



UpGrad &  MIT-B

PG DIPLOMA IN
**MACHINE LEARNING
& AI**

11 MONTHS | ONLINE



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.

The field of Data Science is maturing rapidly and demands professionals skilled not only in Statistics, but also in advanced concepts such as Natural Language Processing and Neural Networks. Our vision is to design and deliver a quality online Post-Graduate Program in Machine Learning/AI to produce top-notch Data Scientists and Machine Learning experts and help India capitalize the next wave of Artificial Intelligence. With UpGrad, we promise to equip you with the perfect mix of business acumen and technical capabilities to help you contribute to this technological revolution.

Ronnie Screwvala

*Co-Founder
UpGrad*



IIIT-Bangalore is one of the leading institutes of higher education in the country and is a renowned name in the global analytics and IT industry. Our world-class faculty with years of teaching experience, have successfully worked with UpGrad to deliver quality online executive education in Data Science.

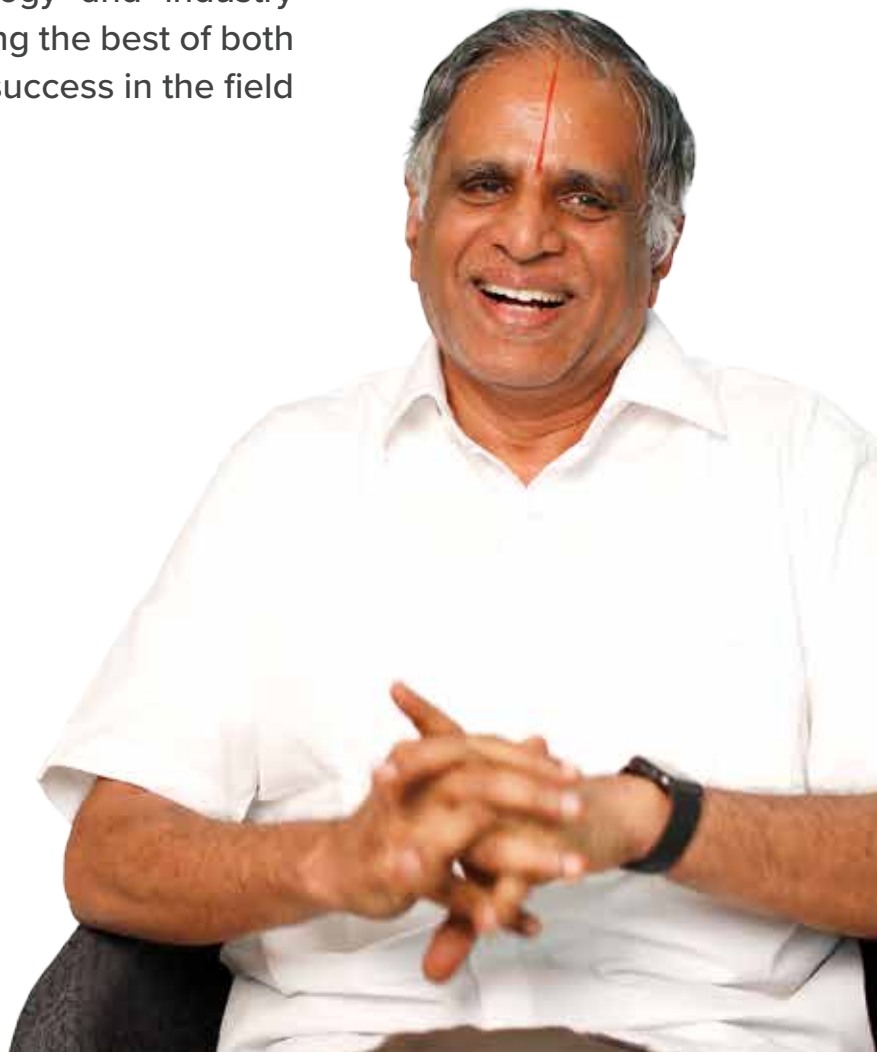
We are excited to partner with UpGrad yet again, to offer an academically rigorous and industry-relevant PG Diploma Program in Machine Learning and AI. IIIT-B's faculty will be covering the conceptual depths of topics such as Neural Networks, Deep Learning and NLP and this will be complemented by case studies from industry leaders from UpGrad's industry network. Further, our strong career support services, industry mentorship and the credibility of a PG Diploma Program will provide you just the right push to accelerate your career in Machine Learning and AI.

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 Machine Learning and AI.

Prof. S. Sadagopan

Director

IIIT-Bangalore



WHY MACHINE LEARNING & AI WITH UPGRAD & IIIT-B?



CUTTING EDGE CURRICULUM

Master advanced machine learning and artificial intelligence concepts



PG DIPLOMA FROM IIIT-B

Earn a reputed Post Graduate Diploma without leaving your job



ON-THE-GO LEARNING

Lectures squeezed into 30-minute learning sessions, anytime-anywhere



FOR THE INDUSTRY, BY THE INDUSTRY

Learn application through projects created in collaboration with industry



CAREER SUPPORT

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



INDUSTRY MENTORSHIP

Receive 1:1 industry mentorship from ML and AI experts to guide you to your milestones

INSIGHTS FROM INDUSTRY EXPERTS



S. ANAND
CEO
Gramener



UJJYAINI MITRA
Head of Analytics
Viacom 18



HINDOL BASU
Partner
Tata IQ



KALPANA SUBBARAMAPPA
Ex-AVP, Decision Sciences
GENPACT



SAI ALLURI
PRO Analytics &
Strategy Manager
Uber



ANKIT JAIN
Data Scientist
Uber



RAJ ONKAR
Data Science Manager
Accenture



ANSHUMAN GUPTA, PHD
Director - Data Science
Pitney Bowes

CONCEPTS FROM TOP ACADEMICIANS



PROF. S. SADAGOPAN
Director
IIIT Bangalore



TRICHA ANJALI
Associate Professor
IIIT Bangalore



G SRINIVASARAGHAVAN
Professor
IIIT Bangalore



DINESH BABU JAYAGOPI
Assistant Professor
IIIT Bangalore



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



SRINATH SRINIVASA
Dean (R&D)
IIIT Bangalore

PROGRAM CURRICULUM

Note: This curriculum is subject to change based on inputs from IIIT-B and Industry.

PRE-PROGRAM PREPARATION

PYTHON FOR DATA ANALYSIS

Get acquainted with Data Structures, Object Oriented Programming, Data Manipulation and Data Visualization in Python

INTRODUCTION TO SQL

Learn SQL for querying information from databases

MATH FOR DATA ANALYSIS

Brush up your knowledge of Linear Algebra, Matrices, Eigen Vectors and their application for Data Analysis

STATISTICS ESSENTIALS

INFERENTIAL STATISTICS

Learn Probability Distribution Functions, Random Variables, Sampling Methods, Central Limit Theorem and more to draw inferences

HYPOTHESIS TESTING

Understand how to formulate and test hypotheses to solve business problems

EXPLORATORY DATA ANALYSIS

Learn how to summarize data and derive initial insights

MACHINE LEARNING

LINEAR REGRESSION

Learn to implement linear regression and predict continuous data values

NAIVE BAYES AND LOGISTIC REGRESSION

Understand how supervised learning is used for classification

CLUSTERING

Learn how to create segments based on similarities using K-Means and Hierarchical clustering

SUPPORT VECTOR MACHINES

Learn to classify data points using support vectors

DECISION TREES

Tree-based model that is simple and easy to use. Learn the fundamentals on how to implement them

NATURAL LANGUAGE PROCESSING

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 & NEURAL NETWORKS

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 CNN's to solve complex image classification problems

RECURRENT NEURAL NETWORKS

Study LSTMs and RNN's 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

GRAPHICAL MODELS

INTRODUCTION TO BAYESIAN METHODS

Understand basic concepts of Graphical Models

GRAPHICAL MODELS

Study probabilistic ways of modelling systems - Markov properties, Factor Graphs and Bayesian Belief Networks

LEARNING AND INFERENCE

Learn how Graphical Models are used for Supervised and Unsupervised Learning

REINFORCEMENT LEARNING

INTRODUCTION TO RL

Understand how machines can be programmed to learn by themselves

EXACT METHODS

Learn the math behind Exact Statistics - Dynamic Programming, Monte Carlo methods, Temporal Difference Learning

APPROXIMATE METHODS

Learn policy gradient methods and their applications in learning

PROGRAM DETAILS

PROGRAM STARTS

March, 2018*

**Preparatory sessions will be starting from 15th December, 2017.*

WEEKLY COMMITMENT

10 hours per week

4-5 hours of asynchronous learning time
5-7 hours of assignments & projects
1 live session every 3 weeks

DURATION

11 Months

PROGRAM FEE

INR 2,75,000 (Incl. of all taxes)

Flexible Payment Options Available

ELIGIBILITY

Bachelor's/Master's degrees in Computer Science/Engineering/Math/Statistics/Economics/Science with a minimum of 50% marks in graduation

SELECTION PROCESS

Candidates are expected to fill out an application form and then undergo a selection test to assess college-level mathematics and basic programming skill

For further details, call us at **+91 22 6156 2183** or contact:



ROHIT SHARMA

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ISHANI MUKHERJEE

Chief Admissions Counsellor

ai@upgrad.com

COMPANY INFORMATION

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Worli, Mumbai – 400018.

