Professional Certificate Programme in

Data Science for Business Decisions

IIM KOZHIKODE

3rd Rank

NIRF India Rankings, (Management) 2024

4th in India

70th in Global, Financial Times Open Enrolment Rankings 2024

16+ in Asia

151+ in Global, QS World University Rankings 2024

FROM THE DIRECTOR'S DESK

PROF. DEBASHIS CHATTERJEE

In response to the rising demand for professionals skilled in data science and translating it into valuable business insights within today's data-driven world, the Indian Institute of Management Kozhikode has meticulously crafted the Professional Certificate Programme in Data Science for Business Decisions. IIM Kozhikode programmes designed by world-class faculty with their cutting-edge thought leadership and industry-leading insights empower participants to manage and lead complex business challenges with confidence and data-driven, informed decision-making ability. Our growing global footprints acknowledged and accredited by leading institutions of the world are a testimony to the growth we have achieved in our nearly 28-year journey of academic excellence.

At this juncture, it is also pertinent to share that both the future and past are integral to the path taken by an institution on this journey of excellence. Having a wide, far-seeing vision is not an indulgence but an activity that is necessary to give meaning to our present, and to give this institution a sense of purpose, direction and imagination. That is why we have chosen to think in terms of what IIM Kozhikode will be able to contribute to India and the world some three decades from now with 'Vision 2047: Globalizing Indian Thought'. The Institute has set for itself a pre-eminent role with the above motto. The sheer scale, scope and potential impact that India will have on 21st-century business makes us believe that this is a legitimate aspiration.

Attain the ideal synergy of big data analytics and data science proficiencies through the pursuit of the Professional Certificate Programme in Data Science for Business Decisions by IIM Kozhikode.

Debashis Chatterjee

Director, IIM Kozhikode

Synergizing Big Data Analytics and Data Science Through Critical Lens

97.2% of organizations are investing in big data and AI.

*TechJury

95% of businesses cite the need to manage unstructured data as a problem for their business.

*Forbes

By 2026 20% of top data science teams will have rebranded as Cognitive Science or Science consultancies, increasing diversity in staff skills by 800%.
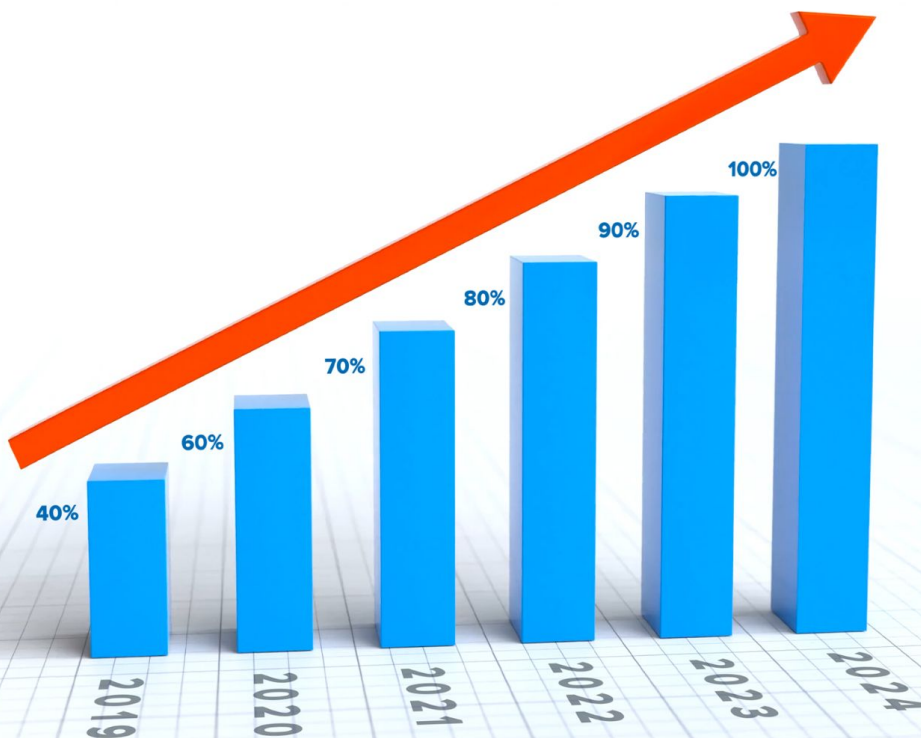
*Gartner

Projected Salary Growth: Data & Analytics Professionals by Roles

Median Salary of Data & Analytics professionals by roles

IIM RESEARCH

	Overall	0-3 years	3-6 years	6-10 years	10-12 years	12+ years
MIS Specialist	12.4	7.6	6.3	9.5	13.8	22.1
Data Engineer	13.8	4.8	7.9	13.8	17.7	24.8
Data Analyst	14.9	5.1	9.2	13.7	19.0	27.5
Computer vision	16.6	4.7	7.2	11.1	25.1	34.7
Statistician	16.8	4.5	8.2	15.7	22.5	33.1
Deep Learning	17.2	8.4	9.9	15.2	20.9	31.7
AI Engineer	19.9	5.8	12.4	19.2	25.1	37.0
Big Data Analyst	21.3	6.8	11.4	25.7	24.4	34.5
Data Scientist	24.0	6.7	11.1	24.4	28.1	49.7
NLP	28.4	7.1	18.1	31.6	43.4	41.8
Data Architect	28.5	6.0	10.3	37.0	42.0	47.0

Median salary in INR lakhs per annum

40% 2019
60% 2020
70% 2021
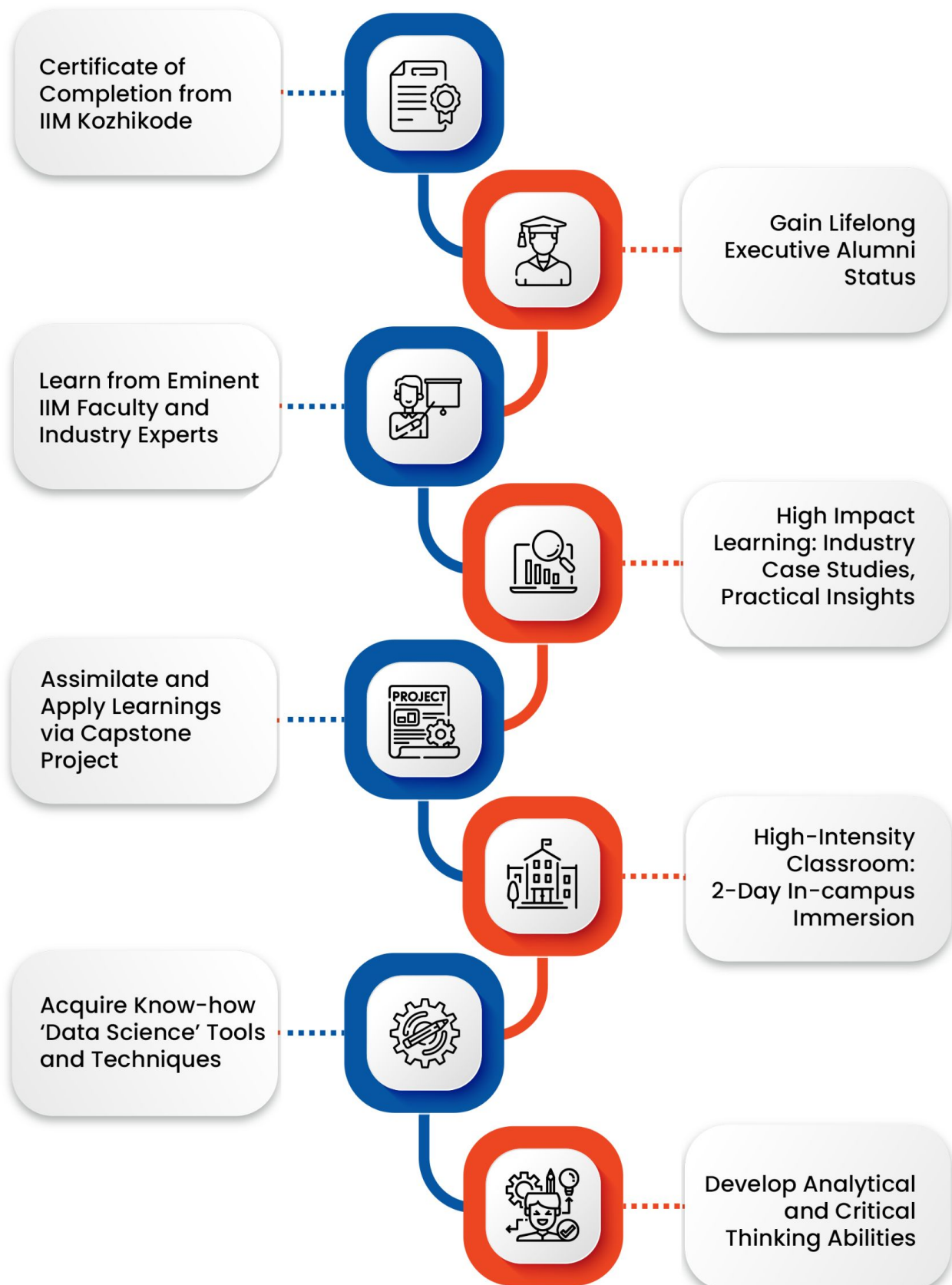80% 2022
90% 2023
100% 2024

PROGRAMME OVERVIEW

The field of data science has experienced remarkable growth, with a staggering 650% increase since 2012, and it is projected to reach $230.80 billion by 2026 as per a recent report. This expansion has created abundant career opportunities and a rising demand for skilled professionals. Organizations worldwide are recognizing the potential of data in transforming their operations and staying competitive. Data-driven decision-making has become indispensable for companies striving for growth. Data science involves analyzing structured and unstructured data using statistics, algorithms, and technology. It combines data management and analytics to enhance business performance. Professionals in this field employ various tools and techniques to identify patterns, predict key performance measures, and shape business strategies.

The IIM Kozhikode Professional Certificate Programme in Data Science for Business Decisions equips participants with a comprehensive understanding of data science's role in driving business success, focusing on practical applications across diverse domains rather than solely on programming skills. This strategically designed programme provides in-depth knowledge and essential skill sets to the participants using the interactive curriculum, case-based teaching methods, and real applications across different business domains. The programme offers a deep dive into the concept of supervised and unsupervised learning techniques, an understanding of social media analytics and big data technologies among others using different software tools and programming environments. It emphasizes gaining a holistic understanding of data science and its applications in business and management rather than on the programming/coding aspects.

PROGRAMME HIGHLIGHTS

Certificate of Completion from IIM Kozhikode

Gain Lifelong Executive Alumni Status

Learn from Eminent IIM Faculty and Industry Experts

High Impact Learning: Industry Case Studies, Practical Insights

Assimilate and Apply Learnings via Capstone Project

High-Intensity Classroom: 2-Day In-campus Immersion

Acquire Know-how 'Data Science' Tools and Techniques

Develop Analytical and Critical Thinking Abilities

LEARNING OUTCOMES

- Holistic understanding of Data Science – why, when and how to use it in a business context

- Developing problem-solving and critical thinking abilities through the lens of Data Science

- Translating business problems into data-driven problems

- Understanding the importance of data and its management

- Selecting appropriate data science tools and techniques for a variety of business problems

- Interpreting the results from a managerial perspective and communicating to the stakeholders

PEDAGOGY

Interactive Lectures	Case Discussion	General Discussion
Experience Sharing	Group Assignments	Group Projects

Tools and Technologies Covered

hadoop | python™ | HIVE | R

APACHE HBASE | tableau | cassandra | APACHE Spark™

WHO SHOULD ATTEND?

Tech professionals at all levels looking to upskill in Data Science or transition to a Data Science career.

Mid-level managers/Business analysts/Domain specialists managing Data Science projects.

Early managers/team leads with a basic exposure to Data Science looking to transition to a Data Science career.

Senior executives with a wide range of professional backgrounds looking for a holistic understanding of Data Science.

Having familiarity with Mathematics/Statistics/any programming language will be beneficial to the participants. The programme may not suit applicants expecting to learn to code and get hands-on technical learning on any Big Data Technologies.

PROGRAMME CONTENT

MODULE 1: FOUNDATION OF DATA SCIENCE

- **Data Management**

  - Data sources, Database
  - Structured vs Unstructured data
  - Data Extraction/Acquisition, Storing, Integration
  - Data Pre-processing
  - Big Data

- **Data Science Tools**

  - R, Python
  - Tableau

- **Descriptive Analytics, Data Visualization and Story Telling**

  - Exploratory Data Analysis (Summary Measures, Visualizations, Probability and Distribution)
  - Confirmatory Data Analysis (Statistical Inference)
  - Unsupervised Learning Technique (Clustering and Dimension Reduction)

MODULE 2: PREDICTIVE ANALYTICS: STATISTICAL LEARNING AND MACHINE LEARNING

- **Regression and Classification (Statistical Learning)**

- **ML Techniques: CART, Ensemble Techniques (Bagging, Boosting, Random Forest), SVM**

- **Time Series Forecasting Techniques**

MODULE 3: PRESCRIPTIVE ANALYTICS AND DEEP LEARNING

- Optimization Technique

- Artificial Neural Network (ANN)

- RNN, CNN

MODULE 4: TEXT ANALYTICS AND NATURAL LANGUAGE PROCESSING

- Web Scraping

- Text Mining

- NLP Tools and Techniques (Gephi, NodeXL)

MODULE 5: BIG DATA ANALYTICS

- Information Value Chain and Big Data Characteristics

- Data Supply Chain: Data Architecture Approaches Under Traditional and Big Data Landscape

- Data Monetization, Big Data Business Value Discovery, Big Data Economy and Business Value

- Big Data Applications (Industry, X Industry)

- Big Data Tools – Hadoop, Apache Spark, HBase, Cassandra, MapReduce, Hive

PROGRAMME CONTENT

MODULE 6: DATA SCIENCE APPLICATION IN BUSINESS MANAGEMENT

- Marketing and Retail Analytics (Customer Lifetime Value, Market Basket Analysis, Customer Attrition)

- Financial Analytics (Fraud Analytics, Portfolio Management) Operations and Supply Chain Analytics (Demand Forecasting, Network Optimization)

- HR Analytics (Employee Churn)

- Healthcare Analytics

- Analytics in Government

Note:
- The above list is indicative and is subject to change at IIM Kozhikode's discretion.
- The content provided in each module provides a brief summary. The detailed course handout will be provided upon request.

PROGRAMME DETAILS

Duration	• 12 Months

Mode	• Direct-to-Device (D2D)

Campus Immersion	• One Visit for 2 days

Eligibility	• For Indian Participants - Graduates (10+2+3) or Diploma Holders (only 10+2+3) from a recognized university (UGC/AICTE/DEC/ AIU/State Government/ recognized international universities) in any discipline. • Minimum of 3 years of work experience (after graduation) as on the program date i.e. technical orientation date. • Selections will be based on candidates' profiling.

Programme Schedule	• Saturday, 6:00 pm to 9:00 pm

Assessment and Evaluation	• The evaluation methodology is at the discretion of the faculty. The methodology includes online quizzes, case analysis, class contribution, assignments, and any other component as decided by the faculty. 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 evaluation components specified by the faculty. • Participants who complete the same and satisfy the requisite attendance criteria will be awarded a 'Certificate of Completion'. • Participants who are unable to clear the evaluation criteria but have the requisite attendance will be awarded a 'Participation Certificate'. • The programme may require participants to work on individual/group assignments and/or projects. The main objective of such assignments/projects will be to help the participants apply their conceptual learning from the programme to actual organizational decision scenarios.

Application Closure Date	30th November 2024
Commencement Date	14th December 2024

PROGRAMME FEE DETAILS

Application Fee	INR 2000/- + GST

Total Programme Fee (Exclusive of Application Fee)	INR 2,00,000/- + GST

Instalment I	Instalment II	Instalment I
INR 80,000/- + GST	INR 60,000/- + GST	INR 60,000/- + GST
3 days from release of offer letter	15th March 2024	15th June 2025

Easy EMI Options Available

CERTIFICATE

Indian Institute of Management Kozhikode

भारतीय प्रबंध संस्थान कोषिक्कोड
Indian Institute of Management Kozhikode

eMDP
Professional Certificate Programme

This is to certify that
Name

participated and successfully completed the programme
Data Science for Business Decisions
(DD-MM_YY - DD-MM-YY)

Programme Facilitators   Chairperson - MDP   Director

▶ Participants who successfully meet the evaluation criteria and satisfy the requisite attendance criteria will be awarded a **'Certification of Completion'.**

▶ Participants who are unable to clear the evaluation criteria but have requisite attendance will be awarded a **'Participation Certificate'.**
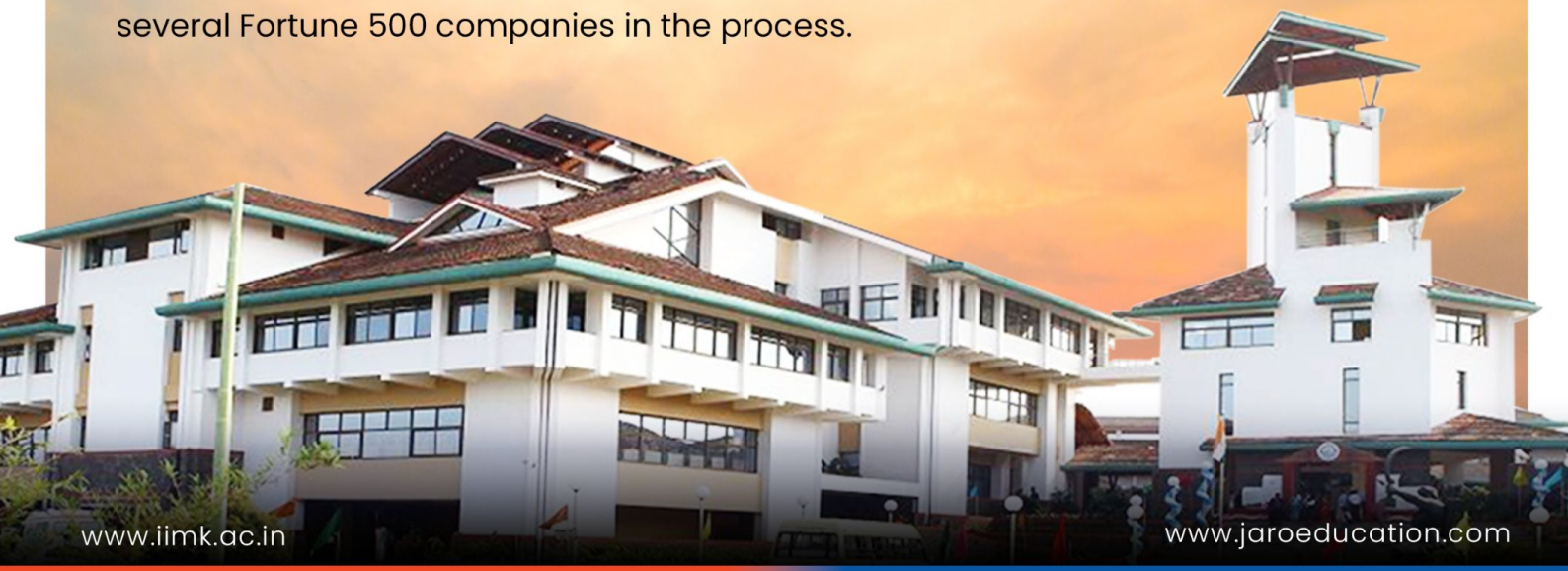
ABOUT IIM KOZHIKODE

Started in 1997 with its Post Graduate Programme (PGP), the Indian Institute of Management Kozhikode (IIMK) is on a high growth trajectory today, offering a wide range of academic programmes in the field of management education. These include: Fellow Programme in Management, Executive PG Programmes, Management Development Programmes and Faculty Development Programs. IIMK set up a Satellite campus at Infopark, Kochi, in 2013 dedicated to Executive Education. IIMK also has the unique distinction of launching a PhD (Practice Track) programme for working professionals besides bringing in new dynamic programmes such as the one-year Post Graduate Programme in Business Leadership (2019), MBA in Finance and MBA in Liberal Studies & Management (2020). The institute is also home to IIMK LIVE (Laboratory for Innovation, Venturing, and Entrepreneurship), a first-of-its-kind startup incubation programme and the Indian Business Museum.

IIMK is ranked 3rd as per NIRF India Rankings 2024: Management. The institute also features regularly among top global institutes for its flagship Master of Business Administration (PGP) and Executive Master of Business Administration Programme (EPGP) in the QS World University Rankings. The institute has leapfrogged 100 spots to be placed in the Top 151-200 Institutes in Business & Management Studies globally, and 16+ Asia-Pacific region in the QS World University Rankings 2024. IIM Kozhikode is globally accredited by EQUIS (EFMD) and AMBA (UK).

IIM Kozhikode also made its debut in the prestigious Financial Times Rankings in 2023 and was recently ranked #70 among the top-80 open-enrolment executive program providers globally for the year 2024. The feat has further consolidated the 28-year IIM's footing in an exclusive list of the foremost providers of executive education in the world. The institute had also entered in global top-100 at Rank #77 for FT Masters in Management (MIM) 2023 Rankings, for its full-time MBA programme. IIM Kozhikode has successfully delivered close to 1300 MDP programmes over the past two decades, training more than 41,000 participants from 150+ organizations, which also includes several Fortune 500 companies in the process.

PROGRAMME DIRECTOR

SHOVAN CHOWDHURY
Professor, Quantitative Methods and Operations Management Area, IIM Kozhikode

Professor Shovan Chowdhury has over twenty years of experience in teaching, research, training and consulting in the areas of Applied Statistics and Data Analytics. He received his PhD in Statistics from the University of Calcutta. Prof. Chowdhury, recipient of the Emerald Literati Awards 2019 and trained at Harvard Business School has published several research articles in leading international peer-reviewed journals. He is the co-author of the books titled 'Applied Statistics in Business and Economics' and 'Forecasting and Predictive Analytics' by a leading international publisher. He has conducted executive education and management development programs in business analytics, marketing analytics and healthcare analytics for more than 5000 management executives at different levels.

KNOW THE FACILITATORS

Prof. Ram Kumar P.N.
Professor,
Quantitative Methods and Operations Management Area, IIM Kozhikode

Prof. Satish Krishnan
Professor,
Information Systems,
IIM Kozhikode

Prof. Vidushi Pandey
Assistant Professor
(Grade I), Information Systems, IIM Kozhikode

CAREER ASSISTANCE BY JARO EDUCATION

Resume Building

Our service comprises the meticulous creation and refinement of resumes, aligning them with corporate standards to ensure they reflect your skills and achievements. Through expert resume optimization, we enhance your professional narrative and craft an ATS-friendly resume to stand out in a competitive landscape.

LinkedIn Profile Optimization

We offer tailored suggestions for elevating your LinkedIn profile, strategically designed to maximize visibility and foster meaningful connections with industry leaders. Our approach ensures that your online presence resonates with the professionalism and expertise that defines your career trajectory.
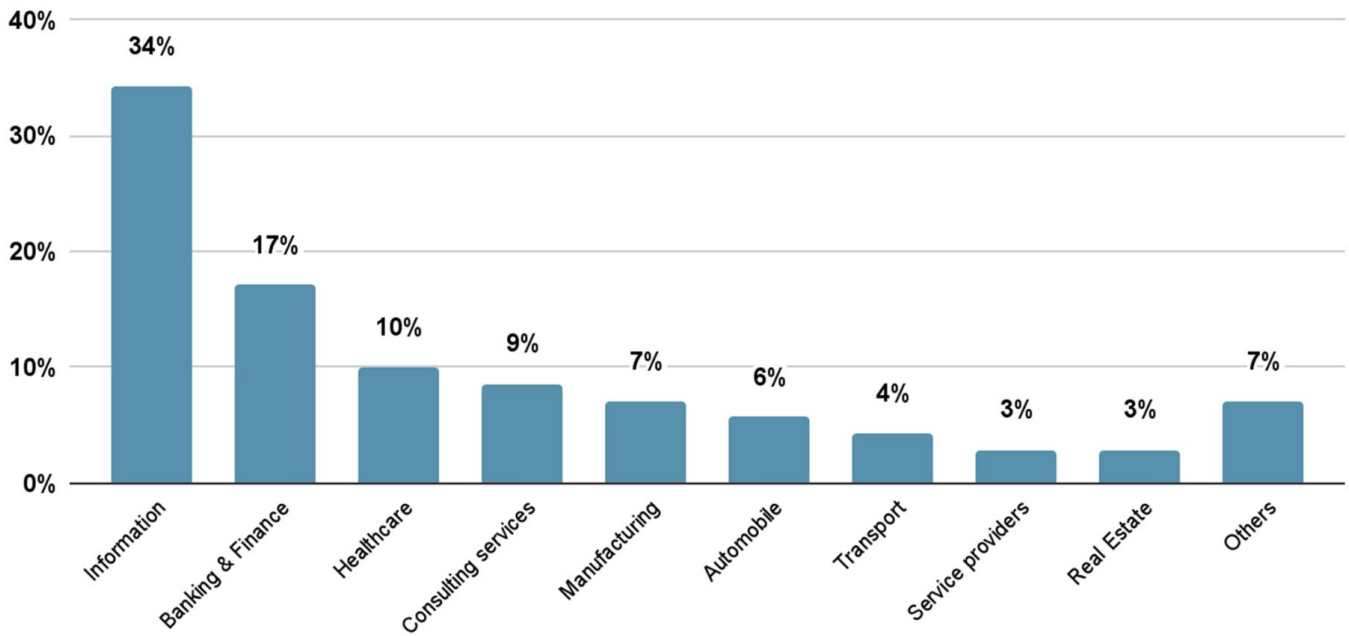
Career Enhancement Sessions

Our exclusive Jaro Connect platform provides corporate engagements with access to immersive bootcamps and masterclasses on the latest industry trends, led by esteemed experts. This empowers the participants to stay abreast of evolving market dynamics while honing their professional competencies, ensuring they thrive in today's fast-paced business environment.

Note:- IIM Kozhikode or Jaro Education do not guarantee or promise you a job or advancement in your existing position. Career services is simply provided as a service to help you manage your career in a proactive manner. Jaro Education provides the career services described here. IIM Kozhikode is not involved in any way with the career services described above and offer no commitments.
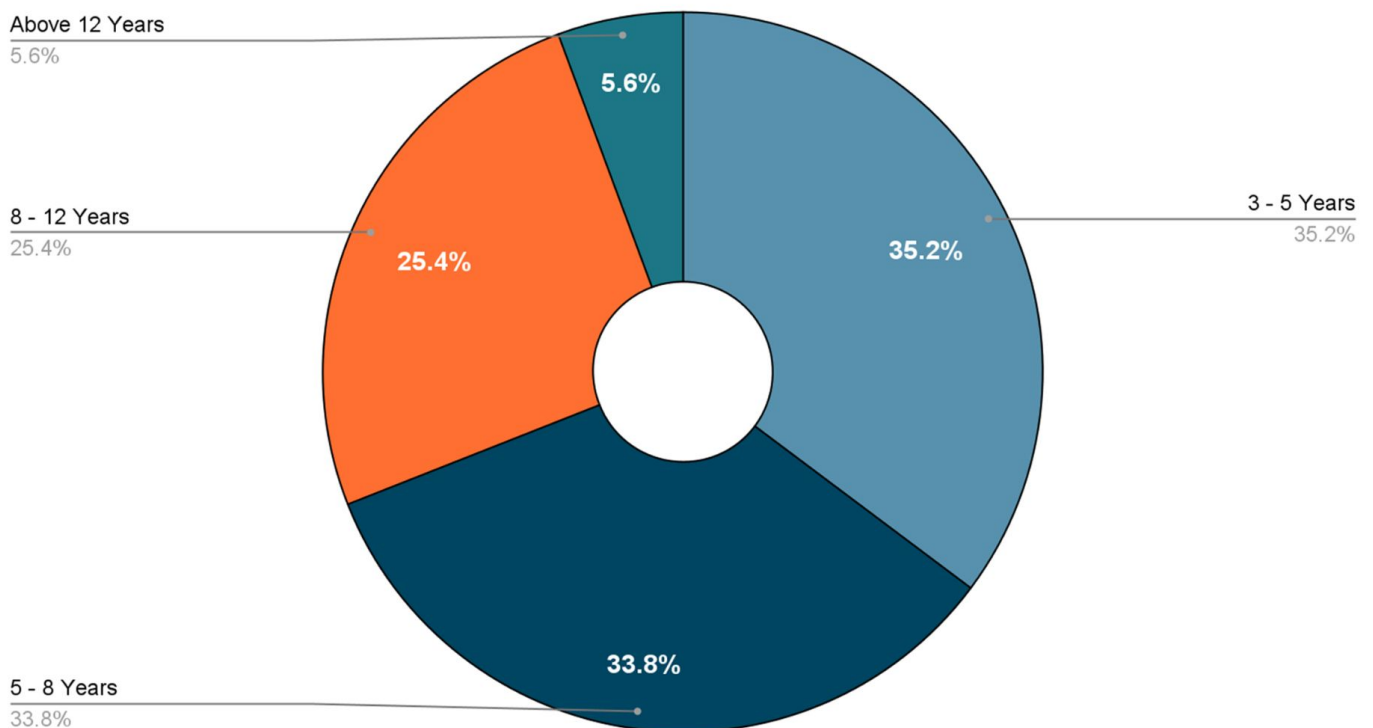
RECENT BATCH ANALYSIS

Industry Profile of Professionals

Industry	Percentage
Information	34%
Banking & Finance	17%
Healthcare	10%
Consulting services	9%
Manufacturing	7%
Automobile	6%
Transport	4%
Service providers	3%
Real Estate	3%
Others	7%

Past Experienece of Professionals

Experience	Percentage
3 - 5 Years	35.2%
5 - 8 Years	33.8%
8 - 12 Years	25.4%
Above 12 Years	5.6%

RECENT BATCH ANALYSIS

Top Companies Our Alumni Work at:

EY	PayPal	Google
LARSEN & TOUBRO	accenture	CITICORP
BANK OF AMERICA	tcs TATA CONSULTANCY SERVICES	Infosys
HSBC	Capgemini	TVS

Top Designations

Deputy General Manager

Branch Head

Sr. Product Manager

Lead Consultant

Sr. Software Engineer

Business Analyst

Note:

- The above list is partial.

- Highlighted above are the previous batch demographics.

- All company names are trademarks or registered trademarks of their respective holders. Use of them does not imply any affiliation with or endorsement by them.

About Jaro Education
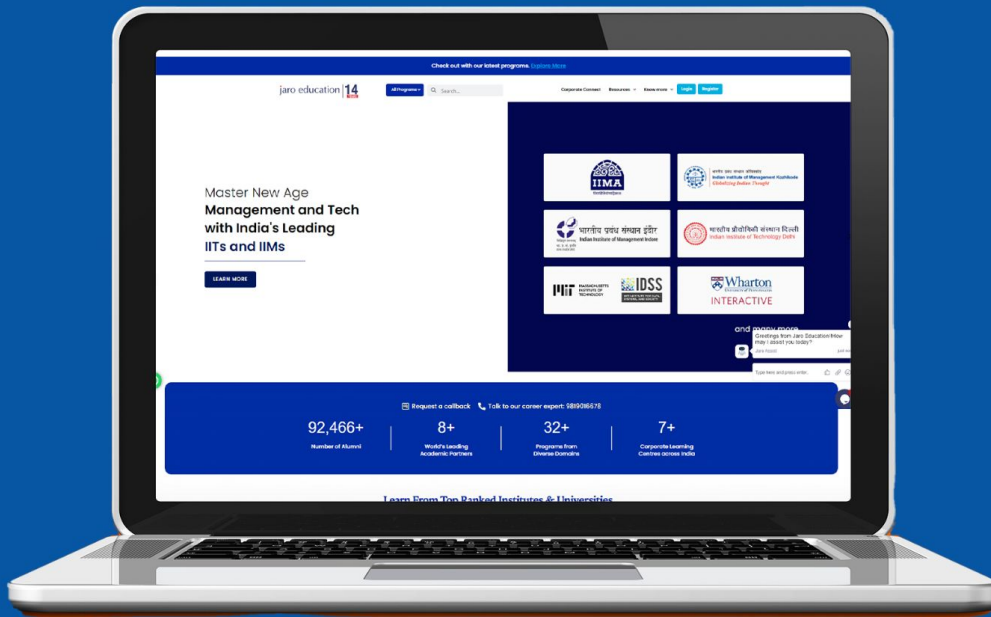
3,50,000+
Career Transformed

150+
Programs from Diverse Domains

30+
World's Leading Academic Partners

23+
Learning Centres across India, USA & Singapore

20+
Top NIRF Ranked Indian Institutes & Universities

10+
Top QS Ranked Global Institutes & Universities

e-India Awards	Educational Excellence Awards	MODI Awards	ABP Education Awards	World HRD Congress	World HRD Congress	Outlook Business Icon Awards 2023	The Business Awards 2024
The Best ICT Enabled Higher Education Institute Award	Most Innovation & Successful online MBA Program in India	Outstanding Contribution in Online Education	Best Digital Learning Innovation Award	National Best Employer Accolade	Edtech Leadership Awards	India's Most Trusted Online Higher Education Company	Leading Edtech Company of the Year

Jaro Education is an online higher education company that specialises in executive education, serving as a liaison between the world's leading universities and institutes to create online and technology-driven programmes. The company provides a quality bucket of online executive education programmes catering to domains such as Doctorate & PhD, Analytics & Data Science, Management, Finance, etc., from renowned national and international institutions to meet the needs of working professionals. Our goal is to foster the growth of entrepreneurs and professionals at all levels, from entry level to C-Suite, through world-class executive education programmes.

JARO EDUCATION'S PRESENCE

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