

PGP in Data Science & AI

12 Months | Online Instructor Led

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OUR VISION

“

To make **world class education** accessible for professionals.

22 Lakhs

Median Salary - Data Scientist



- **Manvender Singh (Manav),**

Founder & CEO, Accredian
MBA - Indian School of Business

accredian
credentials that matter

 **ISB**

Top 3

trending careers in 2022
(#3 Data Science)



1.3 Million

Job Opportunities in India



Message from Program Director

Dear prospective learner,

I am honored to address you as the Program Director of our Data Science and AI programs which have a legacy of 60 successful batches. At Accredian, we are committed to shaping the future of technology and empowering our students with cutting-edge knowledge and skills.

As we embark on this academic journey together, I am confident that our dedicated faculty, state-of-the-art resources, and industry-relevant curriculum will provide you with a transformative learning experience.

Let's embrace the challenges of the digital era, push the boundaries of what is possible, and contribute to the advancements in Data Science and AI. I am excited to witness your growth and success throughout the program.

Best regards,

sm

Suchit Majumdar

Program Director, Data Science & AI

“

This program is uniquely designed to arm you with the mindset, skillset & tools you'll require to succeed in Data Science.

”



Why Data Science & AI?

“

30%

Businesses increasingly prefer **Data-Driven** decision-making. Data Analytics market is growing at CAGR of 30%

Forbes

“

79%

79% of financial institutions believe that Data Science is essential for gaining a **competitive edge**.

Deloitte.

“

60%

60% of companies reported positive **ROI** from Data Science initiatives within first year of implementation.



“

\$900B

Worldwide **AI Market** will grow by a CAGR of 18.9% to reach \$900B mark by 2026



Trending Data Science & AI Roles in 2023

Chief Data Officer

Director of Data Science

Lead Data Scientist

AI Engineer

AI Consultant

Computer Vision Specialist

Senior Data Scientist

Data Scientist

Machine Learning Engineer

Data Engineer

Data Science Consultant

Data Analyst

**It's once in lifetime
experience to under-
go this program. It'll
change you forever.**



accredian

Program Highlights



Unmatched Curriculum

Unmatched Curriculum designed to help you master end - to - end Data Science topics



Unrivaled Faculty

Learn from top Data Scientist from the industry working on real world Data Science projects.



Unmatched Live Cohorts

With 2 classes every week, get 50% more learning hours than other programmes to learn Data Science.



Practical Hands-On

Learn Data Science through practical hands-on learning and get prepared for Data Science roles in the industry.



Career Coach

Get Data Science career-coach who will personally help you transition to your dream Data Science role.



Designed for Non-Coders

Start step-by-step into Analytics and Data Science even you are from a non programming platform.



Industry Integrated

Attend guest lectures from top Data Scientists from companies like Microsoft, Meta, Google, Jio & Walmart



Premium Career Assistance

Get Premium Career Assistance, like resume building sessions, github profile session to supercharge your career.



Learn Top Data Science & AI Tools



“

I'm thankful for getting such wonderful platform and mentors who helped me in upskilling in Data Science, Machine Learning & AI.

”

-Rahul Adwani

Assistant Vice President, Yes Bank



Up Next >>

TRANSFORM YOUR CAREER **PROGRAM SYLLABUS**



Program Syllabus

Term 1: Data Analysis with Python

Module 1 - Data Science Fundamentals

- Thought Experiment: Data Science from a layman's perspective
- Brief intro to Data Science
- How companies use Data Science
- Overview of Data Science project lifecycle
- Walkthrough of data types and data challenges

Module 3 - Recap: Statistics for Data Science

- In-class quiz for Descriptive Statistics
- Common charts used
- In-class quiz for Inferential Statistics
- Probability, Central Limit Theorem, Normal Distribution & Hypothesis testing

Module 5 - Data Manipulation with Pandas

- Types of Data Structures in Pandas
- Clean data using Pandas
- Manipulating data in Pandas
- How to deal with missing values
- Hands-on: Implement Numpy arrays and Pandas Dataframes

Module 2 - Recap: Python for Data Science

- In-class quiz for Python Basics
- Common Python concepts and sample questions
- Variable, Inbuilt datatypes, functions, modules and Packages
- File operations and error handling

Module 4 - Data Operations with Numpy

- Introduction to Numpy Arrays
- How to apply mathematical operations in Numpy
- Array manipulation using Numpy
- Broadcast values across Arrays using Numpy



Program Syllabus Cont.

Term 2: Data Visualization Techniques

Module 6 - Introduction to Data Visualization

- Brief introduction to Data Visualization
- Advantages and Applications of Data Visualization.
- Univariate statistical charts
- Bivariate statistical charts
- Multivariate statistical charts

Module 7 - Data Visualization using Matplotlib

- Introduction to Python's Data Visualization library - Matplotlib
- Basic usage of Matplotlib
- Using matplotlib to plot statistical charts
- Labelling the plots using matplotlib

Module 8 - Hands-on Pandas for Rapid Visualization

- Understanding role of product management
- Defining product vision & strategy
- Identifying key stakeholders & managing expectations

Module 9 - Seaborn for Data Visualization

- Seaborn Data Visualization library - Introduction
- Importing and setting up seaborn
- Using seaborn to plot different statistical charts
- Adding details to seaborn charts using matplotlib

Term 3: EDA & Data Storytelling

Module 10 - Introduction to Exploratory Data Analysis

- Introduction to Exploratory Data Analysis (EDA) steps
- Purpose of EDA
- Advantages of EDA
- Applications of EDA

Module 11 - EDA Framework Deep Dive

- Framework for Scientific Exploration
- Case study: Perform EDA to explore survival using the Titanic dataset
- Apply the EDA framework on a real-world dataset.
- Generate insights and create a story around them.

Program Syllabus Cont.

Module 12 -Scientific Exploration of Industry Data - I & II

- **Case study:** Perform EDA to explore Online Retail dataset
- Implement EDA steps and framework in retail domain.
- **Case study:** Analyze mental health of IT professionals
- Implement EDA steps and framework in healthcare industry.



Project 1: Unmasking the Network
Exploratory Data Analysis on Facebook Data

Module 13 - Student Presentations & Insight Delivery

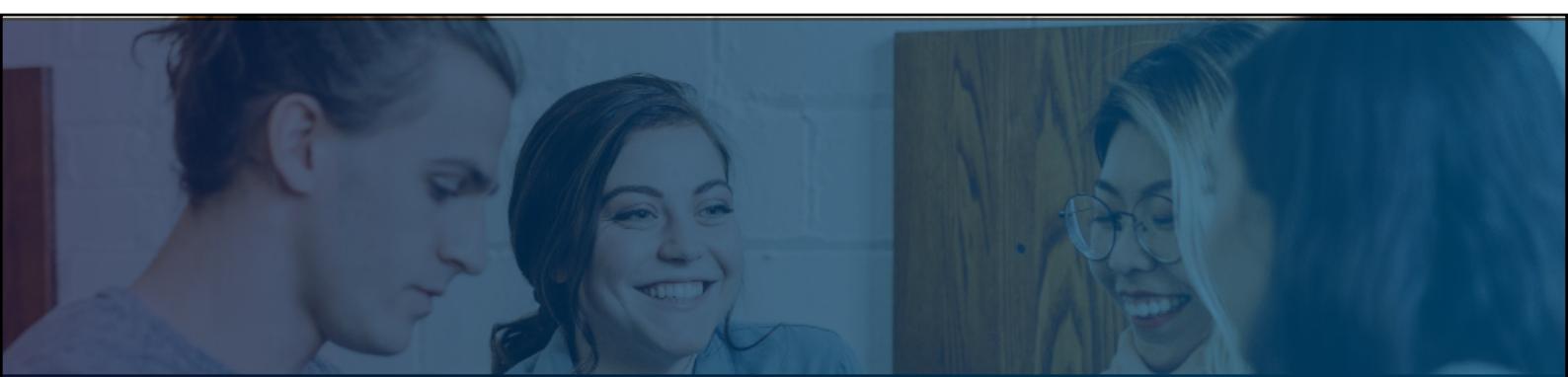
- Student hosted project delivery sessions.
- Sessions coordinated by the instructor.
- Storytelling using generated insights.
- Best-practices for Data Visualization and Insight Delivery.



Project 2: Drive-Thru to Data
Exploratory Data Analysis on a fast food joint Data

Minor Capstone Project

In a simulated environment, you get to work **with a major Telecom company** that seeks help from your team of Data Scientists to resolve a major marketing hurdle. Get a near **real world exposure** of working on industry problems within data science teams.



Program Syllabus Cont.

Term 4: Machine Learning Foundation

Module 14 -Introduction to Machine Learning (ML)

- What does Machine Learning mean?
- Popular applications of Machine Learning
- Types of Machine Learning - Supervised to Unsupervised methods
- Machine Learning workflow

Module 15 - Linear Regression

- Supervised learning: Introduction to Linear Regression
- Use cases of Linear Regression
- How to fit a Linear Regression model?
- Evaluating and interpreting results from Linear Regression models
- **Case study:** How linear regression helps determine demand?

Module 16 - Logistic Regression

- Supervised Learning: Introduction to Logistic Regression
- Logistic Regression use cases
- Understand the use of Odds Ratio & Logit Function to perform Logistic Regression
- **Case study:** Predicting default cases in the Banking Industry

Module 17 - Model Evaluation Techniques

- Introduction to evaluation metrics and model selection in Machine Learning
- Importance of Confusion Matrix for predictions
- Measures of model evaluation - Sensitivity, Specificity, Precision, Recall & F1 Score, AUC-ROC Curve
- **Case study:** Applying model evaluation techniques to prior case study



Healthcare Expense Forecast

Predicting medical expenses for Efficient resource allocation purposes



Telecom Churn Analysis

To predict Whether a Customer will Churn or not

& many more

Program Syllabus Cont.

Term 5: Machine Learning Intermediate

Module 18 - Decision Trees

- Supervised Learning: Introduction to Decision Trees
- Understanding criterion (Entropy & Information Gain) used in Decision Trees
- **Case study:** Predict passengers' survival in a Ship mishap

Module 20 - Dimensionality Reduction using PCA

- Unsupervised Learning: Introduction to Curse of Dimensionality
- What is dimensionality reduction?
- Technique used in PCA to reduce dimensions
- Applications of Principle Component Analysis (PCA)
- **Case study:** Optimize model performance using PCA on high dimension dataset

Module 19 - Random Forests

- Supervised Learning: Introduction to Random Forest
- Using Ensemble methods in Decision Trees
- Applications of Random Forest
- **Case study:** Predict passengers' survival in a Ship mishap

Module 21 - Naïve Bayes Classifier

- Introduction to Naïve Bayes classification
- Refresher on Probability theory
- Applications of Naive Bayes Algorithm in Machine Learning
- **Case study:** Classify Junk emails based on probabilitycall & F1 Score



Gender Inference through Voice Analysis
Prediction of gender from voice sample



Airbnb Rental Prediction
To predict Whether a Customer will Churn or not

& many more

**Our Programs are
designed to give you
edge in Data Science
& AI industry.**



Program Syllabus Cont.

Term 6: Machine Learning Advanced

Module 22 - KNN (K- Nearest neighbors)

- Introduction to KNN
- Calculate neighbors using distance measures
- Find the optimal value of K in the KNN method
- Advantage & disadvantages of KNN
- **Case Study:** Classify malicious websites using the close neighbor technique

Module 24 - Ensemble Learning

- Introduction to Ensemble Learning
- What are Bagging and Boosting techniques?
- What is the Bias variance trade-off?
- **Case study:** Predict wage classes across adults

Module 23 - K-means Clustering

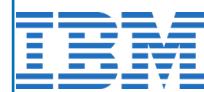
- Introduction to K-means clustering
- Decide clusters by adjusting centroids
- Find optimal ‘k value’ in K-means
- Understand applications of clustering in Machine Learning
- **Case study:** Segment flower species in Iris flower data

Module 25 - Optimization

- Introduction to optimization in ML
- Applications of optimization methods
- Optimization techniques: Linear Programming using Excel solver
- How Stochastic Gradient Descent (SGD) Works?
- **Case study:** Applying SGD on data



Action Anticipator: Unlocking Human Behaviors



Employee Gateway Prognosticator

& many more

Major Capstone Project

Experience a real world simulation of a company **Employee Retention Program** that needs to be solved using Data Science and Machine Learning. Work with a team of Data Scientists and experience real-world problem solving through Data Science

Program Syllabus Cont.

Term 7: Basics of AI, Tensorflow & Keras

Module 26 - Introduction to Artificial Intelligence

- What is Artificial Intelligence?
- Growth of AI
- Reasons Behind the Boom of AI
- Applications of AI
- Future Possibilities

Module 27 - Introduction to Deep Learning Module

- Basics of Neural Networks
- How Do Neural Networks Work?
- How Do Deep Neural Networks Learn?
- Matrices & Operations in a Nutshell
- Maths Behind Deep Neural Networks

Module 28 - Components Affecting Deep Learning Models Module

- Using Different Hyperparameters
- Learn What Components Affect DL Models
- Learn How Activation Functions Trigger Neurons
- Review Different Activation Functions
- Speed of Learning - Learning Rate for Machines
- Limitations of Gradient Descent

Module 29 - Deep Learning Model Practical with Tensorflow & Keras

- Practical Implementation of the Components Affecting Deep Learning Models
- Tuning Using Different Optimizers - Nesterov, Adagrad, RMSprop, Adam
- Understanding Early Stopping, Regularization, Dropout, Batch Normalization



Foretelling Ad Outcomes

Predicting whether an ad will be profitable or not



Threatmeter: Guaging DEFCON levels

Predicting a country's DEFCON level based on data provided

& many more

Program Syllabus Cont.

Term 8: Computer Vision

Module 30 - Intro to Convolutional Neural Networks

- Understand Convolution
- Techniques Applied in a Cnn - Pooling, Padding
- Components of a Convolutional Neural Network (cnn)
- Building a Cnn in Keras7. Overcome Local Minima Problem Using Momentum

Module 31 - Decoding Image Components

- Popularly Used Techniques for Image Processing
- How to Collect, Resize & Reduce Image
- Components of an Image

Module 32 - Identifying MNIST Using CNN

- Try Identifying Numbers Using CNN
- Apply a Few Common Architectures to Identify Better

Module 33 - Preprocessing Image Data to Apply CNN

- Use Image Augmentation Techniques on Different Datasets
- Experiment with Scaling, Transformations, Etc. to Get Different Outputs.



Automated Disaster Tweet Detection
Classify Disaster Tweets using Text Sentiment Analysis

verizon[✓]

Real-time SMS Spam Classification
Predict whether a message received by the user is Spam or Not

& many more

Program Syllabus Cont.

Term 9: Natural Language Processing

Module 34 - Introduction to Nlp & Word Vectors

- Introduction to NLP
- Bag of Words Model
- Converting Text to Numbers
- Using Word2vec to Convert Text to Numbers
- Using Pre-built Word2vec Embeddings

Module 35 - Decoding Textual Data

- Implement Text to Number Operations
- Build Word2vec Using Regular Nltk Package
- Identify Word to Number Relationship

Module 36 - NLP using Recurrent Neural Networks (RNN)

- How Can We Make Neural Networks Remember the Past?
- Introduction to RNN
- LSTM & Gated Recurrent Unit (GRU)

Module 37 - NLP using Memory Alterations

- Using Long Short-term Memory (LSTM) in Place of RNN
- Using RNN/LSTM/GRU for Classification in Keras

MONSANTO 

Advanced Image Analysis for Fruits 360

Predict What Fruit a particular Image Contains.

 MOLINA[®]
HEALTHCARE

Instant Gender Classification from Images

Classify Gender from an Image.

& many more

Program Syllabus Cont.

Term 10: Specialization in CV

Module 38 - Transfer Learning

- Can Machines Learn from each other?
- Understanding Transfer Learning
- Image Classification using Transfer Learning
- Train a Model using Imagenet Data
- Classify Objects Using Cnn Models

Module 40 - Instance Segmentation in Images

- How to Identify Objects at the Pixel Level?
- Mask R-CNN Model for Instance Segmentation

Module 39 - Object Detection Using Cnn Based Algorithms

- What is Required to Detect Multiple Objects in an Image?
- Using Region-based Cnn (R-CNN) for Object Detection
- Improving R-CNN Using Fast R-CNN Network
- You Only Look Once (yolo) for Object Detection

Module 41 - Generative AI

- Introduction to Generative Models in Computer Vision
- Image Synthesis with Generative Adversarial Networks (GANs)
- Image-to-image Translation
- Variational Autoencoders (vaes) for Image Generation & Manipulation
- [Use cases : DALL-E](#)

Term 11: Specialization in NLP

Module 42 - Teach Machines to Generate New Textual Data

- Language Modeling - Generating New Text Data
- Building Character Level RNN (char-RNN)
- Building Word Level RNN

Module 43 - Language Translation using Seq2seq Models

- Understanding the Requirements of Machine Translation
- Introduction to Sequence to Sequence (seq2seq) Model
- Building Seq2seq Model in Keras

Program Syllabus Cont.

Module 44 - Techniques to Enhance Seq2seq Models (Attention Mechanism)

- What is Attention Mechanism
- Applying Attention to Seq2seq Models

Module 45 - Advanced NLP Using BERT

- Introduction to BERT
- BERT Embeddings
- [Case Study: Create Question Answer Model Using BERT](#)

Module 46 - Understanding LLM & their Usecases

- Introduction to Large Language Models
- Gpt-3.5 Architecture & Capabilities
- Working with Large Language Models
- Methods for Evaluating the Performance of Large Language Models
- [Usecase: ChatGPT](#)

Real World Business Use Cases



AI Capstone Project

In this ever evolving world, solving complex problems get easier using AI. In this capstone project you will be an AI expert who is helping a hypothetical company resolve some major challenges it faces by using AI. Get a chance to work with a team of AI specialists and a simulated environment to help you relate to real world challenges companies face regularly.

Learn from India's Best Data Scientists



Sr. Faculty
acredian



Sr. Faculty
acredian



Sr. Faculty
acredian



**Team Lead, Data
Analytics**
paytm



Lead Data Scientist



**Associate Director
Data Science & AI**
AstraZeneca



**Associate Director
Data Science**
NOVARTIS



**Director
Data Science**
**AMERICAN
EXPRESS**



**Associate Manager
Data Science**
**DECISION TREE
ANALYTICS & SERVICES**

Accredian Advantage

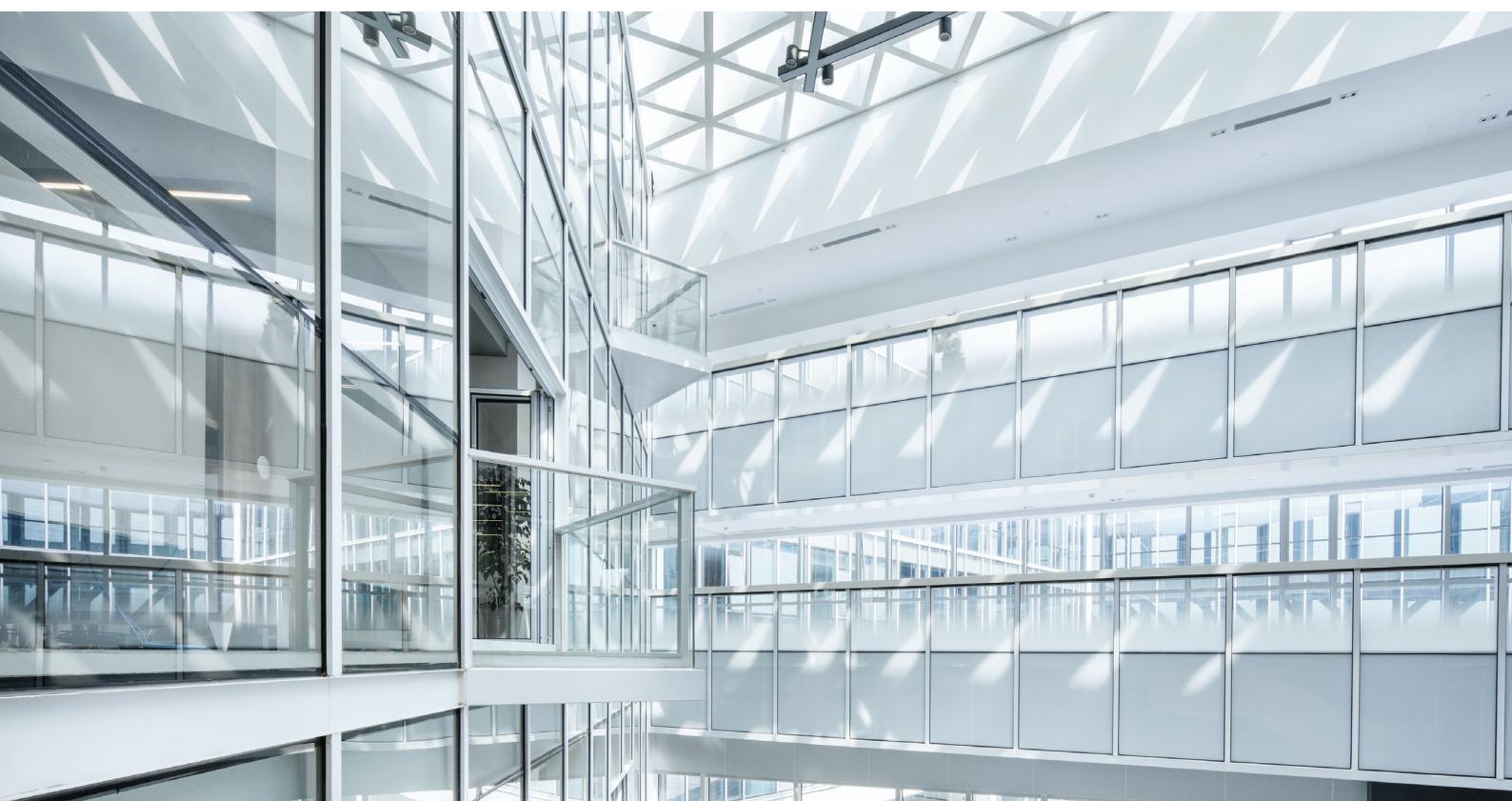
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credentials that matter

In this Program, you will have the opportunity to choose industry electives from four areas of specialization. These elective courses are crafted to complement the core learning experience, enrich your skill sets in a domain. All of these are recorded courses which gives you the flexibility to do them as per your schedule.

1. **Finance Analytics Course**
2. **Healthcare Analytics Course**
3. **Telecom Analytics Course**
4. **Retail Analytics Course**

Get Access to 2 more courses complimentary

1. **PowerBI**
2. **SQL**



Top Data Science Speakers

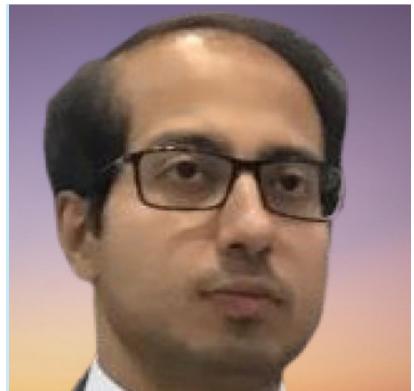
We regularly invite Top Data Scientists from industry to share their expertise, insights and learnings in Data Science and AI. Our past speakers include experts like the ones below.



Bhairav Mehta
Data Science
Amazon



Anshuman Kumar
Data Scientist
Deloitte



Sutirtha Chakraborty
Data Science
Walmart



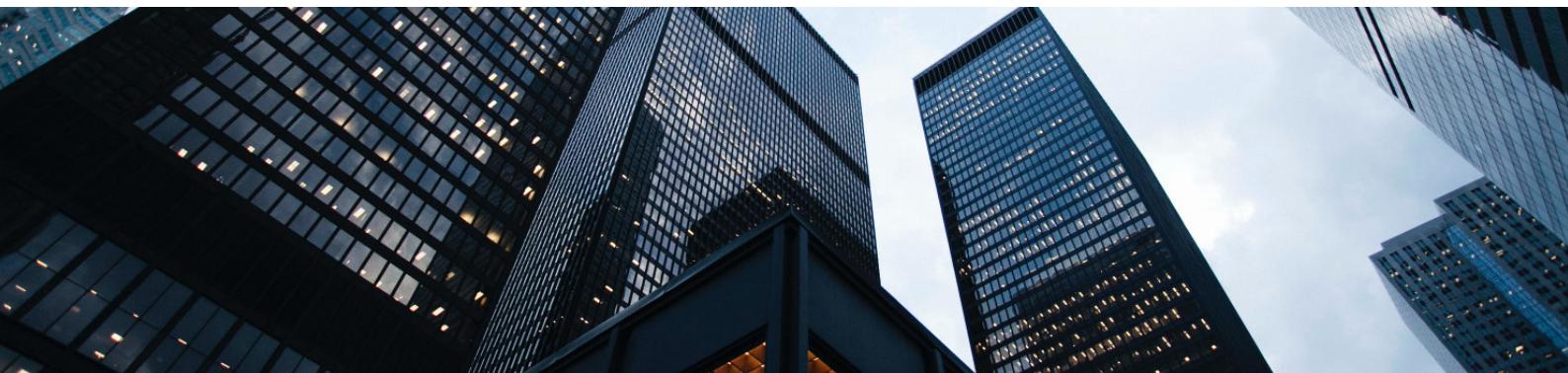
Sourav Ghosh
Data Scientist
Boeing



Shailesh Kumar
Chief Data Scientist
Jio



Ankush Khandelwal
Head of Analytics
Grab



International Data Science Speakers

We host Top International Data Scientists to deliver industry talks. Understand Global best practices, key trends across Industries and Geographies. Below are some speakers who have given talk at Accredian.



Marijn Markus
Data Science
Capgemini



Filipa Castro
Data Science
Continental



Alexey Grigorev
Data Science
OLX Group



Chris Orwa
Head of Data
Senty Ltd



Dr. Kirk Borne
Data Science
Booz Allen Hamilton



Juan Kanggrawan
Analytics
Jakarta Smart City



Key Statistics

12 months

Comprehensive Learning

190+

Hours of Live Classes

11

Terms

15+

Tools & Frameworks

8

Career Assistance Sessions

Get Certified from India's Premier Institution

CERTIFICATE OF COMPLETION

is proudly presented to

Hemanka Sarmah

For successfully completing **PGP in Data Science & AI**
program held between _____ to _____

Manvender Singh
CEO, Accredian



FullStack Education Pvt. Ltd. 250, Udyog Vihar, Gurugram, India. 122015

Suchit Majumdar
Chief Data Science Mentor, Accredian



Certification ID:
01010-ABC

Transition into Data Science with Intensive Career Support



DATA SCIENCE CAREER LAUNCHPAD

1 month exclusive program for working professionals.



RESUME WORKSHOP

We'll help you build a sharp Data Science Resume.



INDUSTRY EXPERT SESSIONS

Get access to monthly industry expert sessions.



LIVE JOB ANALYSIS

Apply to the right companies based on your profile.



INTERVIEW GUIDES

Download Data Science, ML & AI interview question bank.



MOCK INTERVIEWS

Participate in 1-on-1 mock interviews and be more prepared.



HIRING PARTNERS

Get better opportunities by applying to the right companies.

Learner Success Stories



“I would like to thank Accredian team for helping me develop discipline needed to become a Data Scientist.”

Anirudha Subramanya Acharya
Associate Data Science Manager, Soroco



“I would like to thank Accredian for wonderful support and beautiful journey. Learnt a lot and intend to use the same in my work.”

Sohamjeet Ganguly
Data Scientist, TCS



“Accredian helps you through real-world applications of Data Science in your actual business or work.”

Foram Salva
Data Scientist, MYGLAMM

“ I came from non-coding background & transitioned successfully into Data Science. Thank you Accredian ”

Program Snapshot

START DATE	Check website for latest batch start dates
DURATION	12 Months
PROGRAM TERMS	11 Terms
WEEKLY SCHEDULE	Online classes on weekends Self practice/assignments on weekdays
PROGRAM FEE	INR 240,000 + GST Limited 50% Scholarship for Upcoming Batch

Talk to your Learning Advisor



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credentials that matter

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