ADVANCED DATA SCIENCE FOR MANAGERS

STARTS JUNE 30, 2022 | EARN EXECUTIVE ALUMNI STATUS

1 YEAR | LIVE ONLINE SESSIONS

Overview

In today's dynamic business landscape, the ability to drive corporate strategy and business decisions through data-driven insights leads to market leadership and gives organisations a competitive edge. Increasingly, the integration of data science and analytics is proving to be a game-changer for businesses across industries. Organisations are seeking to gain revenue-generating insights from data and build future strategies for business growth.

IIM Kozhikode's **Advanced Data Science for Managers** provides insights on data management, exploratory data analysis, and the use of machine learning algorithms. Along with a strategic and managerial understanding, the programme will help professionals enhance their proficiency in data science and gain in-depth skills and robust knowledge of machine learning algorithms and techniques supported by R and Python.

Since most of the data available today is in an unstructured format, joining this year-long programme will train professionals in techniques such as text mining and social media analytics that are vital for maximising business growth and transformation. Additionally, this programme's effective pedagogy and focus on real-world examples, case studies, and practical sessions will assist in identifying data insights and making high-output business decisions. On completing this programme, you will receive a certificate of completion and will be eligible for the prestigious Executive Alumni Status of IIM Kozhikode.

Starts On
June 30, 2022

Duration
1 Year

Format
Live Online Sessions

Programme Fee
INR 1,85,000 + GST

The Indian Big Data Technology and Service Market is expected to grow at a CAGR of 35.1% between 2021 and 2026.

(Mordor Intelligence, 2020)

The Indian analytics industry is estimated to reach approximately $98 billion by 2025.

(Analytics Insight, 2021)

India's AI and analytics start-ups saw investments of $836.3 Million in 2020.

(Analytics India Industry Study 2021)

Who is this Programme for?

There's a growing demand for skilled data science professionals across industries, management levels and job functions. Joining this programme will be most beneficial for:

- Managers and team leads managing analytics, data science and machine learning projects and teams

- Business and data analysts looking to transition to data science roles or projects

- Early-stage professionals interested in enhancing existing skills in data science and analytics

- Directors, business heads and senior management professionals looking to implement or scale their analytics and data science competency and overall organisational capability

- Consultants who want to develop a strategic mindset that revolves around business analytics and data science for client projects

- Small business owners and entrepreneurs who want to utilise analytics and data science to scale their business

> **Data reveals impact, and with data, you can bring more science to your decisions.**
>
> - Matt Trifiro, CMO, Vapor IO

Programme Highlights

IIM Kozhikode's Advanced Data Science for Managers programme imparts in-depth skills to master data science techniques and machine learning algorithms. Its high-impact learning pedagogy will build your analytical abilities to make real-time, data-driven business decisions. This programme also equips participants with a comprehensive understanding of advanced data science tools so that they can effectively manage and lead high-performing data science and analytics teams.

Develop a data-driven mindset to manage, visualise and analyse data effectively

Hands-on exercises using real-world data sets & R practical sessions

Immersive learning journey with real-world case studies, business decision-related projects & Capstone Project

Taught by eminent faculty & renowned industry experts

Certificate of Completion from IIM Kozhikode, one of India's Leading B-Schools

Earn Lifelong Executive Alumni Status & networking opportunities

Programme Director

Prof. Sreejesh S, PhD

Programme Director & Assistant Professor,
Marketing Management

Prof. Sreejesh's primary research interests include marketing analytics, brand management, services marketing, and online marketing & advertising. His publications have appeared in Journal of Brand Management, Industrial Marketing Management, European Journal of Marketing, Computers in Human Behaviour, Journal of Travel and Tourism Marketing, International Journal of Contemporary Hospitality Management, Internet Research, Journal of Product and Brand Management, Journal of Service Theory and Practice, International Journal of Bank Marketing, etc. He serves on the editorial board of International Journal of Consumer Studies. He has also authored books of international repute with Pearson India and Springer International. Prof. Sreejesh S is currently working as an Assistant Professor of Marketing Management at IIM Kozhikode.

Programme Directors' Message

The Advanced Data Science for Managers programme will equip professionals to have practical and interlocking competencies that maximise the best use of data and interpret the insights generated from the data, which will drive them to have better business decisions in their day-to-day business scenario. Moreover, the machine learning focus of the programme using powerful data analytics platforms will develop industry-ready professionals with in-depth expertise in extracting meaningful insights from the complex data.

Note:
- Programme Directors might change due to unavoidable circumstances, and revised details will be
  provided closer to programme start date.
- Industry Expert sessions could be scheduled on a different time zone, depending on speaker availability.

Programme Faculty

Prof. Satish Krishnan

*Associate Professor Chair,
Information Systems*

Prof Satish holds a PhD in Information Systems and an M. Comp. in Computer Science from the National University of Singapore (NUS), Singapore with a six-month research internship at the Indian Institute of Science (IISc), Bangalore, as part of the Graduate Research Internship Program (GRIP). He holds a B. Tech in Information Technology from Anna University, Chennai. His research interests include adoption and diffusion of virtual social networks and the dark side of technology in areas such as cyberbullying, cyberloafing, and technostress. He has been awarded Outstanding Associate Editor, "Governance, Strategy, and Value of IS" track, International Conference on Information Systems (ICIS), Munich, Germany, 2019, the British Academy/Leverhulme Small Research Grant 2019 Award among others.

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Programme Modules

MODULE 1: INTRODUCTION TO DATA SCIENCE

- Data Science - Scope, and Relevance
- Data Science: Capabilities and Challenges

MODULE 2: UNDERSTANDING THE PYTHON ENVIRONMENT

- Introduction to Python and data types
- Operations, functions, execution, and data processing
- Modules, packages, exceptions, and working with files

MODULE 3: UNDERSTANDING THE R ENVIRONMENT

- Introduction R - packages, data frames, data types, and functions.
- Importing, Loading, & Storing data and Writing output from analysis
- Data aggregation & Data Handeling, and Applications of dplyr package

MODULE 4: INTRODUCTORY STATISTICS & HYPOTHESIS TESTING

- Statistical inference, hypothesis testing, one-sample and paired sample t-test
- Test of proportions, two-sample t-test for difference in means.
- Chi-square test for goodness of fit of multinomial data, ANOVA

MODULE 5: FEATURE, TARGET ENGINEERING & PRE-PROCESSING

- Data cleaning and Data transformation
- Outliers, Binning and data balancing techniques.

MODULE 6: EXPLORATORY DATA ANALYSIS AND VISUALISATION

- Using EDA to generate useful insights, uncover anomalous fields & Application of PCA
- Data visualisation and execution of various types of plots

MODULE 7: MACHINE LEARNING (ML): SUPERVISED LEARNING ALGORITHMS

- Bivariate and multiple regressions, dummy variable regression, and regularized regressions (RIDGE & LASSO regressions)
- Supervised vs. unsupervised learning, and understanding/evaluating the model
- Logistic regression: Bivariate and multinomial logistic regression
- KNN algorithm for classification and prediction
- Naïve Bayes Algorithm
- Support vector machines
- Decision trees, and Random Forest
- Bagging and gradient boosting

MODULE 8: MACHINE LEARNING (ML): UNSUPERVISED LEARNING ALGORITHMS

- Clustering
- Affinity analysis and market basket analysis
- Principal component analysis (PCA)

MODULE 9: DEEP LEARNING ALGORITHM

- Deep learning, and artificial neural networks (ANN)

MODULE 10: DIGITAL MEDIA ANALYTICS

- Web Performance Analytics, and Google analytics
- Optimal publisher strategy and complete copy improvement analysis in online platforms
- Allocating resources between offline and online media
- Introduction to social media analytics
- Social network analysis (SNA) and generating social network metrics
- Advanced SNA concepts using NodeXL and Gephi
- Introduction to text analysis using WordArt, LIWC, and Weka
- Deriving informative insights by combining social network and text analyses

Holistic Curriculum

This comprehensive programme curriculum is integrated with a judicious blend of immersive learning tools such as live online lectures, hands-on exercises using data, real-world case studies, business decision-related projects as well as a final capstone project to reinforce an advanced understanding of data science in decision-making. Taught by renowned IIM Kozhikode faculty and Industry Experts, this engaging learning experience will empower participants to implement data-driven analytics for making insightful and impactful business decisions in their organisations.

Note: Modules/ topics are indicative only, and the suggested time and sequence may be dropped/ modified/adapted to fit the total programme hours.

Capstone Project

With the capstone project, participants will gain hands-on learning experience in conducting data analysis scientifically, and make insightful and powerful connections between quantitative data analysis and real-world business challenges. This project will provide participants with an opportunity to integrate their theoretical and practical understanding of data science and explore ways to apply their learnings in a real-world competitive business scenario.

Tools

Note:
- R will be the primary tool for Data Science
- Tableau will be the primary tool for Data Visualisation

Real-world Case Studies

- **Package Pricing at Mission Hospital** by Sriram TK, Shailaja Grover, Satyabala Hariharan, Dinesh Kumar Unnikrishnan

  The case is ideal for teaching multiple regression model building and model validation through several statistical tests. The case helps the instructor to demonstrate use of R-square (coefficient of determination), hypothesis testing, model validation, variable significance, variance inflation factor, and step-wise regression.

- **Predicting Customer Churn at QWE Inc.** by Anton Ovchinnikov

  This field-based case is an efficient vehicle for exposing students to predictive analytics as applied to discrete events with logistic regression. The VP of customer services for a successful start-up wants to proactively identify customers most likely to cancel services or "churn." He assigns the task to one of his associates and provides him with data on customer behavior and his intuition about what drives churn. The associate must generate a list of the customers most likely to churn and the top three reasons for that likelihood. Although the name of the company and individuals are disguised, the data are real and adjusted by an unspecified constant so that all relationships are preserved.

- **Preferred Networks: A Deep Learning Startup Powers the Internet of Things** by Pavel Kireyev, Theodoros Theos Evgeniou, Nancy J. Brandwein

  Preferred Networks, Inc. (PFN), a start-up specialized in deep learning technologies, a branch of artificial intelligence (AI) research, differentiated itself early on by aligning with Japan's manufacturing might and bringing deep learning to the Internet of things (IoT). The case follows the start-up as it evolves into a highly valued company with over 200 employees and global partners across various industries.

- **Predicting Earnings Manipulation by Indian Firms Using Machine Learning Algorithms** by Dinesh Kumar Unnikrishnan, Tousif Ahmed Inayath Syed, Suresh Ganeshan

  The case may be used in Business Analytics, Machine learning and Fraud Analytics courses of MBA or Executive MBA programs to teach fraud/earnings manipulations prediction. The learning objectives are as follows.

  1. Learn how predictive analytics techniques such as logistics regression can be used to predict earnings manipulations by firms.

  2. Understand machine learning algorithms such as Bagging and Boosting and how it can improve the modelling accuracy.

Note:
- The programme curriculum includes more such case studies for integrated learning.
- Listed above are a few indicative case studies and the programme will include additional case studies specially curated by the faculty.

Learning Outcomes

Joining this live online programme will enable participants to gain proficiency in data science and business analytics to manage the most challenging business situations with data-driven insights and analysis.

Gain an understanding of data analysis and structures, and the relationship between data sets

Learn to use analytical tools such as R and Python

Explore text mining analysis and techniques to understand the influence of social media

Learn to use descriptive, predictive, and prescriptive analytics to make real-time, data-driven decisions
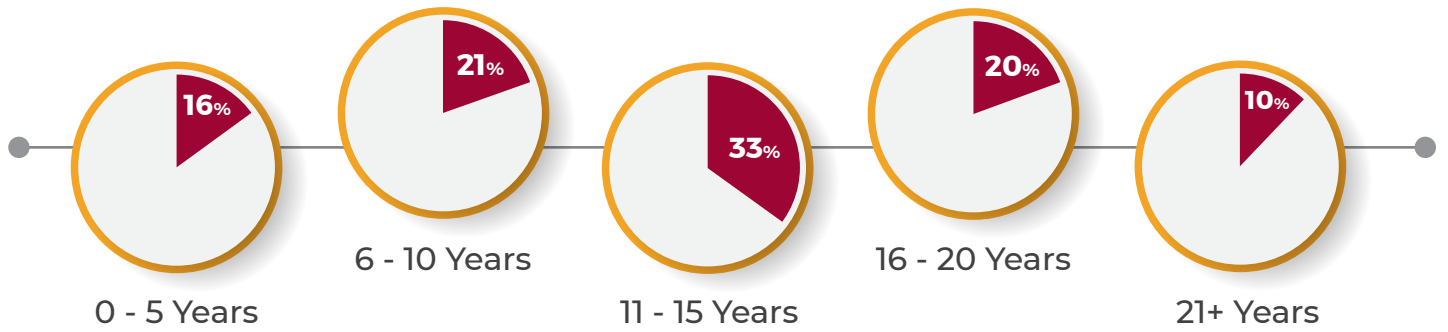
Gain the skills and knowledge required to manage data science and analytics teams or projects at your organisation
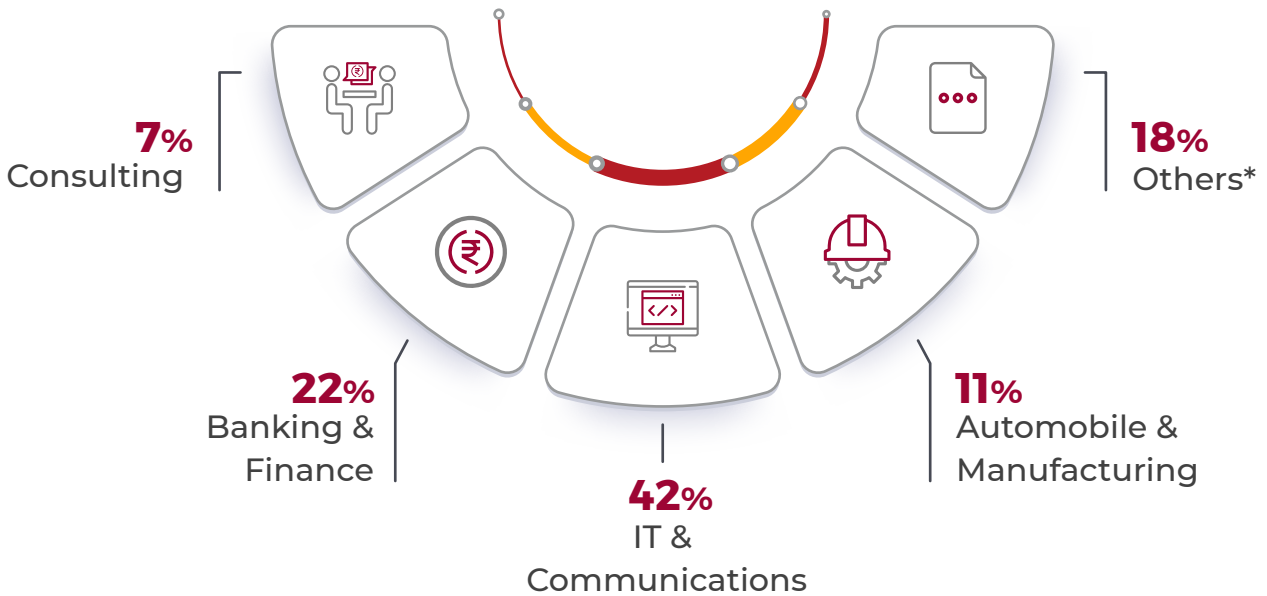
Gain an understanding of the tools and techniques used in Data Science and ML for business applications
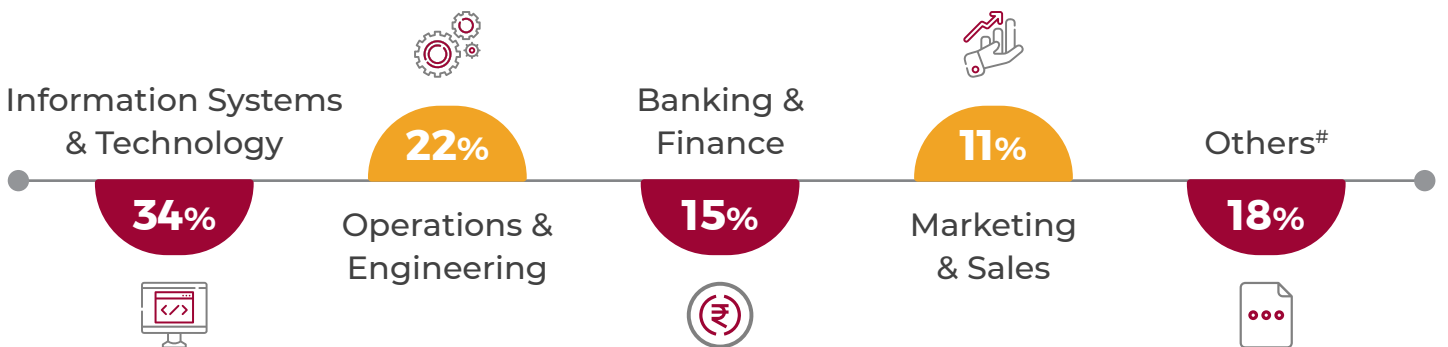
Past Participant Profiles

Work Experience

16% — 0 - 5 Years

21% — 6 - 10 Years

33% — 11 - 15 Years

20% — 16 - 20 Years

10% — 21+ Years

Industry

7% Consulting

22% Banking & Finance

42% IT & Communications

11% Automobile & Manufacturing

18% Others*

Others include Communications, Healthcare, Marketing & Sales etc.

Functions

Information Systems & Technology — **34%**

22% Operations & Engineering

Banking & Finance — **15%**

11% Marketing & Sales

Others# — **18%**

#Others include Consulting, Management, Teaching R&D etc.

Certificate

Participants who successfully complete all evaluation components with minimum pass marks and meet the requisite 75% minimum attendance criteria will be awarded a Certificate of Completion from IIM Kozhikode. Participants who are unable to clear the evaluation criteria but have the requisite attendance will be awarded a Participation Certificate.

Note: All certificate images are for illustrative purpose only and may be subject to change at the discretion of IIM Kozhikode.

Eligibility

Graduates (10+2+3) or Diploma Holders (only 10+2+3) from a recognised university in any discipline with a minimum of 1 year of work experience (after graduation) as on June 30, 2022.

Evaluation

There will be periodic   the programme at regular intervals. These may be in the form of a quiz, assignment, project, case studies or other objective/ subjective assessments. A minimum of 75% attendance is a prerequisite for the successful completion of this programme. The participants will have to secure the minimum pass marks in the respective evaluation components.

IIM Kozhikode Executive Alumni Status

On successful completion of the programme, participants will be eligible for the prestigious IIM Kozhikode Executive Alumni Status. These participants will subsequently receive the alumni registration details from IIM Kozhikode.

Note: The Executive Alumni benefits are subject to the discretion of IIM Kozhikode.

Programme Details

Programme Fee   INR 1,85,000 + GST

Academic Orientation   July 10, 2022

Instalment Schedule

Particulars	Remarks	Amount
Booking Amount	Within 7 days post selection	INR 19,000 + GST
Instalment I	Jul 04, 2022	INR 37,000 + GST
Instalment II	Oct 05, 2022	INR 74,000 + GST
Instalment III	Jan 05, 2023	INR 37,000 + GST
Instalment IV	Apr 05, 2023	INR 18,000 + GST

Round-wise Application Dates

Particulars	Application Fee	Dates
Round 1	INR 1,500 + GST	May 02, 2022
Round 2	INR 2,000 + GST	May 30, 2022

Programme Schedule

Live Online Sessions
3 Hours/ week
Sunday, 9:00 AM to 12:00 PM

Attendance
Minimum 75%

Note
Admissions are on a first-come, first-serve basis. There might not be subsequent rounds if seats are filled in the initial rounds.

Programme Application Link
Click here to apply to the programme.

Finance options available. **Click here** to learn more.

For more information, please email at **iimk.execed@emeritus.org**

Note: The actual programme schedule will be announced closer to the programme start.

Application Requirements

Applying to the programme? We suggest you keep the following 3 documents ready.

1. Your Photo ID Proof:

- You can submit a scanned copy of **ANY ONE** of: Aadhaar Card, e-Aadhaar, PAN Card or the first two pages of your Passport. In case you submit an e-Aadhaar card, please rename the file to its password so we can open the file.

2. Your Graduation/Degree:

- You can submit a scanned copy of **ANY ONE** of: Degree certificate, provisional Degree certificate, marks transcript or score transcript.

3. Your Work Experience Certificate:

- You can submit scanned copy(ies) of document(s) which demonstrate that you have the minimum work experience required by the programme.
- You can confirm the minimum work experience requirement of a programme under the heading **'Eligibility'** in the brochure or the programme website
- Examples of documents you can submit are joining letter, relieving letter, Bonafide work experience letter from your HR, salary slips etc.
    - These documents must be issued by your company.
    - Please ensure that the document(s) you submit contain a **date of joining** and a **date of leaving** or a **statement** about the **number of years** you have worked at the company.

System Requirements

This programme includes live online classes. To attend a live online class you will need to have a PC/Laptop/Mac with

- Speakers and microphone: built-in or a USB plug-in or wireless Bluetooth

- Webcam: built-in or USB plug-in

- Processor: with Dual Core 2Ghz or higher (i3/i5/i7 or AMD equivalent)

- RAM: 4 GB or higher

- OS: Either MacOS 10.7 or higher OR Windows 8 or higher

- An internet connection: Minimum bandwidth of 3.0 Mbps (up/down)

- Browser: IE 11+, Edge 12+, Firefox 27+, Chrome 30+

- Zoom software client installed on your PC/Laptop/Mac

We use the Zoom software application to conduct live online classes. Zoom works on a variety of PCs/ Laptops/Mac systems and also on phones and tablets.

You can join your live online class from a phone or tablet if it supports the Zoom client.

We recommend that you attend classes from a PC/Laptop/Mac.

About IIM Kozhikode

With its roots dating back to 1997, the Indian Institute of Management Kozhikode (IIMK), started with a batch size of 42 students but has grown tremendously over the years to a current batch strength of 485 students, making it the fastest-growing management school in the country. IIM Kozhikode has achieved its own unique identity, a mix of two cultures, academic and business and is fast emerging as an internationally reckoned fully-integrated management institute of higher learning. One of the most picturesque campuses in the country, the world-class infrastructure includes air conditioned class rooms, guest facilitation zones and wifi connectivity which enables every IIM Kozhikode resident to be exposed to a wholesome experience. Managed by dedicated personnel, it is one of the most efficient institutions in the country. IIM Kozhikode pioneered the Interactive Learning (IL) programme for working executives in India. This programme started with 300 class contact hours in 2001-02, the two-year-long Executive Management Education Programme is today the most rigorous programme in the country having around 738 class contact hours.

Every year IIM Kozhikode offers a rich portfolio of Management Development Programmes crafted for the agile minds on the lookout for thought-provoking questions and enriching learning experiences. Recently, IIM Kozhikode has launched a one year Post Graduate Programme in Business Leadership (PGP-BL) in the year 2019 and has also launched a two years Post Graduate Program in Liberal Studies & Management (PGP-LSM) as well as the Post Graduate Program in Finance (PGP-Finance). Over the years, there has been a significant increase in the number of training programmes and participants. The speed and momentum of changes in the Indian business environment are unabated, and IIM Kozhikode's endeavour is to adapt to these changes through constant innovation.

About Emeritus

IIM Kozhikode is collaborating with online education provider Emeritus to offer a portfolio of high-impact online programmes. Working with Emeritus gives IIM Kozhikode the advantage of broadening its access beyond their on-campus offerings in a collaborative and engaging format that stays true to the quality of IIM Kozhikode. Emeritus' approach to learning is built on a cohort-based design to maximise peer-to-peer sharing and includes video lectures with world-class faculty and hands-on project-based learning. More than 250,000 students from over 160 countries have benefitted professionally from Emeritus' courses.

Apply for the programme here

APPLY NOW

For registration and any other information please get in touch with at
iimk.execed@emeritus.org

📞 **WhatsApp an advisor on +91 7208889990***

Note: This number does not accept any calls. Please message your queries.

In collaboration with

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