

Master of Science in **DATA SCIENCE**

Get the Full Picture



Appearances Are Often Deceptive
DELVE INTO DATA



Table of Contents

- 2** About upGrad
- 3** Why upGrad?
- 4** Program Highlights
- 5** Faculty and Industry Experts
- 8** upGrad Learning Experience
- 10** Industry Projects
- 11** Learning Path
- 12** Master's Curriculum
- 21** Meet the Class
- 22** Career Support
- 23** Our Alumni Work at
- 24** Career Transitions
- 26** Hear from Our Learners
- 28** Program Details and Admission Process



About upGrad

upGrad has delivered over 20 million hours of learning, delivering programs by collaborating with universities across the world including Liverpool John Moores University, IIT Madras, IIIT Bangalore and Deakin Business School among others.

Online education is a fundamental disruption that will have a far-reaching impact. upGrad was founded taking this into consideration. upGrad is an online education platform to help individuals develop their professional potential in the most engaging learning environment.

Since its inception, upGrad has delivered over 20 million hours of learning, delivering programs by collaborating with universities across the world including LJMU, IIT Madras, IIIT Bangalore and Deakin Business School among others. And it doesn't end there.

upGrad, in collaboration with IIIT Bangalore, a renowned university offering programs specialising in Data Science, Machine Learning and Artificial

Intelligence, is excited to offer a one-of-its-kind, academically rigorous and industrially relevant Master of Science in Data Science.

The faculty includes an average of 15+ years of experience. The faculty covers the conceptual depths of topics such as Data Science, Machine Learning and AI, and Big Data Analytics. These will be complemented by industry-relevant case studies from major industry verticals by industry leaders with 8+ years of experience from upGrad's industry network.

Furthermore, our strong alumni network, industry mentorship and the credibility of a Master's Degree will provide you with just the right push to accelerate your career in Data Science!





Why upGrad?



upGrad's World Class
Online Education Platform

India's Largest Online
Higher Education Company

400%
Highest Hike



58%

Avg Salary Hike



700+
Industry Experts

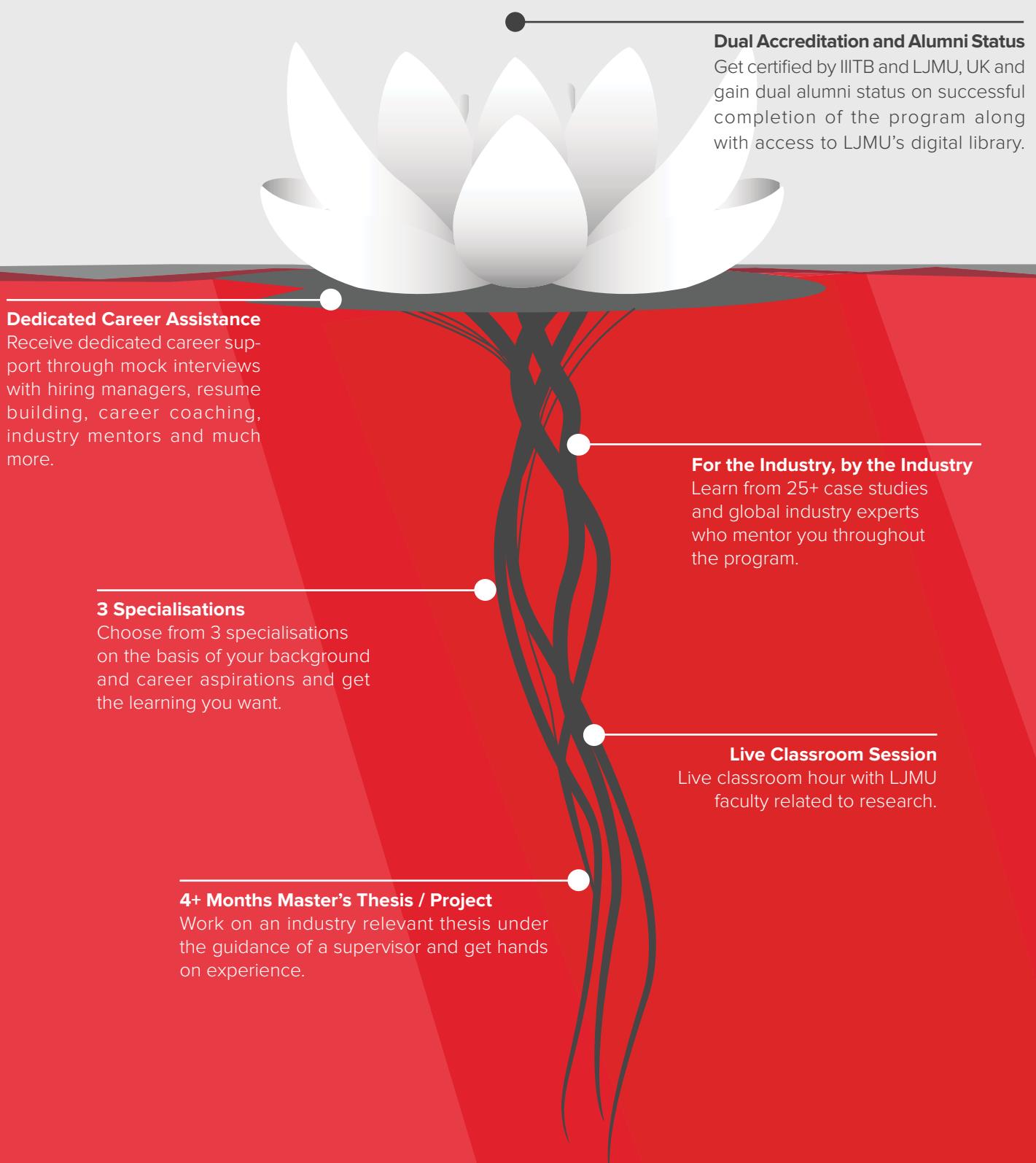


40,000
Learners





Program Highlights



Faculty and Industry Experts



Dr Gabriela Czanner
Faculty - Engineering and Technology,
LJMU

A Senior Lecturer in Statistics and Data Science at the Department of Applied Mathematics at LJMU. Her research focus is Advanced Statistics for Decision Support.



Prof. Paulo Lisboa
Head of Dept - Applied Mathematics,
LJMU

Studied Mathematical Physics at LU and was the chairman of Industrial Mathematics at LJMU in 1996 and Head of Graduate School in 2002.



Dr. Atif Waraich
Faculty - Computer Science,
LJMU

A Senior Faculty of Engineering and Technology at LJMU who has multiple publications in the healthcare domain.



Prof. Dhiya Al-Jumeily
Professor - Artificial Intelligence, LJMU

A Senior Member of the IEEE and a Chartered IT Professional. He is a fellow of the UK Higher Education Academy.



Chandrashekhar Ramanathan
Dean Academics, IIITB

Prof. Chandrashekhar has a PhD from Mississippi State University and experience of over 10 years in several multinational organisations.



Tricha Anjali
Ex-Associate Dean, IIITB

Prof. Anjali has a PhD from Georgia Institute of Technology as well as an integrated MTech (EE) from IIT Bombay. She is currently the Dean of IIITB.



Prof. Debabrata Das

Director, IIITB

Dr. Debabrata Das is serving as Director of IIIT Bangalore (IIITB). He has completed his Ph.D. degree from the Indian Institute of Technology Kharagpur. His main areas of research interest are IoT and Wireless Access Network's MAC, QoS, Power saving.



Anshuman Gupta

Director - Data Science, Pitney Bowes

He has a PhD (Dual) from Penn State University as well as a BTech Degree from IIT Bombay.



Ujjyaini Mitra

Head of Analytics, Zee5

An alumna of McKinsey and Co., Flipkart, and Bharti Airtel with over 11 years of experience.



Ankit Jain

Sr. Research Scientist, Uber AI Labs

An alumnus of IIT Bombay, UCB and Harvard Business School with over 9 years of experience.



Mirza Rahim Baig

Lead Business Analytics, Flipkart

Advanced Analytics professional with 8+ years of experience as a consultant in the e-commerce and healthcare domains.



Sajan Kedia

Lead Data Scientist (Pricing), Myntra

An alumnus of IIT with over 7 years of experience at Watson at IBM Research, start-ups and Myntra.



Prof. G. Srinivasaraghavan

Professor, IIITB

Prof. Srinivasaraghavan has a PhD in Computer Science from IIT-K and 18 years of experience with Infosys Technologies and several other companies.



S. Anand

CEO, Gramener

A gold medallist from IIM Bangalore, an alumnus of IIT Madras and London Business School, Anand is among the top 10 data scientists in India with 20 years of experience.



Bijoy Kumar Khandelwal

COO, Actify Data Labs

Bijoy comes with a deep understanding of the private and cloud architectures and has helped numerous companies make the transition.



Colin Hagemeyer
Data Scientist, Mentor Analytics,
San Jose, CA, USA

Colin has done his PhD from University of California. He brings with him 10+ years of rich international experience in the field of Data.



Behzad Ahmadi
Data Scientist, Walmart Labs
San Francisco Bay Area, USA

Behzad has done his PhD from New Jersey Institute of Technology. He has worked with Qualcomm, US and Walmart, US on different data driven roles.



Prof. Dr. V. Sridhar
Faculty In Charge, CPE, IIITB

Dr. Sridhar has a Ph.D. from the University of Iowa, U.S.A. He has been a member of Government of India committees on Telecom and IT and has published many peer reviewed articles in telecom and information systems journals.





upGrad Learning Experience

Coaching

- Dedicated Student Support Team & upGrad Buddy
- Weekly real-time doubt clearing sessions
- Live Discussion forum for peer-to-peer doubt resolution monitored by technical experts
- Peer-to-peer international networking opportunities with an alumni pool of 10,000+
- Lab walk-throughs of 15+ industry-driven case studies
- Employability Tests for industry readiness
- Access to the program for up to 3 years

Hands-On Projects

25+ case studies to choose from as well as a Capstone Project

Format

Online format with weekly live sessions from global industry experts to help with topic walk-throughs, doubt resolution and personalised project feedback.

Mentorship

60+ live interactive sessions with global industry experts, fortnightly personalised group (1:8) mentorship sessions and a dedicated student mentor for proactive mentoring.

New Additions

Deep Learning

- Specially designed for learners with 0 to 5 years of experience to become job ready
- Additional Live sessions, Practice Questions, Quizzes, Career Essentials to be conducted
- Curriculum Focus Areas: Database, Visualization, Classical Machine Learning, Data Structures & Algorithms

Career Essential Soft-skills Program

- Excel your personal & professional life with upGrad's Soft Skills Program
- Study Three fundamental Skills - Interview & Job Search, Corporate & Business Communication and Problem Solving
- Learn these skills from the best faculty and industry experts





Industry Projects



IMDb Movie Analysis



Uber Supply-Demand Gap



Lead Scoring



Fraud Detection



Creditworthiness of Customers



Speech Recognition



Image Captioning



Social Media Listening



Telecom Churn



Interactive Market Campaign Analysis



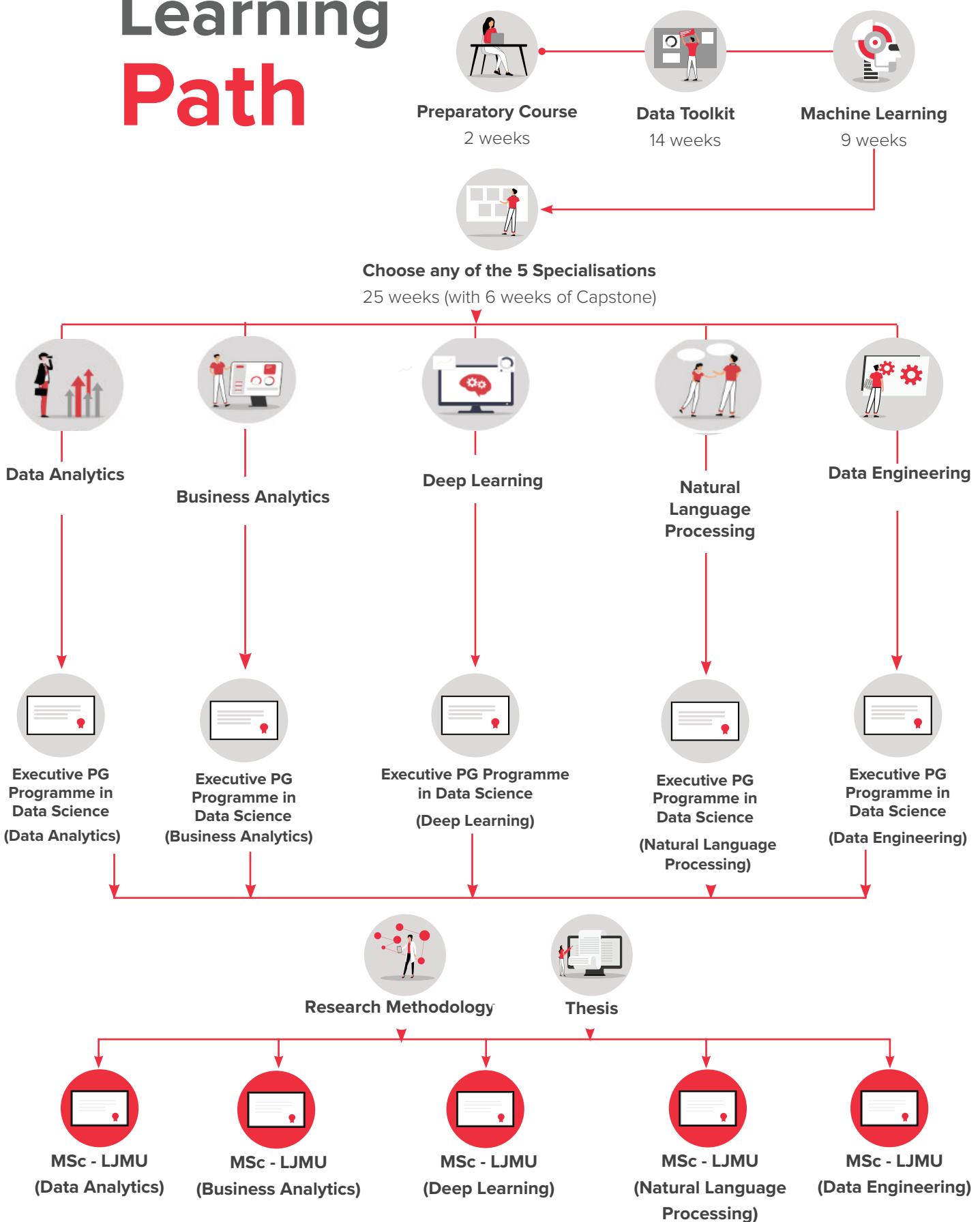
Retail Giant Sales Forecasting



And many more!



Learning Path





Program Curriculum



Course 1: Data Toolkit

- Introduction to Python
- Programming in Python
- Python for DS
- Data Visualisation in Python
- Exploratory Data Analysis
- Credit EDA Assignment
- Inferential Stats
- Hypothesis Testing
- Basics of SQL
- Advanced SQL
- SQL - RSVP Movies Case Study

Course 2: Machine Learning - I

- Linear Regression - I
- Linear Regression - II + Gradient Descent for SLR
- Linear Regression Assignment
- Logistic Regression - I
- Logistic Regression - II
- Classification using Decision Trees
- Unsupervised Learning: Clustering
- Basics of NLP and Lexical Processing
- Business Problem Solving + Intro to GIT and GITHUB
- Case Study: Lead Scoring



Data Analytics

Course 3: Advanced DBs and Big Data Analytics

- Advanced Regression
- Advance regression assignment + SVM (Optional)
- Tree Models
- Random Forests + Practical Considerations
- Boosting - 1
- Unsupervised Clustering
- PCA
- Telecom Churn Case Study

Course 4: Data Visualisation and Storytelling

- Basic Viz. using Tableau
- Advanced Excel
- Data Analysis and Visualisation in PowerBI
- Analytical Thinking and Structured Problem Solving using Frameworks
- Data Storytelling
- Airbnb Case Study

Course 5: Advanced Problem Solving and Programming

- Data Structures and Algorithms
- Searching & Sorting
- Algorithm Analysis and Recursion
- Advanced Database Programming using Pandas
- SQL & Python Lab

m (Slot 1 & 2)

Capstone



Business Analytics

Course 3: Advanced Machine Learning

- Bagging & Random Forests
- Model Selection - I
- Model Selection - II
- Time Series Forecasting - I
- Time Series Forecasting - II
- Model Selection Case Study

Course 4: Data Visualisation and Storytelling

- Basic Viz. using Tableau
- Advanced Excel
- Data Analysis and Visualisation in PowerBI
- Analytical Thinking and Structured Problem Solving using Frameworks
- Data Storytelling
- Airbnb Case Study

Course 5: Generative AI

- Fundamentals of Transformers Architecture, Generative AI, ChatGPT & Prompt Engineering using Non Reasoning, Chain of Thought & Advanced Techniques
- Product Development using OpenAI APIs, Fine Tuning using STaR technique in Python
- Integrating speech using Whisper API and application deployment using Flask
- Fundamentals of Design, Photography, Product Development using Stable Diffusion in Python & Create PixxelCraft AI to enable fast-track digitisation for offline e-commerce businesses by generating high-quality images AI for a large product portfolio
- Applications of LLMs in Data Science Projects & Automating News Recommendation using GPT3 and Copilot powered Machine Learning applications of LLMs
- Interview Gynie AI: Chatbot Development Project

Capstone



Deep Learning

Course 3: Machine Learning-II

- Bagging & Random Forests
- Boosting
- Model Selection
- PCA
- Advanced Regression
- +Time Series Forecasting (Optional)"
- Advanced ML Case Study

Course 4: Advanced ML & DL

- Introduction to Neural Networks and ANN
- Backpropogation & Hyperparameter Tuning in Neural Networks
- Introduction to Convolutional Neural Networks
- CNN Architectures and Industry Applications
- + Recurrent Neural Networks (Optional)
- Applications of DL in CV: Object Detection
- Image Segmentation (Optional)
- Gesture Recognition Case Study

Course 5: Generative AI

- Fundamentals of Transformers Architecture, Generative AI, ChatGPT & Prompt Engineering using Non Reasoning, Chain of Thought & Advanced Techniques
- Product Development using OpenAI APIs, Fine Tuning using STaR technique in Python
- Integrating speech using Whisper API and application deployment using Flask
- Fundamentals of Design, Photography, Product Development using Stable Diffusion in Python & Create PixelCraft AI to enable fast-track digitisation for offline e-commerce businesses by generating high-quality images AI for a large product portfolio
- Applications of LLMs in Data Science Projects & Automating News Recommendation using GPT3 and Copilot powered Machine Learning applications of LLMs
- Interview Gynie AI: Chatbot Development Project

Capstone



Natural Language Processing

Course 3: Machine Learning-II

- Bagging & Random Forests
- Boosting
- Model Selection
- PCA
- Advanced Regression
- + Time Series Forecasting (Optional)"
- Advanced ML Case Study

Course 4: Advanced ML & NLP

- INeural Nets for NLP
- Syntactic Processing
- Introduction to Semantic Processing & Distributional Semantics
- Semantic Processing - Topic Modelling
- Advanced DL in NLP: Attention Mechanism
- Automatic Ticket Classification

Course 5: Generative AI

- Fundamentals of Transformers Architecture, Generative AI, ChatGPT & Prompt Engineering using Non Reasoning, Chain of Thought & Advanced Techniques
- Product Development using OpenAI APIs, Fine Tuning using STaR technique in Python
- Integrating speech using Whisper API and application deployment using Flask
- Fundamentals of Design, Photography, Product Development using Stable Diffusion in Python & Create PixcelCraft AI to enable fast-track digitisation for offline e-commerce businesses by generating high-quality images AI for a large product portfolio
- Applications of LLMs in Data Science Projects & Automating News Recommendation using GPT3 and Copilot powered Machine Learning applications of LLMs
- Interview Gynie AI: Chatbot Development Project

Capstone



Data Engineering

Course 3: Data Engineering - I

- Data Management and Relational Database Modelling
- Introduction to Cloud and AWS Setup
- Introduction to Hadoop and MapReduce Programming
- NoSQL Databases and Apache HBase
- Data Ingestion with Apache Sqoop and Apache Flume
- MapReduce Programming Assignment

Course 4: Data Engineering - II

- Hive and Quering + Optional Assignment
- Introduction to Apache Spark+ Optional Assignment
- Amazon Redshift
- ETL Project

Course 5: Data Engineering - III

- Optimizing Spark for Large scale processing
- Real-Time Data Streaming with Apache Kafka
- Real-Time Data Processing using Spark Streaming + Assignment (Optional) + Apache Flink (Optional)
- Building Automated Data Pipelines with Airflow
- Analytics using PySpark+ Optional Assignment
- Retail Project

Capstone



Masters Phase

Research Methodologies

- Introduction to Research and Research Process
- Research Design
- Literature Reviewing
- Research Project Management
- Report Writing and Presentation Skills
- Scientific Ethics

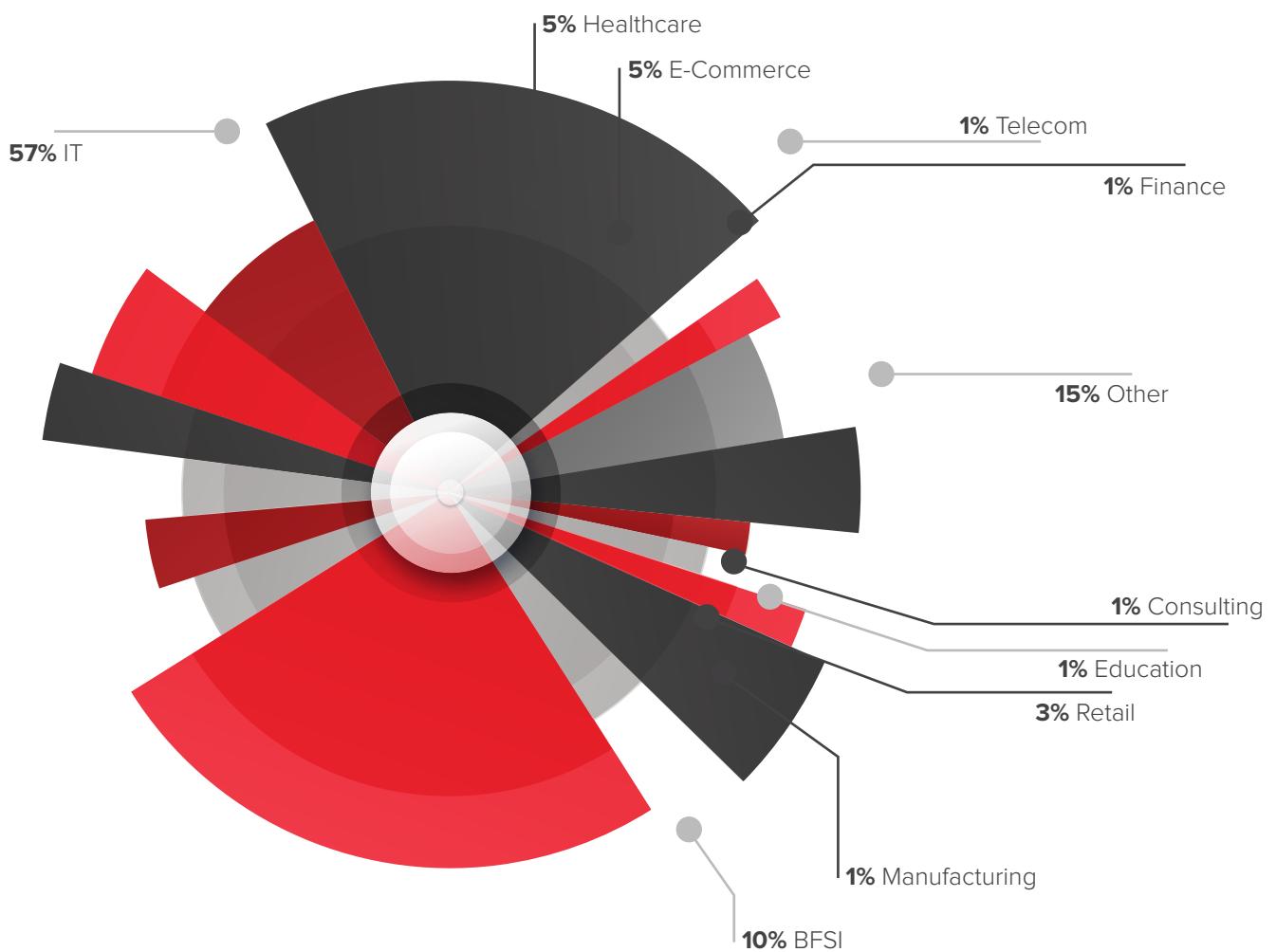
Master's Dissertation

- Investigate dietary patterns and metabolite fingerprints of takeaway (fast) food consumers using PCA and clustering methods
- Investigate a diagnosis of eye diseases using imaging ophthalmic data
- Structure medical images with information geometry
- Using Social media feed to place tweets regarding natural disasters on a map
- Preventing credit card fraud through pattern recognition
- Developing a recommender system for a Media giant
- Risk modelling for Financial activities and Investment Banking

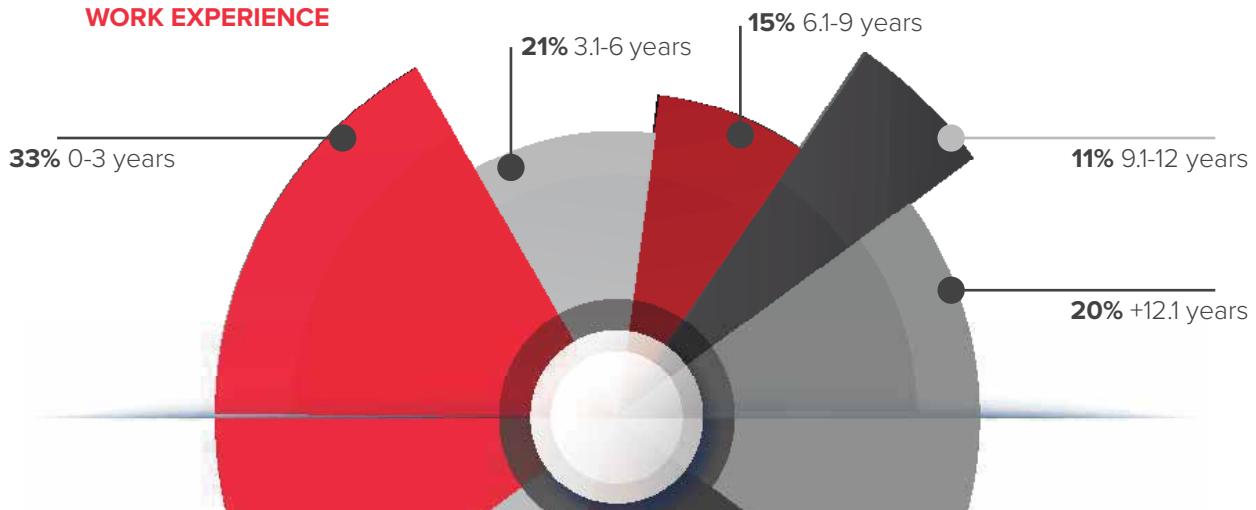


Meet the Class

INDUSTRIES OUR STUDENTS COME FROM



WORK EXPERIENCE





Career Support

Mock Interviews

Get company and role-specific preparation with our mock interview sessions.

Resume Review

Obtain specific, personalised inputs on your resume structure and content.

Personalised Mentorship

Get mentored by an internationally experienced data science industry expert and receive personalised feedback with 4 one-to-one calls.

Career Mentor

Get a dedicated career mentor to help track your weekly company application targets, coach you on your profile, and support you during your career transition journey.

Post Graduation Career Support

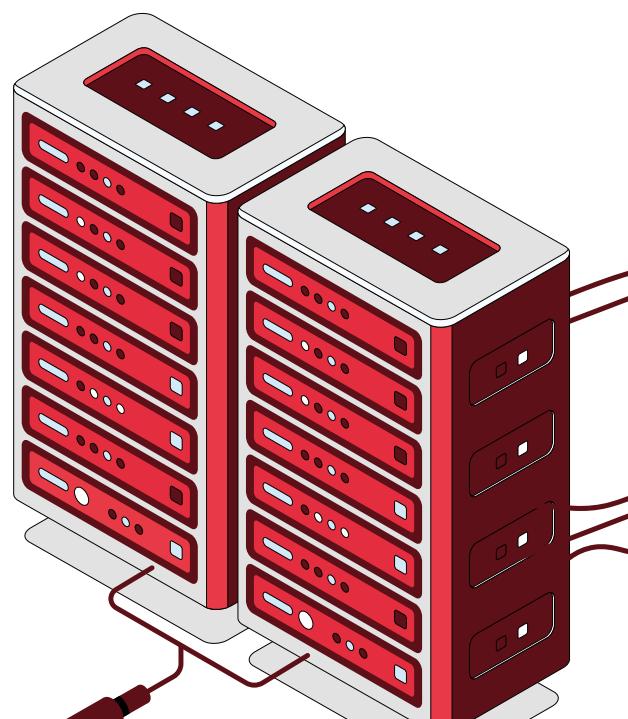
Career sessions are continued post graduation because we want you to have all the help you need. These include: live sessions with industry mentors to guide you, dedicated mentorship, and access to upGrad's career assistance resources.

Company-Specific Preparation

Get company-specific guidance with access to a carefully curated pool of interview resources per company to ensure you are interview-ready for the company of your choice.

Live Profile Building Workshops

Have live sessions of how to build your profile - be it your resume or GitHub - with hands-on sessions on Git and Github you can boost your profile. And also include your work from Kaggle & OpenCV.





Our Alumni Work at

upGrad has a network of over 100 companies who look to recruit graduates from our programs. Some of these well-known companies include:

	High performance. Delivered.			J.P.Morgan



Career Transitions

**Abhishek Singh**MIS Executive (F&B)
Batch: March 2018Senior Data Analyst, Myntra
(Oct 2019)**Ayush Modi**Associate Consultant (IT)
Batch: March 2018Marketing Analyst,
Globalization Partners
(July 2019)**Ashish Y**Asst. Manager
(Manufacturing/Production)
Batch: Sept 2018Business Analyst, Arvind
(Sept 2019)**Jai Krishna**Fresher
Batch: Sept 2018Business Analyst, Quantzig
(Nov 2019)**Shadab Hussain**Data Scientist (IT)
Batch: Sept 2018Analyst, TheMathCompany
(July 2019)**Damodar Bandi**Global Supply Chain Analyst
(Software)
Batch: Dec 2018Sr. Business Analyst, Data
Semantics
(Aug 2019)**Shubhadip B**Technical Project Manager
(Tech Solutions)
Batch: June 2018Sr. Technical Project Manager,
Aurionpro
(Oct 2019)**Deepshikha**Senior Associate (Tech)
Batch: March 2019Data Analyst, Amazon
(Nov 2019)**Rohit W**Quality Assurance Tester
(BFSI)
Batch: Jan 2019Python Automation Engineer,
Credit Suisse
(July 2019)**Hariharan S**AVP (BFSI)
Batch: March 2018Project Manager, HSBC
(Aug 2019)**Mohit Mamgain**Internship (IT)
Batch: March 2018Data Analyst, Shine.com (Aug
2019)**Aakash Dusane**Software Engineer (Software)
Batch: Dec 2018Data Scientist, Quantzig
(Aug 2019)



Sri Harsha Ravi

Principal Data
Structure Engineer (IT)
Batch: Sept 2018

↓
Senior Data Scientist, IHS
Markit
(Nov 2019)



Sujit Nalawade

Software Engineer (IT)
Batch: Sept 2018

↓
Data Analyst, Xoriant



Sudha Choudhary

Fresher
Batch: June 2018

↓
Internship - AI Engineer,
Athancare
(July 2019)



Nishant Chalasany

Project Manager (Agro)
Batch: March 2019

↓
Analytics Operations Lead,
Syngenta
(July 2019)



Ganesh Varanasi

Analyst (BFSI)
Batch: March 2018

↓
Data Scientist, Innominds
(July 2019)



Anshul Srivastava

Business Analyst (BFSI)
Batch: Sept 2018

↓
Associate Consultant, Fractal
(Aug 2019)



Anshul Kumar

Analyst (BFSI)
Batch: March 2019

↓
Data Science Intern,
Merkle Sokrati
(Aug 2019)



Sylvester Pinto

Senior Software Engineer (IT)
Batch: Dec 2018

↓
Data Associate, J.P. Morgan
(June 2019)



Ansuman Das

Risk Analyst (IT)
Batch: March 2019

↓
Specialist Data Analyst,
Novartis
(Aug 2019)



And many more...



Hear from Our Learners

Kunwar Alok, Experience: 15+ Years

"You may not believe but I have never done coding in my life. I did it during this program and was thrilled to see the outcomes coming out of those codes. Just the way I used to get happy after solving a good (tough) math problems during my school age. Thanks to UpGrad for doing a great service to people like us who at the age of 43 can dream to study with budding talents around."



Sachin Aggarwal, Experience: 18+ Years

"Learning with IIITB and UpGrad has been an experience like no other. Being an online program, you have your worries about how the program and teaching methods will be. My favourite part about the learning experience has been programming through well designed and thoughtful content shared by IIITB professors and industry experts on UpGrad platforms. Kudos to UpGrad."

Savita Upadhyaya, Experience: 4 Years

"It has been amazing journey with UpGrad till now. Starting with their Program material to Live sessions to Mentor support helps one to always be on track and progress efficiently with Data Science program. My sincere Thanks to the entire team of UpGrad and Profs of IIITB to show me the path and direction for my dream to become a Data Analyst."



Sidharth Mahapatra, Experience: 3 Years

"The concepts of R programming and Machine Learning will be taught by Prof. Chandrasekhar Ramanathan and Prof. G Srinivasaraghavan respectively. Both of them have been listed in top twenty prominent data science academicians list published by Analytics India Magazine. So you need not worry about quality of teaching in this program."



Tuhin Pal, Experience: 5 Years

"I appreciate the platform UpGrad how they have arranged the modules and the assignments are quality ones. You will relish your college days again as the exams are felt like semester ones, you can't talk to anybody . Modules are locked till you complete the previous one so it feels like clearing a semester and going to the next one."

Harkirat Dhillon, Experience: 8 Years

"A dedicated regimen for studying the program and keep learning is the key to be successful and pass the program. This program will help build a strong foundation for successful transition to data science. Additionally, participating in Kaggle competitions to solve real world problems will definitely give you an edge and land a job if one is willing to work hard."



Shravani Shahapure, Experience: 16 Years

"For someone who really wants to pursue career in the field of data science, it is worth to opt for the complete program by IIITB and Upgrad. Data science is experimental science. We need to develop right kind of thinking ability to approach to the problems. And to develop this ability, we need experts direction. Knowing tools won't solve the problems always, we need to use them wisely and correctly. IIITB and Upgrad's online program on data science gives this opportunity and develop student for their future as they provide best professors, thought provoking assignments and case studies ."

Sagar Tekwani, Experience: 2 Years

"A very well-structured and well-balanced program content which you won't get in other programs/nano-degrees. Being a beginner in DS, I found the structure of Advanced Certificate Program from IIITB and upGrad most helpful. They even teach you most of the prerequisites with prep sessions before you even start the program. Being a working professional, it was neither too difficult nor too easy to keep up with the pace of the program."





Program Details and Admission Process

PROGRAM DURATION AND FORMAT

20 Months | Online

PROGRAM START DATES

Please refer to the website for program start dates.

PROGRAM FEE

Please refer to the website for the program fee.

ELIGIBILITY

Bachelor's Degree with 50% or equivalent passing marks. No coding experience required.

WEEKLY COMMITMENT (13 hours/week)



6-7 HOURS

Asynchronous learning time.



6-7 HOURS

Assignments and projects.



1 LIVE SESSION / EXPERT COACHING SESSION

Every week.

SELECTION PROCESS



STEP 1: Selection Test

Fill out an application and take a short 17-minute online test with 11 questions.



STEP 2: Review and Shortlisting of Suitable Candidates

Our faculty will review all applications, considering the educational and professional background of an applicant and review the test scores where applicable. Following this, Offer Letters will be rolled out so you are assured a great peer group to learn and network with.



STEP 3: Enrollment for Access to Prep Content

Make a quick block payment, receive immediate access to the prep content and begin your upGrad journey.

For any queries, reach us on the following numbers:

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