



## Data Analytics with AI

### Industry-Ready Program

*With Real-World Projects & Deployment*

**Duration: 7 Months.**

The **Data Analytics with AI – Industry-Ready Program** is a practical, job-focused training designed to build strong skills in data analysis, business intelligence, and AI-assisted analytics. The program covers Python for analytics, data cleaning, EDA, statistics, web scraping, NLP-based text analytics, Power BI dashboards, machine learning for analytics, time-series forecasting, and Generative AI for automated insights. With hands-on real-world projects, dashboards, and case studies, learners gain end-to-end experience from raw data to actionable business insights. The program concludes with portfolio-ready projects, professional documentation, career guidance, and an official certification issued by Brainwave AI, preparing participants for Data Analyst and BI roles.



## Why Training at Brainwave AI?

Training at Brainwave AI means learning AI, Data Science, and Analytics in a practical, industry-focused environment designed to make you job-ready. Brainwave AI is an ISO-certified training and development organization that emphasizes hands-on learning, real-world projects, and modern industry tools rather than only theory. Programs are carefully structured to cover AI, Data Analytics, Machine Learning, Deep Learning, NLP, Time Series, Generative AI, and deployment basics, aligned with current market demand.

Learners benefit from expert mentorship by highly qualified IT professionals with strong academic and industry experience, along with comprehensive course material, short notes, PPTs, practice tests, videos, and curated learning resources. Training includes domain-based projects, a major capstone project, and exposure to Power BI, Streamlit, GitHub, Docker, and cloud basics, helping build a strong portfolio. With added support for resume building, LinkedIn optimization, presentations, and certification, Brainwave AI ensures learners gain not just skills but the confidence and readiness to succeed in real-world AI and analytics roles.

# Contents

## FOUNDATION LAYER

### Introduction to Data Analytics & AI Applications

Data analytics lifecycle, AI-assisted analytics, and real-world business use cases.

### Python Programming for Data Analytics

Python basics with NumPy and Pandas for data analysis and reporting.

### Data Collection & Data Understanding

Data from CSV, Excel, databases, APIs, and online sources.

### Web Scraping for Data Analytics

Extracting real-world data from websites using Python libraries for analysis.

### Data Cleaning & Preprocessing

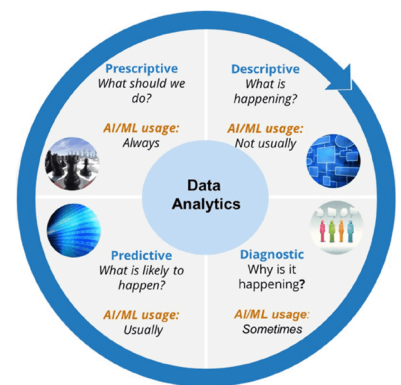
Handling missing values, duplicates, outliers, formatting, and consistency.

### Exploratory Data Analysis (EDA)

Statistical summaries and pattern discovery for business insights.

### Data Visualization & Storytelling

Visualizing insights using Matplotlib and Seaborn for decision-making.



## STATISTICS & ANALYTICS LAYER

### ❖ Statistics for Data Analytics

Descriptive statistics, probability basics, correlation, and hypothesis testing.

### ❖ Business Metrics & KPI Analysis

Understanding KPIs, trends, performance metrics, and decision support.

### ❖ Feature Engineering for Analytics

Aggregations, transformations, and derived analytical features.

## **BUSINESS INTELLIGENCE (BI) LAYER**

### ❖ **Power BI for Data Analytics**

Data modeling, DAX basics, interactive dashboards, and reports.

### ❖ **Advanced Power BI Dashboards**

Filters, slicers, drill-downs, and business-ready dashboards.

## **AI, NLP & MACHINE LEARNING FOR ANALYTICS**

### **Machine Learning Basics for Analysts**

ML concepts for prediction, classification, and segmentation.

### **Supervised ML for Analytics**

Regression and classification for forecasting and insights.

### **Unsupervised Learning for Analytics**

Clustering for customer and behavior segmentation.

### **Natural Language Processing (NLP) for Analytics**

Text cleaning, sentiment analysis, keyword extraction, and text insights.

### **Text Analytics on Real-World Data**

Analyzing reviews, feedback, social media, and documents.

### **Model Evaluation & Interpretation**

Evaluating models using metrics and business relevance.

## **AI & AUTOMATION LAYER**

### **AI-Assisted Analytics**

Automated trend detection, summaries, and insight generation.

### **Generative AI for Data Analytics**

AI-based report writing, dashboards explanations, and insights.

### **Prompt Engineering for Analysts**

Writing effective prompts for analysis, reports, and dashboards.

### **Explainable AI (XAI) Basics**

Understanding model outputs and ensuring transparency.

## **TIME SERIES & FORECASTING**

### **❖ Time Series Analysis for Business Data**

Trend, seasonality, and forecasting for sales and operations.

## **DEPLOYMENT & TOOLS**

### **Streamlit for Analytics Applications**

Building interactive analytics dashboards and apps.

### **Git & GitHub for Analysts**

Version control, collaboration, and portfolio building.

### **Cloud Basics for Data Analytics**

Cloud concepts for analytics tools, storage, and reporting.

## **PROJECTS & PROFESSIONAL SKILLS**

### **End-to-End Analytics Project Workflow**

Business problem → data → analysis → dashboard → insights.

### **Domain-Based Analytics Projects**

Healthcare, Finance, Retail, HR, Sales analytics projects.

### **Documentation & Analytics Report Writing**

Professional reports, PPTs, and insight documentation.

### **Final Industry-Level Analytics Project**

Complete analytics solution with dashboards and insights.

### **Presentation, Review & Viva**

Dashboard demonstration and analytical explanation.

### **Career Readiness & Portfolio Building**

Resume, LinkedIn, Power BI & GitHub portfolio guidance.

### **Certification**

Program / Internship Completion Certificate issued by **Brainwave AI**.

## **List of Projects (Real-World & Industry-Focused)**

### **Sales Performance & Revenue Analytics Dashboard**

Analyze sales trends, growth, KPIs, and region-wise performance using Power BI.

### **Customer Segmentation & Behavior Analysis**

Use clustering techniques to segment customers based on purchase and engagement patterns.

### **Retail Inventory & Demand Analysis**

Identify fast/slow-moving products, stock gaps, and demand trends.

### **Marketing Campaign Effectiveness Analysis**

Measure ROI, conversion rates, and campaign performance using analytics and visualization.

### **Financial Data Analytics & Expense Tracking**

Analyze income, expenses, profit trends, and financial KPIs.

### **HR Analytics – Employee Attrition & Performance**

Study attrition factors, performance metrics, and workforce insights.

### **Web Scraping-Based Market Price Analysis**

Scrape real-time product or service prices from websites and analyze trends.

### **Social Media & Customer Review Sentiment Analysis (NLP)**

Perform sentiment analysis on reviews, feedback, and social media data.

### **Healthcare Data Analytics Dashboard**

Analyze patient data, disease trends, and operational metrics.

### **Time Series Sales Forecasting Project**

Forecast future sales using historical time-based data.

### **Business KPI Monitoring Dashboard (Power BI)**

Design executive-level dashboards with dynamic KPIs and drill-downs.

### **AI-Assisted Automated Analytics Report**

Use Generative AI to auto-generate insights, summaries, and reports from data.

### **Fraud Detection Analytics (Basic Level)**

Identify unusual patterns and anomalies in transaction data.

### **Customer Churn Analysis**

Predict and analyze customer churn using analytics and ML concepts.

### **E-Commerce Data Analytics Project**

Analyze orders, revenue, customer behavior, and product performance.

### **Text Analytics on Feedback & Surveys (NLP)**

Extract key themes, keywords, and sentiment from survey responses.

### **Streamlit-Based Analytics Application**

Deploy an interactive analytics dashboard or report using Streamlit.

### **GitHub Analytics Portfolio Project**

Maintain a complete analytics project repository with documentation.

### **Domain-Based Mini Project (Choice)**

Healthcare / Finance / Retail / HR / Marketing analytics based on interest.

### **Final Industry-Level Capstone Analytics Project**

End-to-end analytics solution: data collection → analysis → dashboard → insights → presentation.

## Key Features

- Industry-Oriented Curriculum covering Data Analytics, AI-assisted analytics, Machine Learning basics, NLP, Time Series Forecasting, Power BI, and Explainable AI (XAI)
- Training by an ISO-Certified Organization – Brainwave AI
- Expert Mentorship by highly qualified IT professionals with strong academic and industry experience
- Comprehensive Course Material with concise short notes for easy understanding and quick revision
- Regular Tests & Practice Assessments to evaluate analytical thinking and progress
- Hands-On Data Analysis & Practical Assignments using real-world business datasets
- Web Scraping & NLP-Based Analytics for working with live data, text data, and customer feedback
- Power BI Dashboards & Business Reporting with real KPIs, insights, and storytelling
- Short Learning Videos & Curated YouTube Resources for concept reinforcement
- Well-Structured PPT Presentations for every analytics and AI module
- Books & Reference Material Written by the Mentor for deeper conceptual clarity
- Domain-Based Analytics Projects (Healthcare, Finance, Retail, HR, Sales, Marketing)
- AI-Assisted Analytics & Generative AI Exposure for automated insights and report generation
- Deployment Exposure using Streamlit, GitHub, and basic cloud concepts for analytics apps
- Final Industry-Level Analytics Capstone Project with end-to-end execution
- Presentation & Analytical Defense to build communication and confidence
- Resume, LinkedIn & Portfolio Optimization focused on Data Analyst / BI roles
- Official Internship / Program Completion Certificate validating analytics and AI skills



## **Comprehensive Learning Resources & Study Support**

Concise course material and notes will be provided by Brainwave AI to support structured learning, quick revision, and a clear understanding of all topics covered during the program. In addition to written notes, interns will receive practice exercises, regular tests and practice tests, short concept-explainer videos, curated YouTube learning links, and well-structured PPT presentations for each module. The learning resources are further enriched with reference books and study material written by the mentor, Bijay Chowdhury, ensuring strong conceptual clarity backed by real-world industry and academic experience. This blended approach helps interns learn effectively, revise faster, and apply concepts confidently in projects and assessments.

### **Mode of Training**

- ❖ Offline
- ❖ Instructor-led sessions with hands-on practice

### **Eligibility**

- ❖ Students from Undergraduate (UG) and Postgraduate (PG) programs are eligible, including B.Tech, M.Tech, BCA, MCA, B.Sc, and M.Sc from relevant disciplines.
- ❖ Freshers & career switchers
- ❖ Basic programming knowledge

### **Learning Methodology**

- ❖ Concept explanation + live coding
- ❖ Hands-on labs and assignments
- ❖ Case studies & real datasets
- ❖ Project-based learning approach

### **Assessment & Evaluation**

- ❖ Module-wise tests
- ❖ Practice tests & quizzes

- ❖ Project evaluation
- ❖ Final assessment & presentation

## **Tools & Technologies Covered**

- ❖ Python, NumPy, Pandas
- ❖ Matplotlib, Seaborn
- ❖ Scikit-learn
- ❖ Streamlit
- ❖ Git & GitHub
- ❖ Docker (for advanced program)

## **Project Deliverables**

- ❖ Mini project / Major project (as per duration)
- ❖ GitHub repository submission
- ❖ Project report (PDF)
- ❖ Final presentation (PPT)

## **Certification Details**

- ❖ Internship Completion Certificate
- ❖ Issued by Brainwave AI (ISO-Certified)
- ❖ Duration, project title, and mentor name mentioned

## **Career & Placement Support**

- ❖ Resume & LinkedIn optimization
- ❖ Interview preparation guidance
- ❖ Career roadmap after internship

## **Mentorship & Support**

- ❖ Guidance from experienced IT professionals
- ❖ Doubt-clearing sessions
- ❖ Continuous feedback on projects

## **Learning Resources**

- ❖ Course material & short notes
- ❖ PPTs & practice worksheets
- ❖ Short videos & curated YouTube links
- ❖ Reference books written by the mentor

## **Tools & Technologies List – Data Analytics**

### **Programming & Data Handling**

- ❖ Python
- ❖ NumPy
- ❖ Pandas

### **Data Visualization**

- ❖ Matplotlib
- ❖ Seaborn

### **Business Intelligence (BI)**

- ❖ Power BI (Desktop, DAX, Dashboards)

### **Statistics & Analysis**

- ❖ SciPy
- ❖ Statsmodels

### **Data Collection & Web Scraping**

- ❖ BeautifulSoup
- ❖ Requests
- ❖ Selenium

### **Natural Language Processing (NLP)**

- ❖ NLTK

- ❖ spaCy

## **Machine Learning (for Analytics)**

- ❖ Scikit-learn

## **Time Series Analysis**

- ❖ Statsmodels (ARIMA, SARIMA)
- ❖ Prophet

## **AI & Generative AI Tools**

- ❖ Large Language Models (LLMs)
- ❖ Prompt Engineering Tools

## **Application & Dashboard Development**

- ❖ Streamlit

## **Version Control**

- ❖ Git
- ❖ GitHub

## **Cloud Basics**

- ❖ AWS / Azure / Google Cloud (Concepts)

## **Development Environment**

- ❖ Jupyter Notebook
- ❖ VS Code

## **Documentation & Reporting**

- ❖ MS Excel
- ❖ MS Word
- ❖ PowerPoint



## Mentor: Bijay Chowdhury

Bijay Chowdhury brings over 30 years of teaching and academic experience to the field of Artificial Intelligence and emerging technologies. As the Founder & Lead Mentor at Brainwave AI, he has dedicated his career to blending strong theoretical foundations with hands-on, lab-driven learning. He has published and written numerous research papers, contributed to theses and academic research, and authored multiple books on Artificial Intelligence and allied domains, making complex concepts accessible to students, educators, and professionals. His mentorship philosophy emphasizes ethical AI, real-world problem solving, project-based learning, and industry readiness, ensuring interns gain not only technical skills but also clarity, confidence, and long-term career direction in AI, Machine Learning, NLP, Generative AI, and Time Series Analytics.

## Key Highlights

- ❖ 30+ years of teaching & academic mentoring
- ❖ Extensive research publications (papers, thesis)
- ❖ Author of multiple AI-focused books
- ❖ Strong focus on practical labs, projects, and ethics
- ❖ Proven mentor for student internships and career growth

## For Further Details, Contact:



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