fundamentals of Python: Syntax, Variables, and Data Types• Types and Order of Operators• Constraints• 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 - Read, Write, Create files, Delete files, Executing SQL Queries• 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	 <p>Covid-19</p>  <p>PhonePe Digital Payments</p>



Module	Topics	Case Studies
Generative AI	<ul style="list-style-type: none">• Introduction to Generative AI and its key applications.• Overview of tools like ChatGPT, LLAMA 3, and Google Gemini.• Basics of Prompt Engineering and crafting effective prompts.• Techniques for refining and improving AI prompts.• Automating data processing and insights generation in Excel.• Using AI for dashboards and pivot table creation.• AI-assisted Python coding with ChatGPT and Copilot.• Practical tips for AI-powered Python development.• AI for writing, debugging, and optimizing SQL code.• Conducting EDA and summarizing data with AI tools.• Creating data visualizations using AI in Python.• Best practices for Generative AI in analytics workflows.• Ensuring privacy and security in AI-based solutions.• Real-world assessments and assignments for hands-on learning.	 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



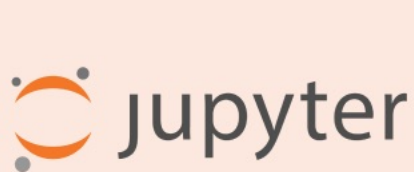
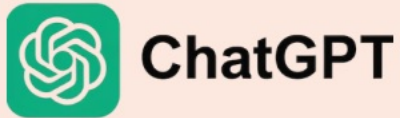
Explore the global impact of COVID-19 using datasets on cases, deaths, and recoveries. This study enhances skills in Python for data manipulation, cleaning, and visualisation, offering insights into pandemic trends across regions.

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.

TOOLS COVERED



∞ Meta

Llama 3



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)

TEACHING PEDAGOGY

DURATION

6 Months

LEARNING MODE

- **Live Classes**

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

Monday
8-10 PM

Wednesday
8-10 PM

Friday
8-10 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.

- **Guest Lectures by IIT faculty**

Delivering expert insights and in-depth knowledge designed to enhance your learning journey. We aim to provide meaningful, occasionally advanced content that deepens your understanding, sharpens your skills, and enriches your overall experience.

OPEN SOURCE CLUBS & HACKATHONS

An exclusive community of Coding Ninjas students, in partnership with IIT Coding Clubs & top industry developers as mentors, driving excellence in competitive programming and open source projects.

Activities/Events: What to expect



Expert talks



Open source projects



Focussed workshops



Industry talks



Contests



Hackathons

10X Clubs: Mentorship by India's 10X tech talent



Disha Bhardwaj

GSOC | Smart India
Hackathon Winner



Rutvik Kothari

ICPC World Finalist



Saksham Sharma

Singapore India
Hackathon Winner



Abhishek Kumar Jain

Gold Medalist | ICPC
World Finalist



LIVE DOUBT SUPPORT

- Team of over 1,000 teaching assistants.
- Quick and effective query resolution.
- Available 7 days a week from 10 AM to 12 AM.
- Provides one-on-one support.
- Connect with them via chat, audio call, or screen.



YOUR FACULTY



Trisha Jagtiani

Instructor, Exp - 17+ years



Anmol Lohia

Instructor, Exp - 7+ years



Nadeem Hussain

Instructor, Exp - 6+ years



Ashwin Goyal

Instructor, Exp - 4+ years



Maaheen Jaiswal

Instructor, Exp - 4+ years



Sameer Dubey

Instructor, Exp - 7+ years



Huzefa Lohawala

Instructor, Exp - 5+ years



Puneet Jain

Instructor, Exp - 6+ years



Rishav Jain

Instructor, Exp - 4+ years



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

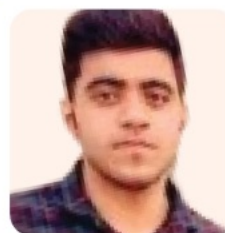


Avan Vora

Data Science & Analytics Trainer

BrowserStack

10+ yrs of work experience



Nishchay Kukreja

Data Analyst

Credgenics

3+ yrs of work experience

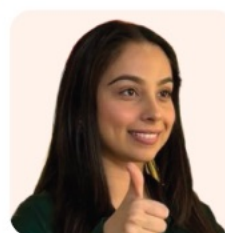


Ranjhana

ESL Teacher

BRITISH COUNCIL

5+ yrs of work experience



Gurpreet

Training the cabin crew

TMC

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.

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

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.

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**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 Certificate from E&ICT, IIT Guwahati.

