



Powered By

upGrad

Professional Certificate Programme in

Data Science With Generative AI

Become an AI-augmented data science professional in 24 weeks. Build dashboards leaders use, models that move revenue, and AI workflows that make you 10× faster.



24 Weeks

8–10 hrs/week | Live + Recorded + Workshops | Capstone project

Get Certified by IIIT Bangalore | 10+ Years Legacy Data Science and AI Programs

The AI-Augmented Data Analytics Revolution

Today, every business decision is a data decision. Most teams still struggle to bridge traditional BI with modern AI. This programme closes that gap.



Traditional Analyst

Excel reports
Days to insight
Reactive →



Modern Data Scientist

Dashboards
Days to insight
Reactive →



AI-Augmented Data Scientist

Predictive + GenAI Near
real-time Prescriptive &
explainable →

Your 24-Week Transformation

Weeks 1–8 Foundation

Python, SQL,
Statistics

Weeks 9–16 Application

Dashboards,
Models, ETL

Weeks 17–24 Innovation

GenAI, RAG,
Automation

Who This Programme Is For

- ▶ Early-career professionals moving into data science/analytics
- ▶ Business professionals looking to add technical depth
- ▶ Analysts preparing for the AI shift
- ▶ Graduates building industry-ready portfolios

The convergence of BI and AI is no longer future—it's now.



Programme Structure & Learning Path

Program at a Glance



Learn → Apply → Build → Deploy
The IIITB approach



Duration
24 weeks



Effort
8–10 hrs/week



Format
Live + recorded + labs



Capstone
End-to-end real world project



Masterclass
10+ Live deep dives



Workshops
10+ Hands on workshops

Learning Methodology

10+ Masterclasses

10+ Workshops

30+ Industry cases

Daily support sessions

Peer community

1-to-1 capstone mentorship

Technology Stack

Python | SQL | Power BI/Tableau
scikit-learn | MLflow (basics)
Daily support sessions
OpenAI/Claude | LangChain
Vector DBs
Cloud (AWS/Azure)

Tools may change; equivalents used as needed. Certificate programme, not a degree. Career services are not a placement guarantee.

What You'll Build & Where It Leads

Your 24-Week Portfolio

Technical Assets	Business Outputs
✓ 6 Projects	Executive Deck
✓ 15+ Notebooks	ROI Framework
✓ GitHub Repos	A/B Test Reports
✓ Live Dashboards	Model Cards
✓ Kaggle Kernels	GenAI Blueprint

Industry Applications

BFSI	E-Commerce	Healthcare	Tech
Risk Analytics	Recommenders & Personal	Patient Analytics	Product Analytics



Your 6-Module Journey To Mastery

Module 1 Foundation (Weeks 1–5)

- Python for data
- SQL for analysis
- KPI datasets



Module 2 Statistics (Weeks 6–9)

- A/B tests that drive decisions
- Cohorts & funnels



Module 3 BI & Visual Storytelling (Weeks 6–9)

- Dashboards execs actually use
- Narratives & RLS



Module 4 Machine Learning (Weeks 14–17)

- Models that move metrics
- ROI & monitoring

Module 5 GenAI (Weeks 18–20)

- AI-assisted SQL & analysis
- RAG over knowledge



Module 6 CAPSTONE (Weeks 21–24)

- Your signature project end-to-end
- Repo + dashboards

How You'll Learn — And Get Support

TOUCHPOINTS

- 1-2 in-depth 4-hour Bootcamps Every Month (Apply, Q&A, code-along)
- 120+ hours of live session, 2 hours/week of recorded content
- Projects and Assessments for Practice

DAILY HELP & COMMUNITY

- Discussion forum / chat with <24h weekday response target
- m-AI-Ask AI Chatbot Support

MENTORING & CHECKPOINTS

- Module-end grading and feedback (M1→M5)
- Capstone group mentoring (W21–W24): plan → build → test → defend

LEARNING PLATFORM & TOOLS

- LMS for videos, quizzes, submissions
- GitHub for repos & reviews • BI sandbox (Power BI/Tableau)
- Jupyter/Colab for notebooks • Email/slack alerts for deadlines

PROGRESS & INTERVENTIONS

- Dashboards for grades & attendance
- “Nudge” emails if you fall behind

Detailed Curriculum

Module 1: Foundations of Applied Data Science

(Weeks 1–5)

Build your data science tool kit: Python, SQL, business thinking

Outcome

Join, clean, and prepare messy business data. Ship a reproducible pipeline and a SQL backend that powers a dashboard.

Topics

- Pandas loading/cleaning
- Merges
- KPI aggregations
- Reusable
- Pipelines
- SQL joins/CTEs/windows
- Query optimisation

Sample projects

- Weekly sales & margin pipeline
- Cohort table (retention)
- SQL backend for revenue dashboard

Tools



Module 2: Statistical Intelligence & Business Analytics

(Weeks 6–9)

Turn analysis into confident business decisions

Outcome

Choose the right metrics and tests, run clean analyses, and present evidence-backed recommendations leaders can act on.

Topics

- KPI science (trees, North Star)
- Cohorts & funnels
- RFM
- Market
- Basket
- Time-series decomposition
- Attribution
- Hypothesis testing & power
- CIs
- Bayesian thinking
- Pitfalls & insight documentation

Sample projects

- A/B test plan & results
- Cohort retention study
- Executive insight report

Tools



Module 3: Data visualisation & Storytelling

(Weeks 10–13)

Create executive-ready dashboards and stories

Outcome

Build fast, reliable dashboards and present the “so what” with clear narratives that influence decisions.

Topics

- Visual theory (chart choice, colour/accessibility, Gestalt, mobile)
- BI modelling
- Calculated fields
- Parameters/filters
- Drill-through & RLS
- Performance optimisation
- Python viz & automation (Plotly, scheduled email)
- Style guide
- Pyramid Principle

Sample projects

- C-suite revenue dashboard
- Operations KPI board
- Automated
- Weekly distribution

Tools



Module 4: Machine Learning

(Weeks 14–17)

Predictive analytics that drive action

Outcome

Train and explain models for churn, demand, pricing, or risk; deploy and monitor them with business-first metrics.

Topics

- When ML vs rules
- Feature engineering
- Supervised/unsupervised
- Business evaluation (cost of error, ROI)
- Model cards
- AutoML (PyCaret/Vertex/Azure)
- Deployment endpoints
- MLflow tracking
- Monitoring
- Dashboards & A/B of models

Sample projects

- Churn prediction & playbook
- Demand forecast with CI
- Price elasticity & optimisation

Tools



Module 5: Generative AI

(Weeks 18–20)

GenAI as your analytics multiplier

Outcome

Use AI to draft SQL/code, speed up EDA, explain anomalies, and power safe Q&A over business knowledge with guardrails.

Topics

- SQL/code generation
- Automated EDA
- Anomaly explanations
- NL Q&A for dashboards
- RAG over company knowledge
- Workflow automation (orchestration)
- Governance: validation, bias, privacy,
- Cost control

Sample projects

- AI-augmented analysis pipeline
- RAG Q&A over metrics
- Time-reduction evidence note

Tools



Capstone AI driven business solution

(Weeks 21–24)

Prove your mastery with a real business solution

Outcome

Deliver an end-to-end business solution (repo + dashboards + model card + exec deck) ready for portfolio and review.

Phases

- W21 charter/data
- W22 analysis & model
- W23 BI build + GenAI + user test
- W24 exec presentation, adoption & monitoring plan

Track options

- AI-augmented analysis pipeline
- RAG Q&A over metrics
- Time-reduction evidence note

Tools



Faculty



Chandrashekar Ramanathan
Professor & Dean (Academics)



Prof. Chandrashekar is a faculty member at IIIT-B since 2007 serving as professor, researcher and administrator. He has been working in the field of Computing for over 25 years in various capacities across industry and academia.



Dr. V. Sridhar
Professor



Dr. V. Sridhar, a professor at IIIT-Bangalore's CITAPP, specializes in telecommunications technology, management, and regulation. He has co-authored two books, published numerous articles in leading journals, and written about 300 articles on Telecom and IT in major business newspapers and magazines.

Industry Experts



Deependra Singh
VP & Head of Data Science



Over 15 years of experience in leading analytics practices, data science, deep learning, and AI product development. Successfully led teams at Jungleee Games, American Express Digital Business, and National Insurance Company, pioneering key projects like the analytics engine for the GOI PMJAY policy. Respected speaker at top educational institutes like IMT Hyderabad, BIT Mesra, and NMIMS.



Sajjan Kedia
Sr. Engineering manager



Senior Engineering Manager, Hotstar Sajjan has extensive experience in the field of ML, Big Data, Data Science, and AI.



Sr. Engineering manager



Machine Learning Engineer



Machine Learning Research Engineer



Mirza Rahim Baig
Startup Mentor



Analytics Lead, Zalando Mirza is a veteran professional with 10+ years of experience in application of data science, machine learning in e-commerce and healthcare.



Team Lead - Product

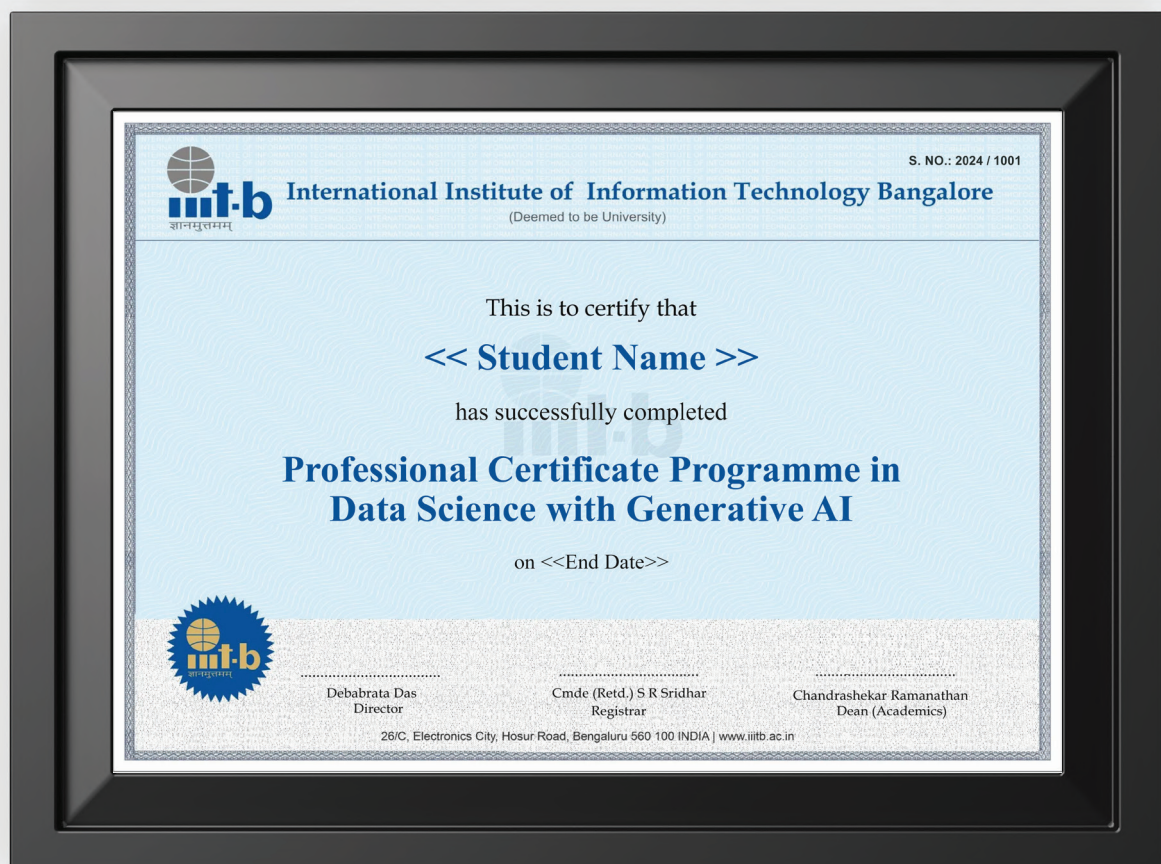


Marketing Analytics



Ex-Analytics Lead

Program Completion Certificate



Earn valuable credentials with a certificate and accredited with NAAC A+ (2021).
Join India's largest DS & AI alumni network of over 10,000 professionals.

Rich and Dedicated Live Support

Industry Expert Sessions

Engage with industry practitioners as they help you master in-demand skills and concepts using a demonstrative hands-on approach



IIITB Faculty Sessions

Learn from some of the most accomplished academicians as they take your knowledge and understanding of data science to another level



Just-In-Time Interview Support

Participate in Technical and HR mock interviews designed to boost your confidence and prepare you to ace interviews.



Career Coaching Sessions

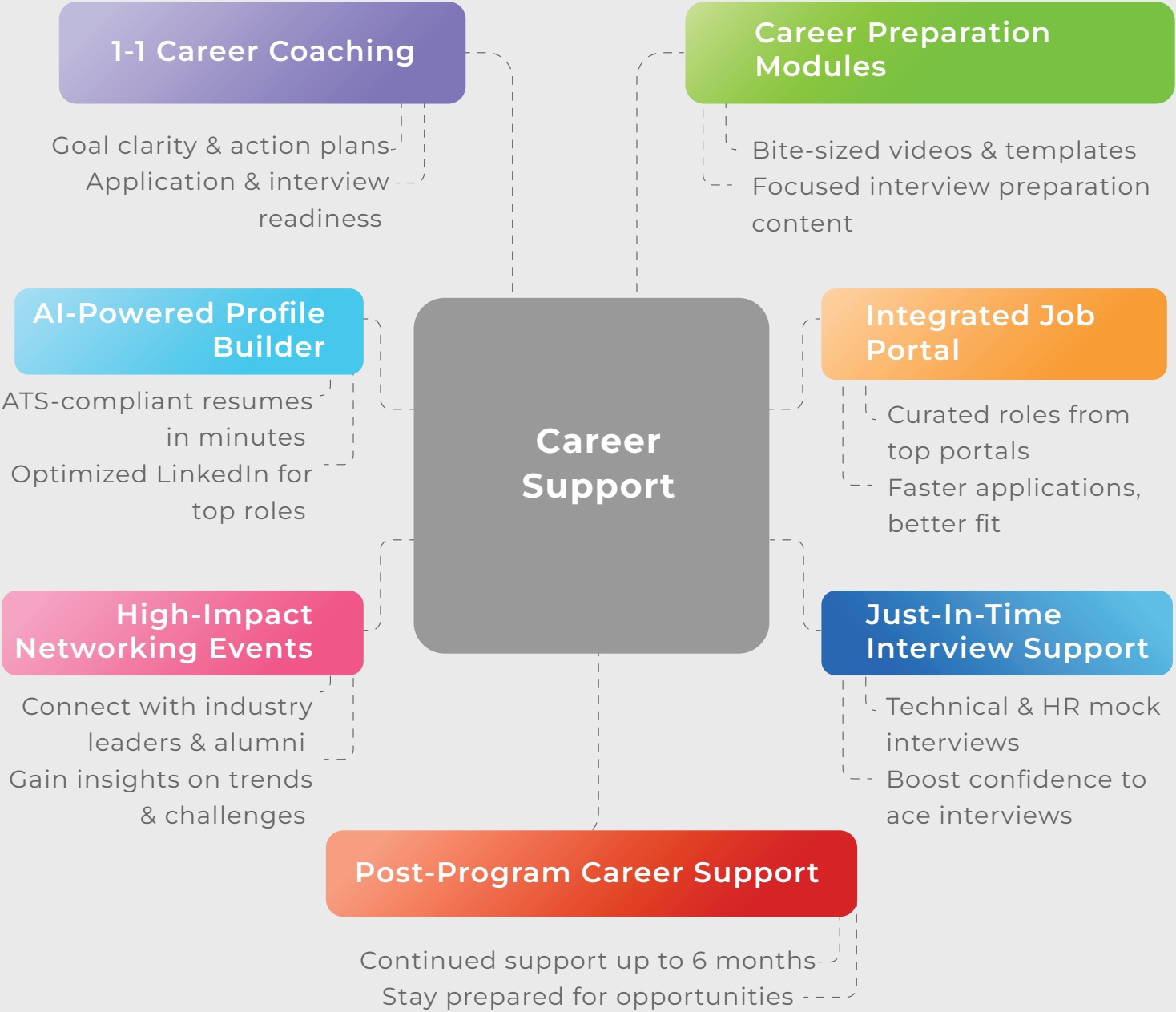
Engage in Career Coaching Sessions via Career preparation modules, High-impact networking events and Just-in-time mock interviews



Daily doubt resolution sessions

Join doubt resolution session slots, that are available daily, and have an expert available to resolve your queries for a smooth learning journey

Effective and Complete Career Support



Student Support

Telegram channel for learner communications Cohort Telegram channel for timely program updates and announcements.	Non-academic and non-technical query assistance 24 X 7 m-AI-ask bot support for non academic assistance.
Completion Support Personalised assistance for smooth program completion, managing backlogs, and cohort deferrals with free and paid waiver options.	Financial benefits Access benefits like referrals and repeats by sharing details with your program co-ordinator or student support executive.

Microsoft-Certified Advantage –

This program doesn't just prepare you for the world of Data Science & AIML—it gives you the Microsoft edge.

Learners earn industry backed certification from upGrad in association with Microsoft by completing specially designed modules integrated into the program, boosting both credibility and career readiness.



Microsoft Learn content modules Certification Modules:

- Introduction to Generative AI Concepts
- Introduction to GitHub Copilot
- Design & Manage Analytics Solutions using Power BI
- Designing & Implementing a Data Science Solution on Azure

Microsoft AI Immersion | Bangalore

Go beyond theory. In this exclusive, hands-on immersion led by Microsoft experts, you'll:

- Master advanced AI-powered collaboration & automation tools
- Build muscle memory with real-world Microsoft applications
- Gain insider strategies directly from the creators of the technology

Why It Matters:

-  Global Recognition – Microsoft badges showcase your skills worldwide
-  Career Differentiator – Employers value certified Microsoft professionals
-  Practical Edge – Learn tools you'll use daily in analytics, AI, and cloud

With industry backed certification from upGrad in association with Microsoft certification + IITB's academic rigour, you graduate with **dual credibility**: academic excellence and industry validation.





About IIITB

The International Institute of
Information Technology Bangalore (IIITB)

Established in 1998, IIITB is a premier institute known for its interdisciplinary approach, integrating technology with social sciences. Supported by the Government of Karnataka and the IT industry, IIITB fosters strong academic-industry partnerships and attracts top talent from across India and abroad through its merit-based selection process.

The institute has graduated over 3,500 students, many of whom work at leading IT companies globally. With a focus on research and development in fields like Artificial Intelligence (AI) and Machine Learning (ML), IIITB is recognised as a leader in AI education.

Ranked 69th in the Engineering category of the National Institutional Ranking Framework (NIRF) in 2025, IIITB continues to excel in education and research, making it a preferred destination for aspiring technologists and future leaders.



AICTE



UGC

ABOUT **upGrad**

“upGrad is a leading global learning and workforce development company. We’re on a single-minded mission of powering career success for every member of the global workforce as their trusted lifelong learning partner. Established in 2015, we have over 10 million learners who have upskilled in a range of online and offline programs from top universities in India and the world.”



Ronnie Screwvala

Co-founder & Executive Chairman

GSV EDTECH 150
Top 150 Most Transformative
Growth Companies

**BRANDON HALL
GOLD AWARDS**
15+ awards across 2 years

PROMISING BRAND 2022
The Economic Times

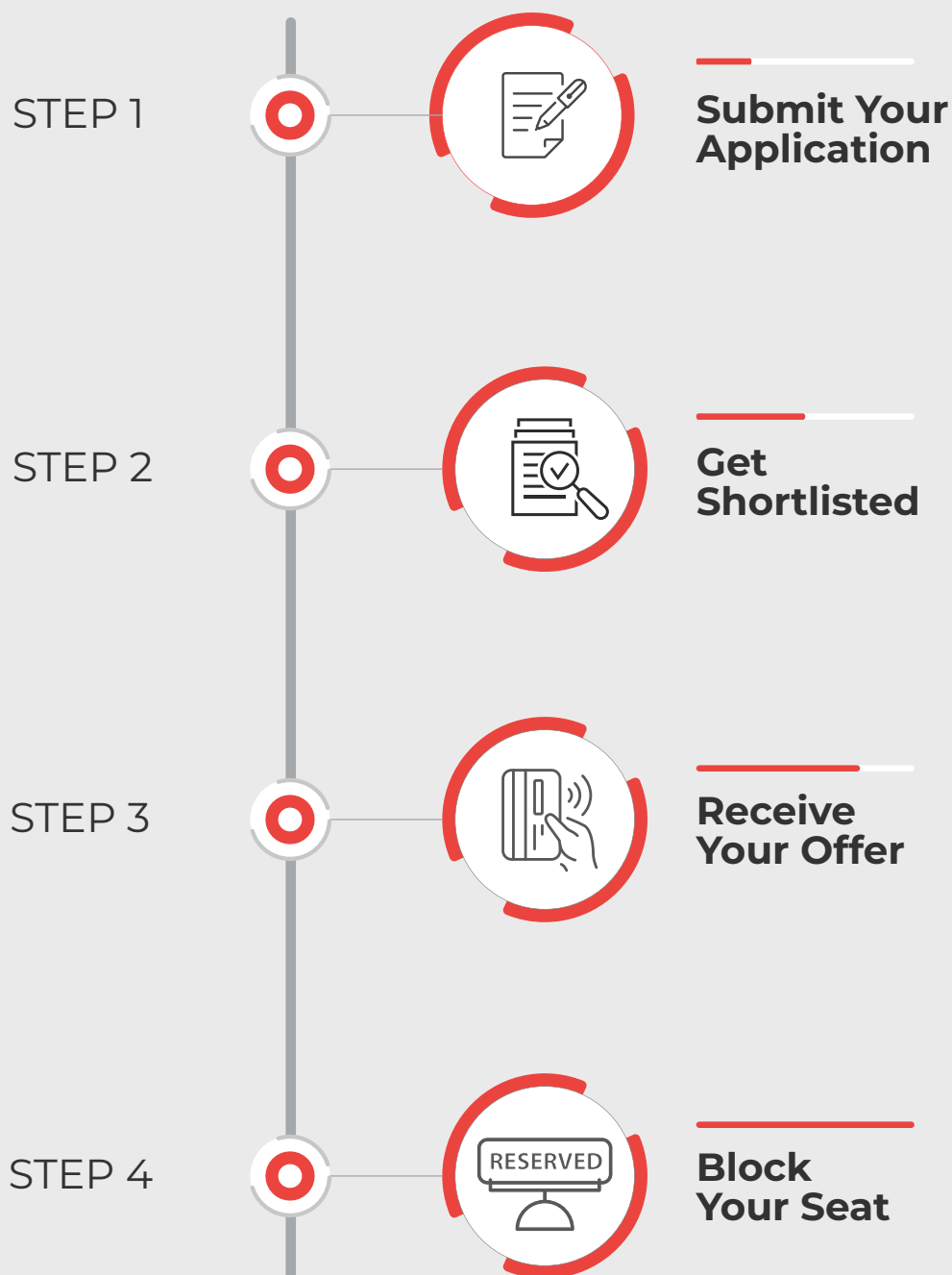
**EDUCATION COMPANY
OF THE YEAR**
VC Circle, 2022

Entrepreneur India
**EDUCATION INNOVATION
AWARDS 2020**
Best Communication &
Teaching Platform

Admissions & How To Apply

Eligibility Criteria

- Graduates & Undergraduates (preferably in the final year)





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LET'S TALK
