



MIT INSTITUTE FOR DATA,
SYSTEMS, AND SOCIETY

APPLIED DATA SCIENCE BOOTCAMP

BECOME A DATA-DRIVEN DECISION MAKER
WITH THE 12-WEEK ONLINE BOOTCAMP
FROM MIT IDSS

In collaboration with
greatlearning
Learning for Life

An alliance member of
MIT | **IDSS**
MIT INSTITUTE FOR DATA,
SYSTEMS, AND SOCIETY

About MIT IDSS

The MIT Institute for Data, Systems, and Society (IDSS) supports and trains interdisciplinary thinkers who use the tools of data science to bring new insights to society's most pressing challenges. IDSS faculty come from all across MIT, and they collaborate on research that combines 21st century statistics and machine learning with other methodologies, including the social sciences, to address challenges in domains like public health, renewable energy, climate change, the spread of 'fake news,' and transportation.

IDSS builds research partnerships to help industries innovate and education partnerships to empower learners around the globe with data science skills, while advocating for data-driven technology policies that benefit local and global communities.

Mission

The mission of MIT IDSS is to advance education and research in state-of-the-art analytical methods in data science, information & decision systems, statistics, and the social sciences, and to apply these methods to address complex societal challenges in a diverse set of areas such as finance, energy systems, urbanization, social networks, and health.





About the Bootcamp

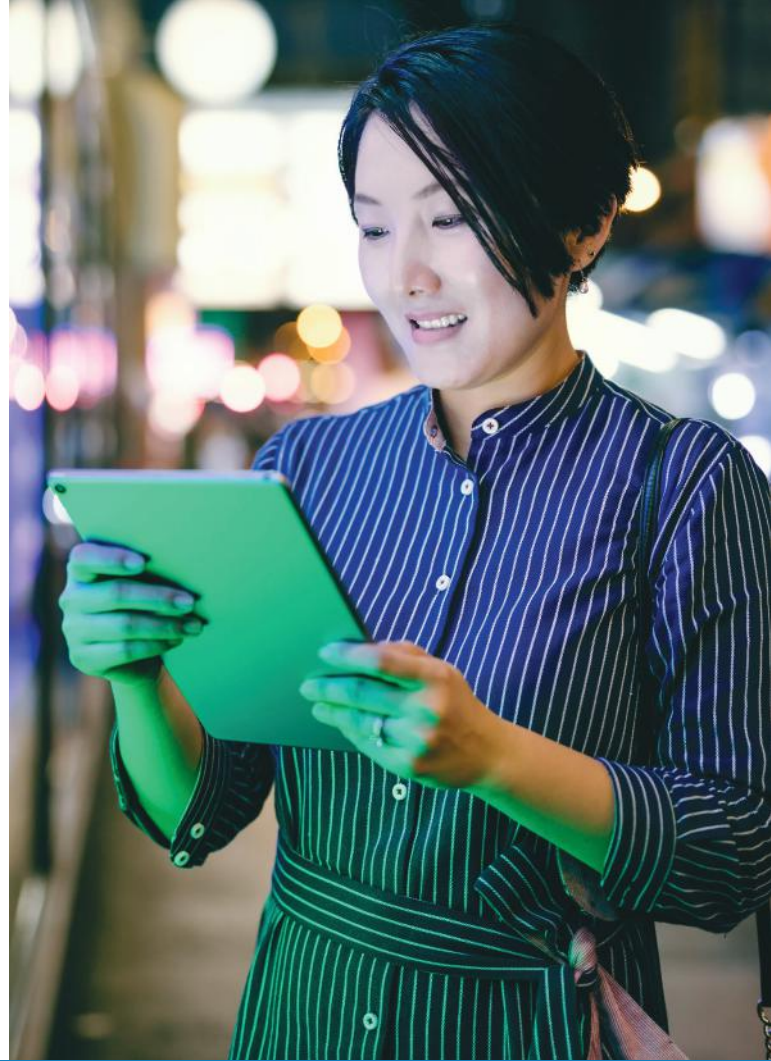
90% of the world's data has been created in just the past few years. Faced with overwhelming amounts of data, organizations are struggling to extract the powerful insights they need to make smarter business decisions. To help uncover the true value of your data, MIT Institute for Data, Systems, and Society (IDSS) has created the Applied Data Science Bootcamp for future-focused professionals looking to harness data in new and innovative ways.

Over the course of 12 weeks, you will take your data analytics skills to the next level as you learn the theory and practice behind supervised and unsupervised learning, time series analysis, recommendation engines, regressions, neural networks, computer vision and natural language processing.

At the end of the course, you will receive a digital certificate from MIT IDSS.

Program Benefits

- ★ Learn from award-winning MIT IDSS faculty via live virtual sessions from the convenience of your home.
- ★ Demonstrate data science leadership by building a portfolio of industry-relevant hands-on projects, including a 3 week long capstone project.
- ★ Earn a certificate from MIT IDSS on your Applied Data Science skills.
- ★ Get live mentorship from industry experts on the applications of concepts taught by faculty.



Program Structure

The program is 12-weeks long:

2 weeks

for Foundational courses on Python and Statistical Science.

6 weeks

of core curriculum including practical applications. Involves 50 hours of live sessions by MIT Faculty and Industry Experts, with hands-on practical applications and problem solving.

1 week

for project submissions

3 weeks

for a final, integrative Capstone project.

Who is this program for?

- Working professionals who are interested in a career in Data Science and Machine Learning.
- Working professionals interested in leading Data Science and Machine Learning initiatives at their companies.
- Entrepreneurs interested in innovation using Data Science and Machine Learning.



After This Course, You Will Be Able To

- ★ Understand the intricacies of data science techniques and their applications to real-world problems.
- ★ Implement various machine learning techniques to solve complex problems and make data-driven business decisions.
- ★ Explore two major realms of Machine Learning, Deep Learning and Neural Networks, and how they can be applied to areas such as Computer Vision and NLP.
- ★ Develop strong foundations in Python, mathematics, and statistics for data science.
- ★ Understand the theory behind recommendation systems and explore their applications to multiple industries and business contexts
- ★ Build an industry-ready portfolio of projects to demonstrate your ability to extract business insights from data

Program Curriculum

The program is 12-weeks long:

2 weeks for foundations

6 weeks of core curriculum, including practical applications

1 week for project submissions

3 weeks for a final, integrative project

Module 1

Week 1 & 2

Foundations for Data Science

- Python Foundations: Libraries: Pandas, NumPy, Arrays and Matrix handling, Visualization, Exploratory Data Analysis (EDA)
- Statistics Foundations: Basic/Descriptive Statistics, Distributions (Binomial, Poisson, etc.), Bayes, Inferential Statistics

Module 2

Week 3

Data Analysis & Visualization

- Exploratory Data Analysis, Visualization (PCA, MDS and t-SNE) for visualization and batch correction
- Introduction to Unsupervised Learning: clustering: hierarchical, k-means, Gaussian mixture
- Networks: Examples (data as network versus network to represent dependence among variables); determine important nodes and edges in a network, clustering in a network

Module 3

Week 4

Machine Learning

- Regression: Linear
- Classification: Logistic
- Model Evaluation: Cross Validation

Module 4

Week 5

Practical Data Science

- Decision Trees
- Random Forest
- Time Series (Introduction)

Module 5

Week 6

Neural Networks, Deep Learning, and Computer Vision

- Intro to Deep Learning
- CNN and Vision

Module 6

Week 7

Recommendation Systems

- Intro to Recommendation Systems
- Matrix
- Recommendation Systems for Restaurants
- Recommendation Systems for Social Networks, Social Market Place

Module 7

Week 8

Graph Neural Networks and Recommendation

- Graph Neural Networks (and Robustness)
- Tensor (time, hybrid), Neural Networks for Recommendation Systems
- Recommending Next Song for Music Streaming

Module 8

Week 9

Project Week

- Time for candidates to finish and submit their projects

Module 9

Week 10-12

Capstone Project

- Week 10: Milestone 1
- Week 11: Milestone 2
- Week 12: Synthesis + Presentation



Faculty



Devavrat Shah

Director, Statistics and Data Science Center (SDSC) at MIT
Professor, Electrical Engineering & Computer Science (EECS) at MIT
PhD (Stanford University)



Munther Dahleh

Director, MIT Institute for Data, Systems and Society (IDSS)
William A. Coolidge Professor, Electrical Engineering & Computer Science (EECS) at MIT
PhD (Rice University)



Caroline Uhler

Henry L. & Grace Doherty Associate Professor, Institute for Data, Systems and Society (IDSS) and Dept. of Electrical Engineering & Computer Science (EECS) at MIT
PhD (UC Berkeley)



John N. Tsitsiklis

Clarence J Lebel Professor, Dept. of Electrical Engineering & Computer Science (EECS) at MIT
Director, Laboratory for Information and Decision Systems (LIDS) at MIT
PhD (MIT)



Stefanie Jegelka

X-Consortium Career Development Associate Professor, Electrical Engineering & Computer Science (EECS) at MIT
Principal Investigator, Computer Science & Artificial Intelligence Laboratory (CSAIL) at MIT
PhD (ETH Zurich)

Mentorship From Industry Experts

The program allows you the opportunity to engage with data science and machine learning experts via live and personalized mentored learning sessions to give you a practical understanding of core concepts. A few of the industry experts engaged with us as mentors include:



Roman Mozil

Applied Data Scientist
Finning (Canada)



Kalle Bylin

Product Engineer,
Modyo (Colombia)



Jitendra Upadhyay

Senior Data Scientist,
Bank of America (Singapore)



Nitish Jaipuria

Strategist - Data Science,
Google (Singapore)



Wole Ogungbesan

Director - Advance Analytics
& Automation, UBS
(United Kingdom)



Adaikalavan Ramasamy

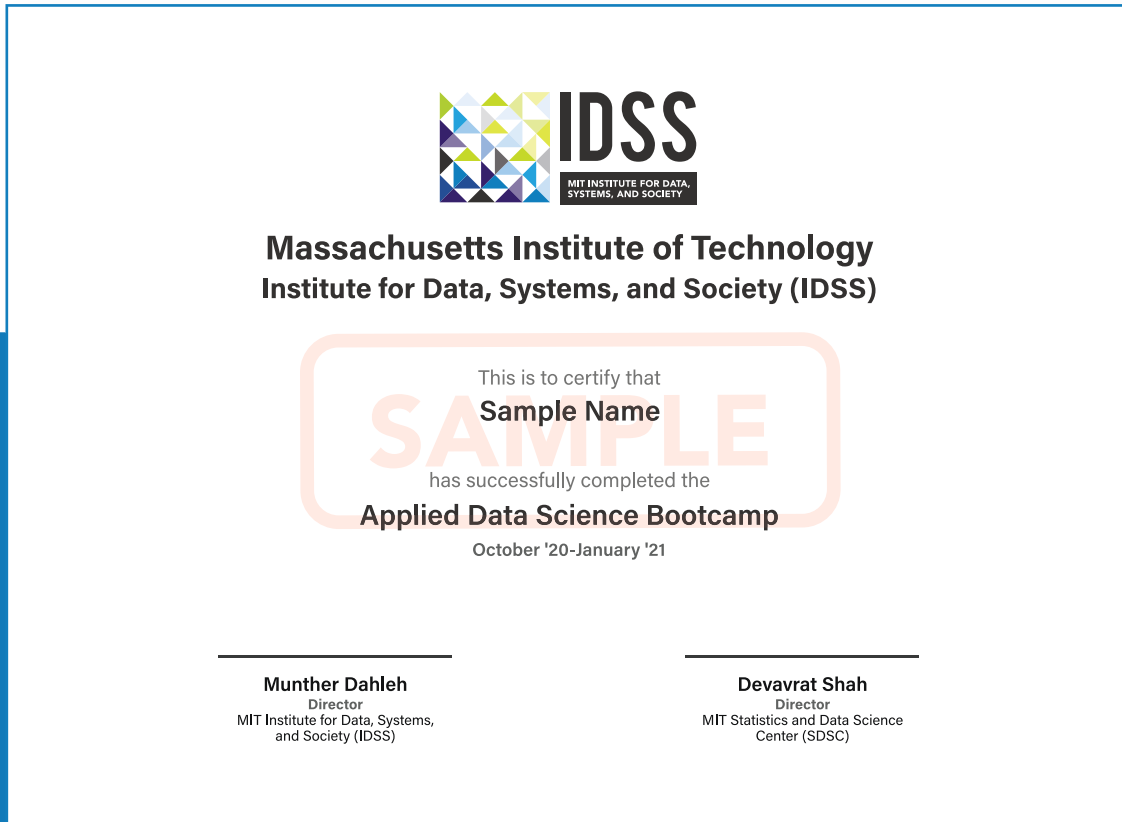
Senior Research Scientist,
Genome Institute of Singapore
(GIS)

Program Manager: Your Personal Guide

Your dedicated Program Manager will be your single point of contact for all academic and non-academic queries in the program. They will keep track of your learning journey, give you personalized feedback, and the required nudges to ensure your success.



Certificate



The image is for illustrative purposes only. The actual certificate may be subject to change at the discretion of the university.

Admissions process

➤ Step-1

Application Form

Register by filling up the online application form.

➤ Step-2

Application Screening

The admissions team will review your application to determine your fit with the program.

➤ Step-3

Join the Program

If selected, you will receive an admission offer for the upcoming cohort. Secure your seat by paying the fee.

Admission & Fee Details

Program Duration: **12 weeks**

Fees: **USD 2,600**

Start Date: **October 19, 2020**

Prerequisites: **Basic knowledge of Computer Programming and Statistics.**



Great Learning is an ed-tech platform with a mission to make professionals proficient and future-ready. Its programs always focus on the next frontier of growth in the industry and currently straddle across Analytics, Data Science, Big Data, Machine Learning, Artificial Intelligence, Deep Learning, Cloud Computing and more. Great Learning uses technology, high-quality content, and industry collaborations to deliver an immersive learning experience that helps candidates learn, apply, and demonstrate their competencies. All programs are offered in collaboration with leading global universities and are taken by thousands of professionals every year from 85+ countries.



Ready to become a data-driven decision maker?

APPLY NOW

Contact Us



+1 617 468 7899 / +91 9606 053 237



adsb.mit@mygreatlearning.com



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