



upGrad



Post Graduate Program in Data Science

Online and Offline



upGrad is an online education platform to help individuals develop their professional potential in the most engaging learning environment. Online education is a fundamental disruption that will have a far-reaching impact. At upGrad, we are working towards transforming this online education wave into a tsunami! We are taking a full-stack approach of leveraging content, technology, marketing and services to offer quality education at scale in partnership with corporates & academics to offer a rigorous & industry relevant program.

Based on our market research and conversation with the industry, we have identified Data Science as one of the sectors with critical supply demand imbalance. Our vision is to design and deliver a quality online Post-graduate Program in Data Science to drive the growth of the sector and make India a global hub for data science.

If you are reading this, you may wish to accelerate your career in Data Science. With upGrad, we promise to equip you with the perfect mix of business acumen and technical capabilities to help you achieve exactly the same.

Ronnie Screwvala

Co-founder & Chairman
upGrad



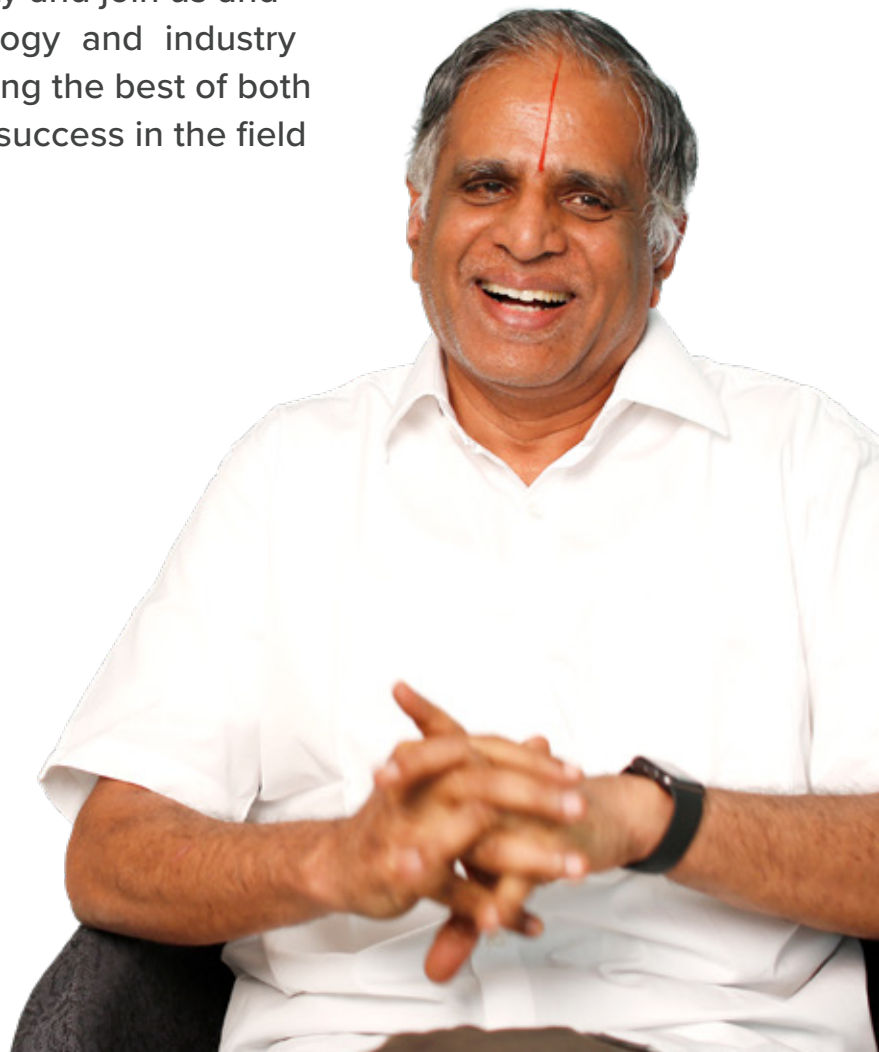
IIIT-B is well respected in the global academic circles as well as in the global analytics and IT industry. We have outstanding world-class faculty, with years of experience, in charge of running the Analytics Essentials Executive Education Course.

We are excited to partner with upGrad to offer a one-of-its-kind, academically rigorous and industrially relevant PG Program in Data Science. IIIT-B's faculty will be discussing the conceptual depths of topics such as Data Science, Machine Learning and AI, Big Data Analytics and this will be complimented by industry relevant case studies from major industry verticals by industry leaders from upGrad's industry network. Further, our strong placement network, industry mentorship and the credibility of a PG Program will provide you with just the right push to accelerate your career in Data Science!

We invite you to take this opportunity and join us and make use of the excellent pedagogy and industry collaborations. You will truly be getting the best of both worlds, which will help you achieve success in the field of Data Science.

Prof. S. Sadagopan

Director
IIIT Bangalore



WHY DATA SCIENCE WITH UPGRAD AND IIIT-B?



PG PROGRAM BY IIIT-B

Get certified by IIIT-B on successful completion of the PG Program in Data Science



CAREER SUPPORT

Get access to extensive 360° career coaching services and get introduced to the right opportunities to upgrade yourself



DOMAIN SPECIALISATION

Choose from BFS, E-commerce, Healthcare, Natural Language Processing or Deep Learning



FOR THE INDUSTRY, BY THE INDUSTRY

Receive 1:1 mentoring from Industry Experts. Execute 140+ hours of industry-led projects & case studies spread across online and classroom sessions



ONLINE + OFFLINE LEARNING

Learn the most recent advances in Data Science and ML through 400+ hours of online learning and 100+ hours of classroom interaction



STUDENT MENTORSHIP

Get unparalleled mentorship and doubt resolution from IIIT-B faculty and our panel of industry experts

INSIGHTS FROM INDUSTRY EXPERTS



TEJAS SANGHVI
Vice President
Fractal Analytics



ANSHUMAN GUPTA
Director - Data Science
Pitney Bowes



UJJYAINI MITRA
Head of Analytics
Viacom 18



S. ANAND
CEO
Gramener



SAMEER DHANRAJANI
CSO
Fractal Analytics



KALPANA SUBBARAMAPPA
Ex-Assis. VP, Decision Sciences
GENPACT



SAI ALLURI
PRO Analytics &
Strategy Manager
Uber



HINDOL BASU
Partner
Tata IQ

CONCEPTS FROM TOP ACADEMICIANS



PROF. S. SADAGOPAN
Director
IIIT Bangalore



TRICHA ANJALI
Associate Professor
IIIT Bangalore



**CHANDRASHEKAR
RAMANATHAN**
Dean (Academics)
IIIT Bangalore



DINESH BABU JAYAGOPI
Assistant Professor
IIIT Bangalore



G SRINIVASARAGHAVAN
Professor
IIIT Bangalore

IIIT BANGALORE - CLASSROOM LEARNING AND MEET UPS

You will get to experience offline classroom teaching along with peer to peer networking. You will be required to visit IIIT-Bangalore campus twice a month for offline lectures



ELEMENTS OF ONLINE LEARNING

- Lectures by IIIT-B faculty
- Case-studies by Industry Experts
- 14+ Industry led projects
- 400+ hours of online learning
- Online career support and mentorship

ELEMENTS OF OFFLINE LEARNING

- 20+ fortnightly sessions at IIIT-Bangalore campus
- Live lectures and doubt clarification
- Demonstration of projects by experts

PROGRAM CURRICULUM

Note: This curriculum is subject to change based on inputs from IIIT-B and industry modules marked as (*) are optional.

PREPARATORY COURSE

PYTHON FOR DATA SCIENCE

Sharpen your Data Analysis skills with Python, which is the choice of language for simplicity, readability and quick deployment

DATA ANALYTICS IN EXCEL

Taught by one of the most renowned data scientists in the country - S. Anand, CEO, Gramener, this module takes you from a beginner level Excel user to an almost professional user

VISUALISATION USING TABLEAU

Learn an important and widely used tool for Data Analysts - Tableau

STATISTICS AND EDA

DATA VISUALISATION IN PYTHON

Make your data alive with visuals using Python and tools like Tableau

ANALYTICS PROBLEM SOLVING

This module covers concepts of the CRISP - DM framework for business problem-solving

INVESTMENT CASE STUDY

Let's get our hands dirty! Your first data science project. Find sectors in which your company should invest based on given parameters

EXPLORATORY DATA ANALYSIS

Derive initial insights from the data using Excel. Learn from the best - S. Anand, CEO of Gramener

INFERENCE STATISTICS NEW!

Build a solid statistical foundation. This will help you understand data and the results of your analysis

HYPOTHESIS TESTING

Understand how to formulate and test hypotheses to solve a business problem

CASE STUDY- UBER SUPPLY DEMAND GAP

Uber needs your help! Apply the statistical concepts to solve Uber's problem and present your results using engaging visuals

MACHINE LEARNING I

LINEAR REGRESSION

Learn to implement linear regression. Help a digital media company understand why their viewership is falling and propose recommendations to increase viewership

LINEAR REGRESSION ASSIGNMENT

Build a model to understand a factors car prices vary on and help a Chinese company enter the US car market

LOGISTIC REGRESSION

Use logistic regression to solve a Case Study to predict employee attrition in a firm and help them plan their manpower

CLUSTERING

Learn how to create segments based on similarities using k-means and hierarchical clustering. Use this to create customer segments that can be targeted using different marketing strategies

PRINCIPLE COMPONENT ANALYSIS (PCA) NEW!

Learn how to reduce the dimensions of data to make it useful for analysis. Use it to understand how movie recommendations work

HR ANALYTIC CASE STUDY

Use your skills to predict which employee is going to leave a company in the near future

SUPPORT VECTOR MACHINE*

Learn the fundamentals of SVMs and use them to detect spam emails, recognise alphabets and more

MACHINE LEARNING II

MODEL SELECTION AND ADVANCED REGRESSION NEW!

Learn about advanced regression methods such as Lasso and Ridge and how to benchmark and select the best algorithm for a given dataset and problem statement

DECISION TREES

Use decision trees on medical data to predict if a patient has cardiovascular disease

BOOSTING

This module will cover the concepts of boosting and different boosting algorithms - Adaboost, GBM and XGBoost

NEURAL NETWORKS*

Master Feed-forward, Recurrent and Gaussian Neural Networks. This is your way into AI!

TIME SERIES* NEW!

Learn how to make predictions using time dependent data. Use it to forecast energy consumption, stock prices and sales

CASE STUDY - TELECOM CHURN

Help a telecom giant predict if a customer will churn or not. Apply multiple algorithms simultaneously to identify the one that works the best

BIG DATA AND SQL

DATA ANALYSIS USING SQL

Learn basic and advance concepts of SQL and add another language to your programming tool kit!

HADOOP

Hadoop is a distributed computing framework. Learn how to analyze data with millions of rows quickly using distribute frameworks

HIVE AND SQOOP

Apache Hive is the query language for Big Data applications. Learn it from the inventor of the language himself- Joydeep Sen Sarma

SPARK

Apache Spark is lightening fast data processing engine. Use it to analyze millions of Amazon reviews and gain insights from them

SPARK - CASE STUDY

Learn about big data analytics using Spark and help the New York Police Department visualise vehicle parking data

DOMAIN ELECTIVES

BFSI

ACQUISITION ANALYTICS

Understand the component of acquisition strategies & practice hands-on exercise of Data analytics for acquiring the potential customers

ASSIGNMENT- ACQUISITION ANALYTICS

Build a response model based on the clients, campaign and economic information provided by the Portuguese Bank

ENGAGEMENT ANALYTICS

Now that you have learnt how to acquire customers, learn how to engage them and prevent their attrition

RISK ANALYTICS

Learn about the risk associated with customers who default on their loan or credit, and the analytics related to it

MINI CAPSTONE PROJECT

Help CredX identify the ideal applicants to provide credit cards to by building an application scorecard

E-COMMERCE

MARKET MIX MODELLING

Learn how to optimise your marketing spends in order to maximise the ROI

RECOMMENDATION SYSTEMS

Learn about the algorithms that power the recommendation engines of the e-commerce sites

ASSIGNMENT - RECOMMENDATION SYSTEMS

Build a recommendation engine based on beer preferences of users

PRICE OPTIMIZATION

Learn how prices are dynamically optimised on an e-commerce platform

A/B TESTING*

Understand the concept behind A/B tests and also learn how to execute an A/B test in Optimizely

MINI CAPSTONE PROJECT

Model the impact of different marketing levers on the sales figure of ElecKart

HEALTHCARE

PAYER ANALYTICS

In this module, you will explore the different analytics opportunities that exist in the healthcare payer space

ASSIGNMENT- PAYER ANALYTICS

Stratify patients according to the risk of cost they pose to the healthcare payer

PROVIDER ANALYTICS

In this module, you will explore the different analytics opportunities that exist in the healthcare provider space

ANALYTICS IN THE PHARMACEUTICAL INDUSTRIES

Learn how pharmaceutical companies harness the power of data analytics

MINI CAPSTONE PROJECT

Decipher the CMS hospital star rating system using supervised and unsupervised models

NATURAL LANGUAGE PROCESSING NEW!

BASICS OF TEXT PROCESSING

Get started with the Natural Language Toolkit, learn the basics of text processing in Python

LEXICAL PROCESSING

Learn to extract features from unstructured text and build machine learning models on text data

SYNTAX AND SEMANTICS

Conduct sentiment analysis, learn to parse English sentences and extract meaning from them

OTHER PROBLEMS IN TEXT ANALYTICS

Explore the applications of text analytics in new areas and various business domains

DEEP LEARNING AND NEURAL NETWORKS NEW!

INFORMATION FLOW IN A NEURAL NETWORK

Understand the components and structure of artificial neural networks

TRAINING A NEURAL NETWORK

Learn the cutting edge techniques used to train highly complex neural networks

CONVOLUTIONAL NEURAL NETWORKS

Use CNNs to solve complex image classification problems

RECURRENT NEURAL NETWORKS

Study LSTMs and RNNs applications in text analytics

CREATING AND DEPLOYING NETWORKS USING TENSORFLOW AND KERAS

Build and deploy your own deep neural networks on a website, learn to use tensorflow API and Keras

MINI CAPSTONE PROJECT

INTRODUCTION TO KAGGLE

An introduction to the world of Kaggle. How it can be used to enhance visibility

FEATURE ENGINEERING

Build general features to build a model for text analytics

MINI CAPSTONE

Solve a problem based on one of the competitions held on Kaggle or on an industry dataset as a final test of what you have learned so far

**This module is optional*

SUCCESS STORIES



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The assignments and case studies are the ones that will really give you a mileage during the job interviews. Through upGrad and IIIT-B career support, I have secured an offer from an MNC. I have learnt quite a lot from peer discussions. All-in-all upGrad and IIIT-B program can really help you transition to data science.

- **Antarik, Network Engineer, USEReady**



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I was sceptical even after my admission in the upGrad & IIIT-B PGDDA program thinking it is an online pilot program. But I soon realised otherwise. This course covers deep concepts in DA and develops confidence in topics through challenging assignments. Team upGrad is highly reachable and very prompt in addressing course-related concerns. Managing my work and concentrating on the course has never felt like a burden because of how thoughtfully the program is developed for working professionals.

- **Kishore M, Sr. Associate | Projects, Cognizant**



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The peer-to-peer interactions help a lot. It is brilliant to collaborate and learn with others even though it's an online program. IIIT-B is a good brand to have and the curriculum of the program is solid.

- **Sajal Roychowdhury, Risk Analyst, Amazon India**

PROGRAM STARTS

March 2019

DURATION

11 months

PROGRAM FLOW

8-9 months - Learn Data Science and Machine Learning from scratch with industry led projects.

2-3 months - Specialise in 2 electives as per your career goals

WEEKLY COMMITMENT

12 hours per week

4-7 hours of asynchronous learning time

4-7 hours of assignments and projects

2 classroom sessions fortnightly

PROGRAM FEE

₹4 Lakhs (incl of all taxes)

Flexible Payment Options Available

ELIGIBILITY

Bachelor's/Master's degrees with a minimum of 50% marks in graduation

SELECTION PROCESS

Selection test to assess quantitative and analytical reasoning

For further details, call us at **+91-7021148734** or contact:



SHUBHAM LOHADE

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Program Director

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COMPANY INFORMATION

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Worli, Mumbai - 400018