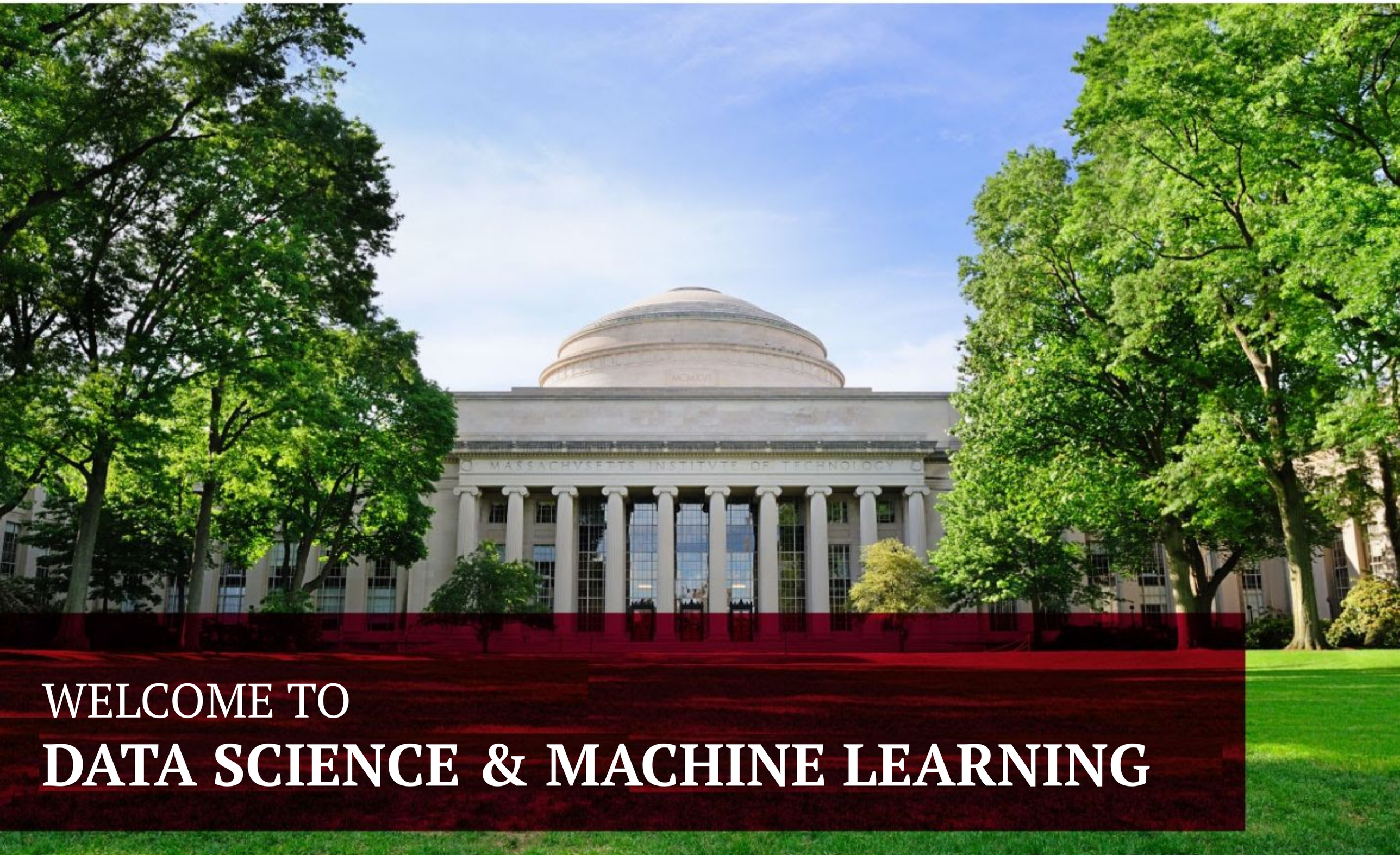
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

IDSS
MIT INSTITUTE FOR DATA, SYSTEMS, AND SOCIETY

Great Learning
POWER AHEAD



WELCOME TO

DATA SCIENCE & MACHINE LEARNING

Some guidelines

Listen-only mode

Type your questions in Q&A box

Ask questions which are in the interest of the larger audience

Agenda

- DSML program vision
- Learning philosophy
- About MIT-IDSS & Great Learning
- Program details
- Q&A

DATA SCIENCE &
MACHINE LEARNING

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Program Managers

Twinkle Khanna
September 2022 - A

Sarah Jaiswal
September 2022 - B

Sandhya Murthy
September 2022 - C

DATA SCIENCE &
MACHINE LEARNING

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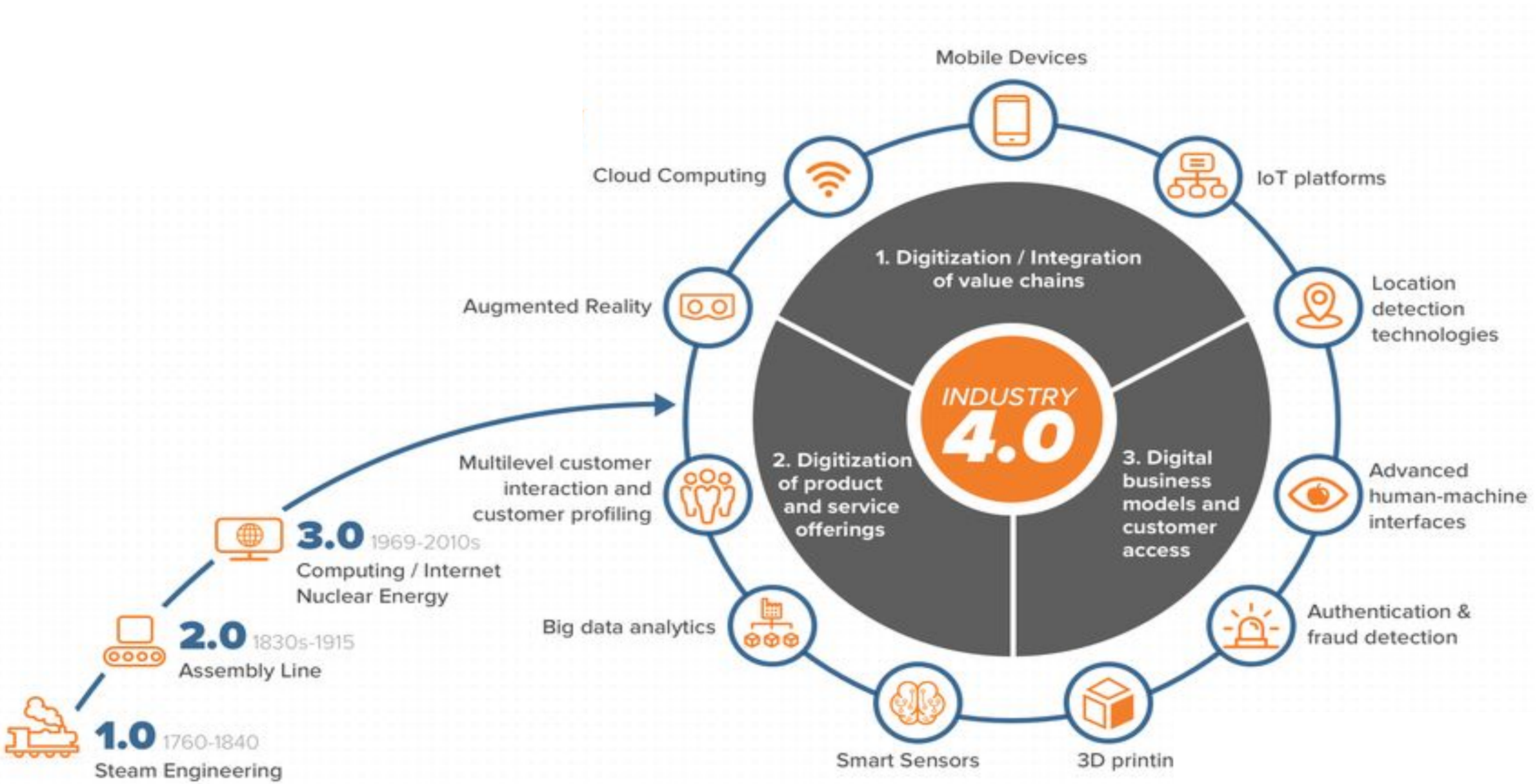
DSML September 22 Cohort

450+ Learners

55 Countries

20+ Industries

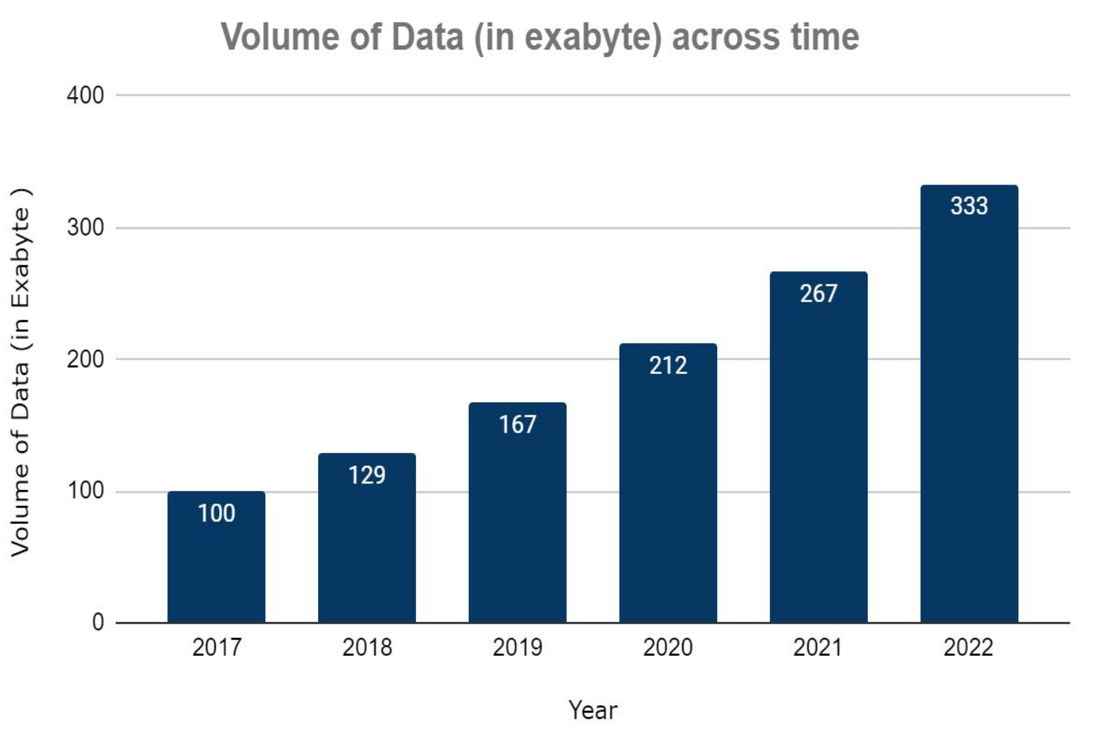
Why Data Science & Machine Learning?



Source : https://shockoe.com/ideas/underst&ing-impacts-fourth-industrial-revolution/

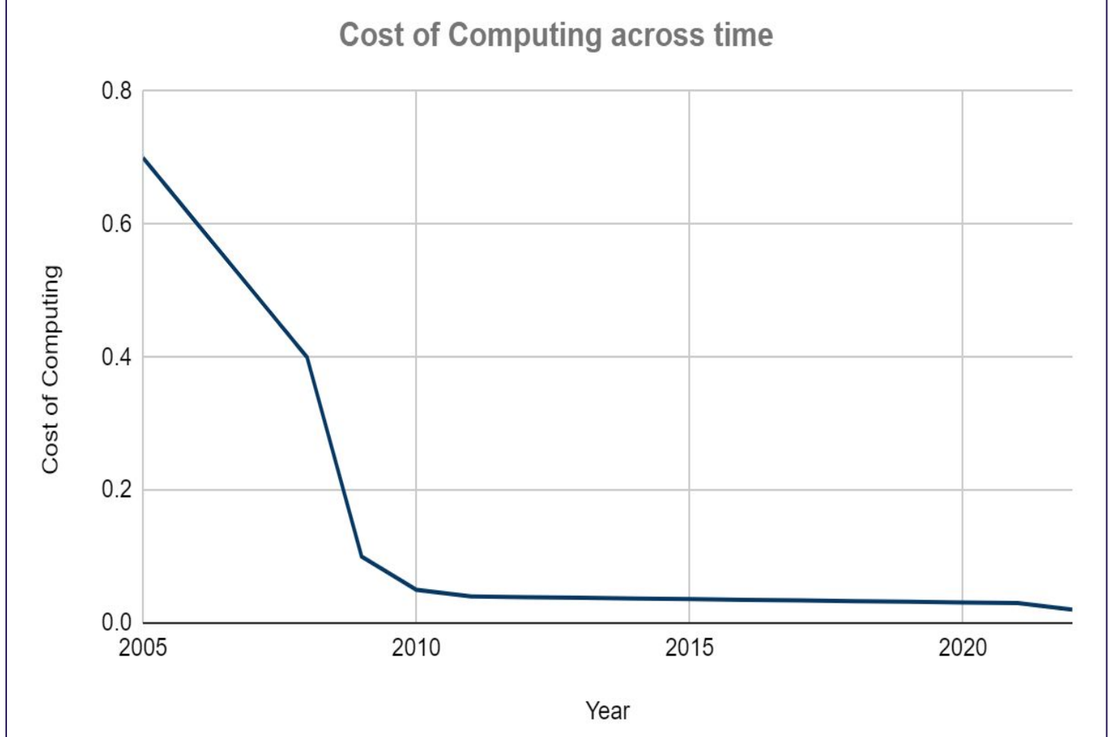
What is driving this?

Amount of data being generated



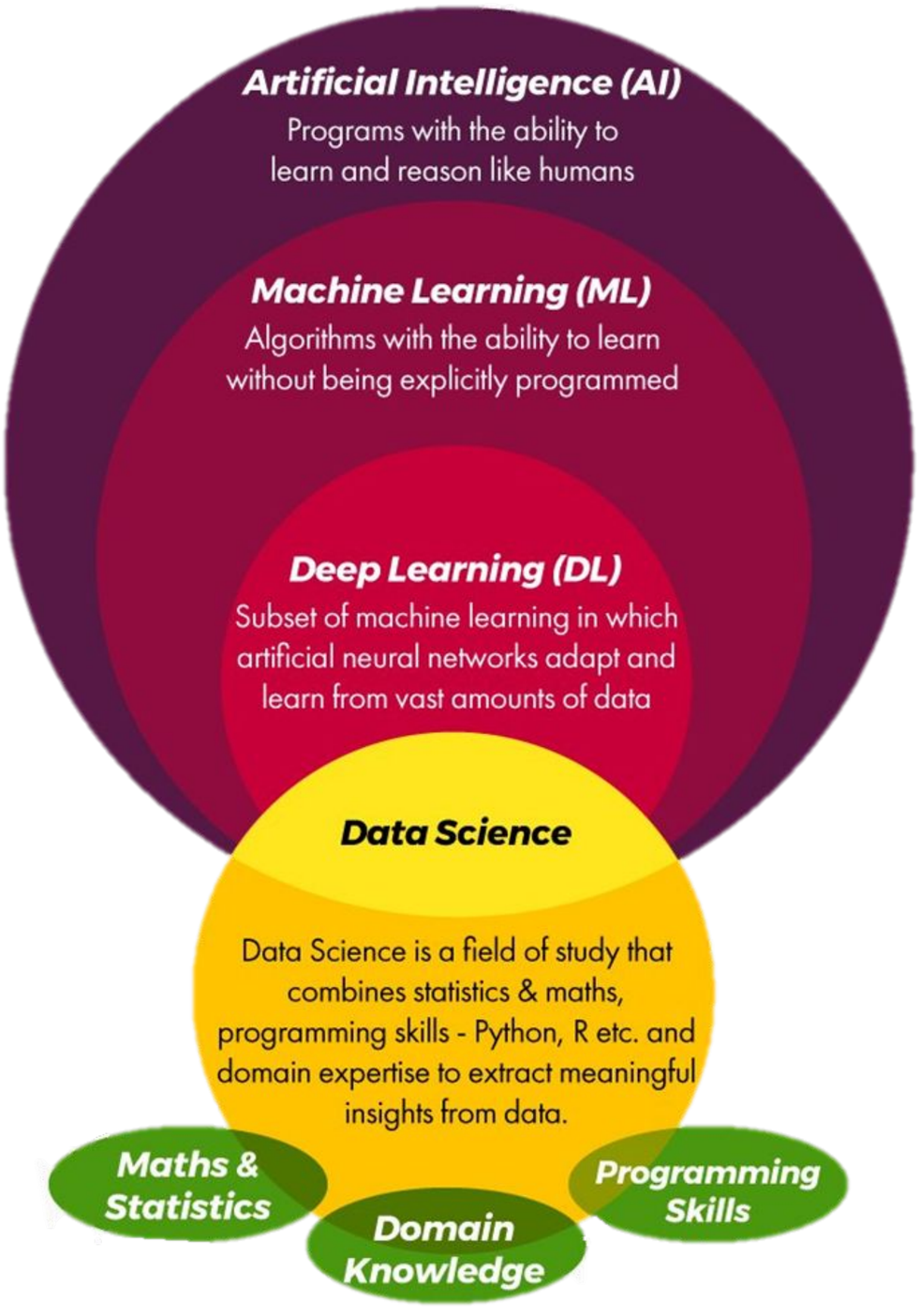
Source:
https://www.statista.com/statistics/267202/global-data-volume-of-consumer-ip-traffic/

Cost of computing resources



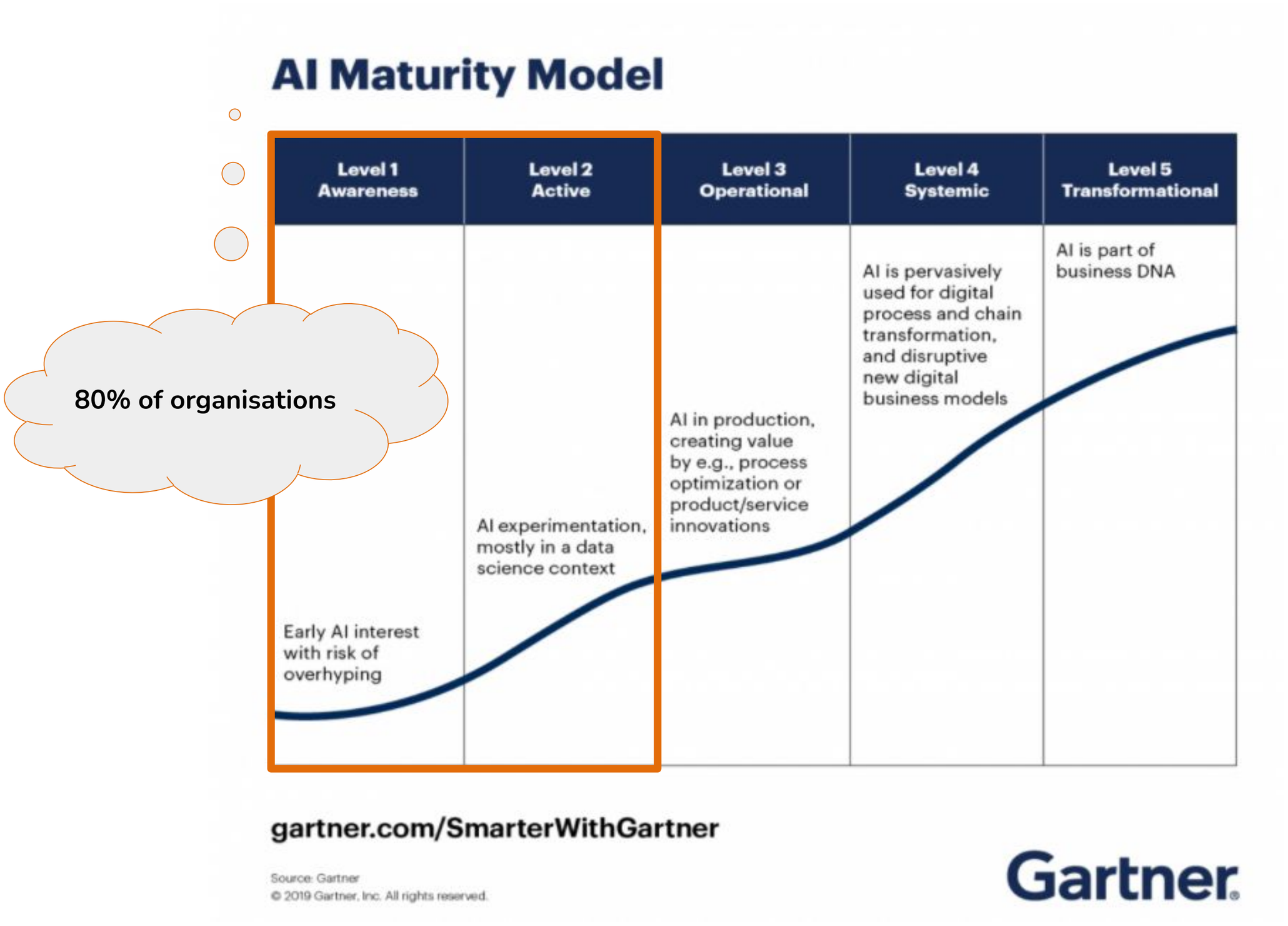
Source:
https://cmte.ieee.org/futuredirections/2017/10/18/a-never-ending-decrease-of-technology-cost/

Key definitions

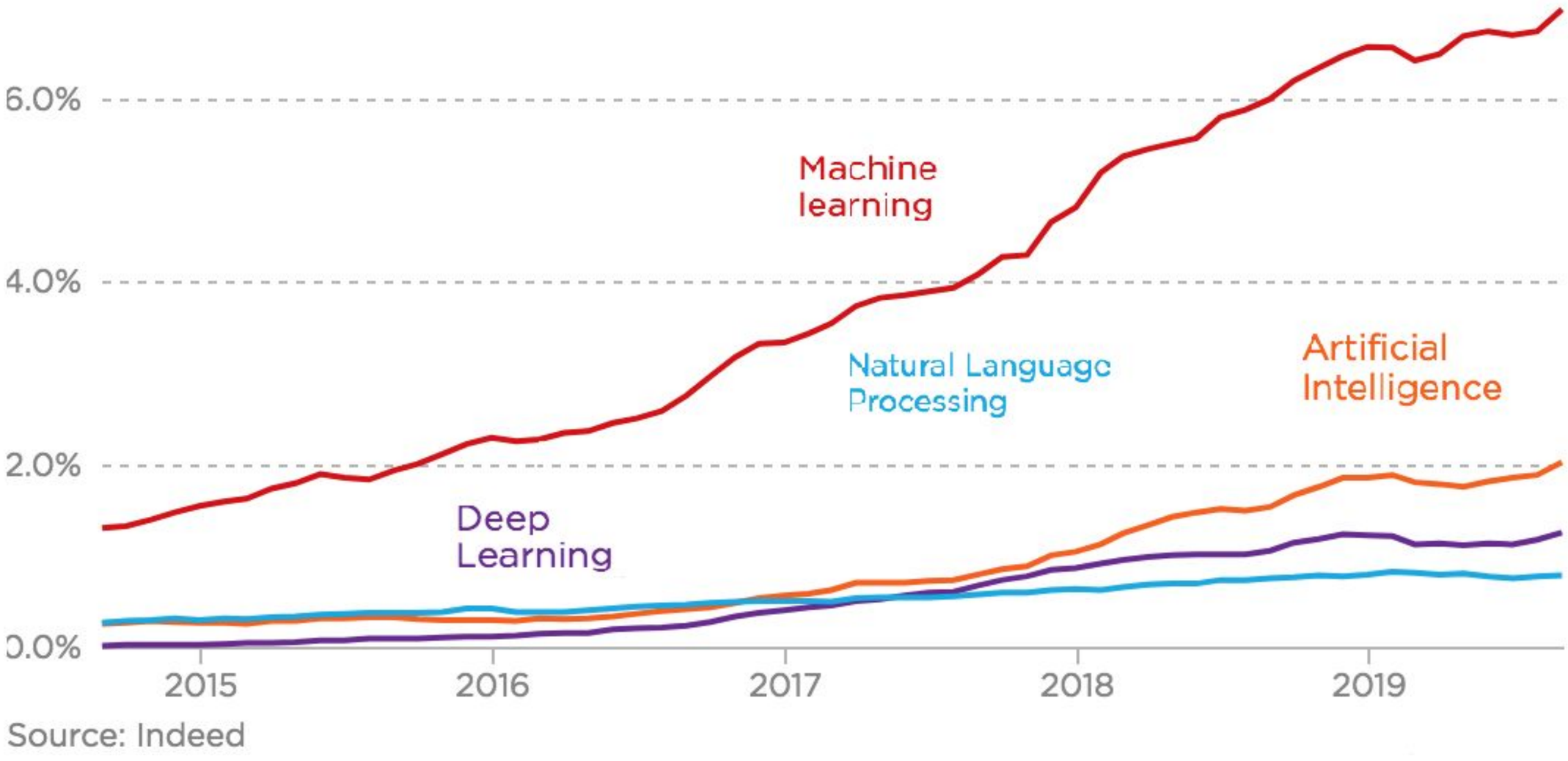


What you need to focus on

How mature is the AI in your organization?

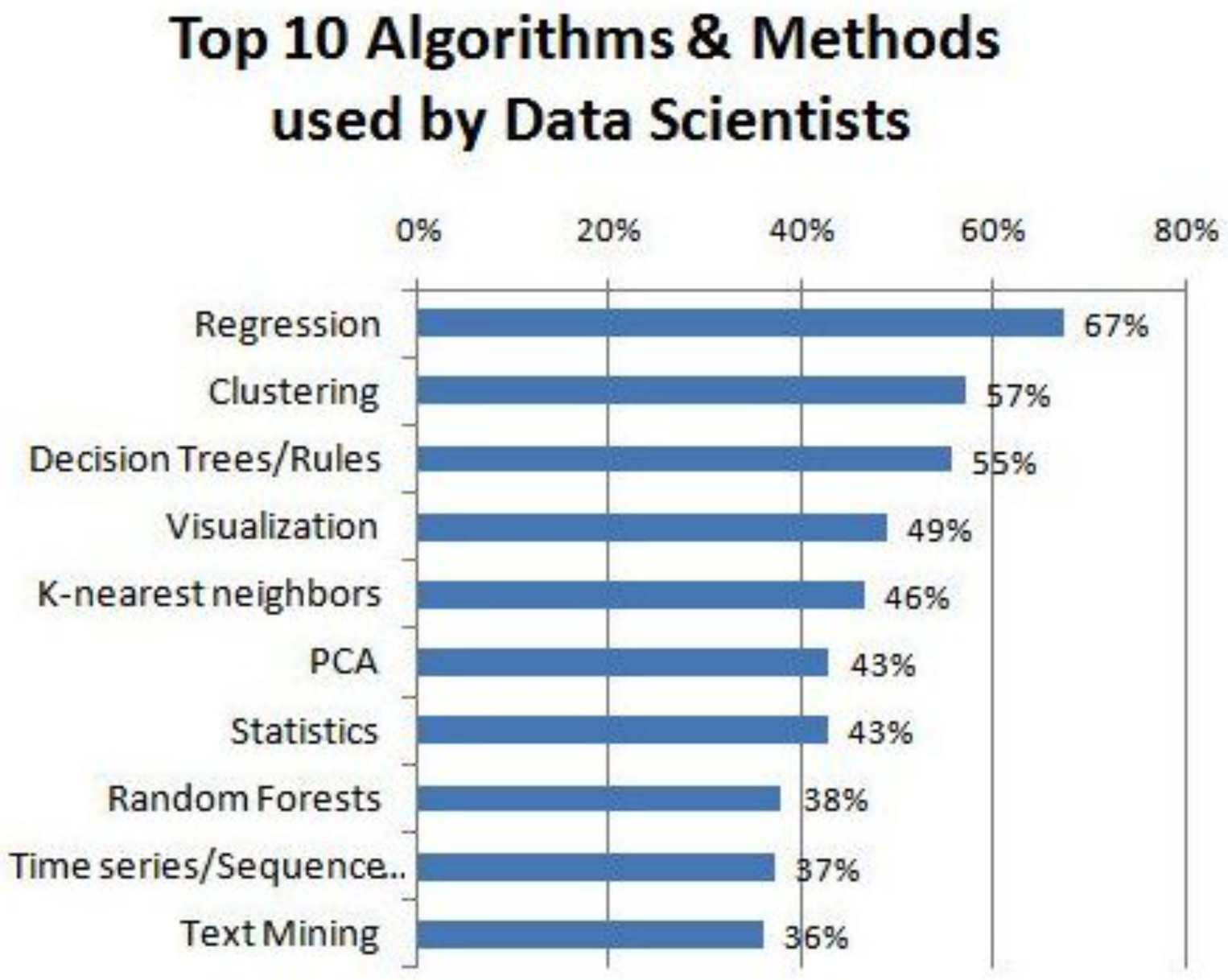


Understand the skills your firm needs

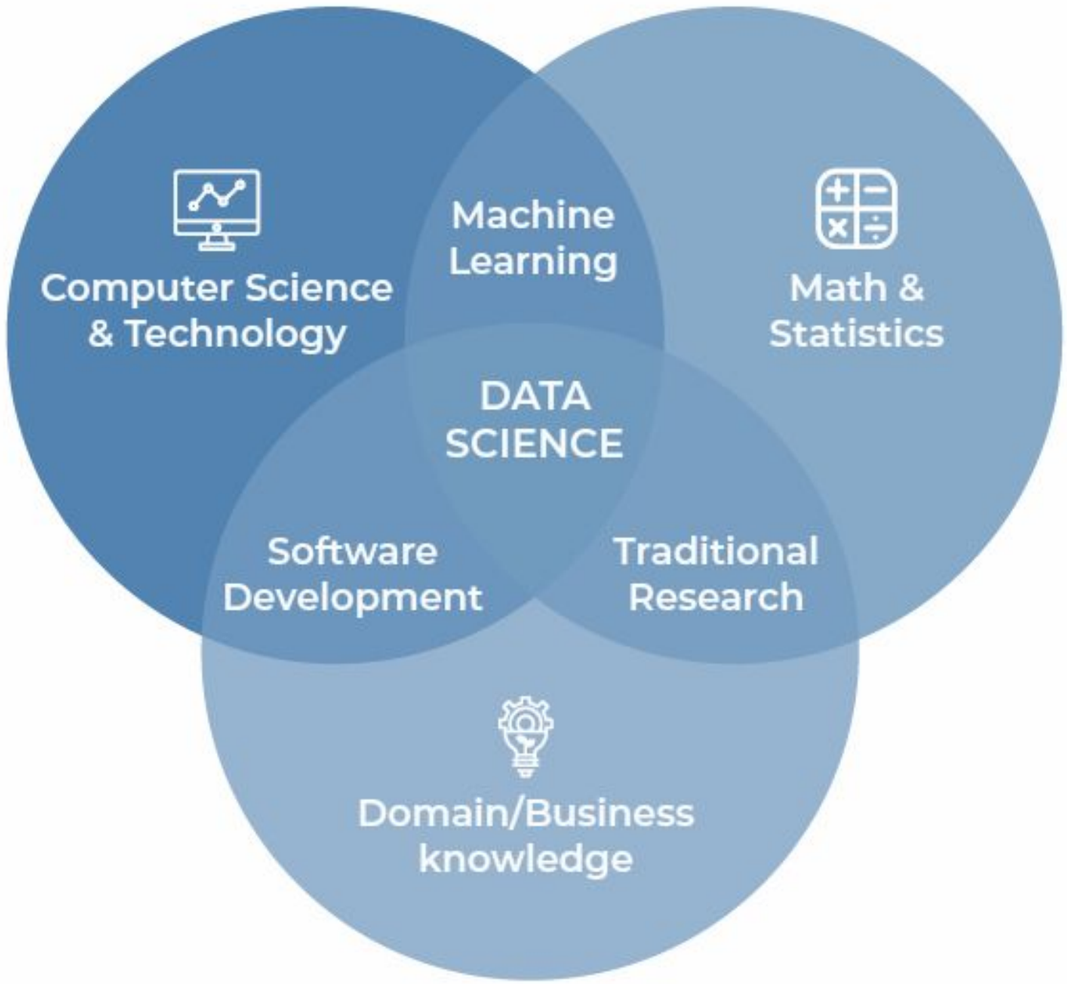


Source: Indeed

Focus on fundamentals



Foundational Skills to success in ‘new era’



+ PROBLEM SOLVING + COMMUNICATION

Data Science & Machine Learning (DSML) - Vision

Future focused professional skills

Data Science Methods, Techniques & Algorithms

Mathematical / Conceptual Foundations

Problem Solving & Interpretations

Industry Perspective

Key Learning Outcomes

Strong foundations in data science techniques & algorithms

1

Understanding of the contemporary approaches & work in data science field

2

Exposure to business problems solving using the right set of techniques/algorithms

3

Who is this program for?

- Working professionals, from early career professionals to senior managers who are interested in a career in Data Science & Machine Learning

- Working professionals interested in leading Data Science & Machine Learning initiatives at their companies

- Entrepreneurs interested in innovation using Data Science & Machine Learning

- Tech professionals with exposure to data will have an edge however, if you do not have technical background or exposure to data, you will have to put extra efforts to take advantage of the MIT program

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Program Structure

Foundations of Data Science

- ★ Python
- ★ Statistics

Make Sense of Unstructured Data

- ★ Introduction
- ★ Clustering
- ★ Spectral Clusterings, Components & Embeddings

Regression & Prediction

- ★ Classical Linear & Non Linear Regression
- ★ Modern Regression with high dimensional data
- ★ Use of modern regression for causal inference

Classification & Hypothesis Testing

- ★ Logistic Regression
- ★ Support Vector Machines
- ★ Confidence Intervals

Deep Learning

- ★ Image classification
- ★ Perceptrons
- ★ Deep neural nets

Recommendation Systems

- ★ Recommendation & Ranking
- ★ Collaborative Filtering
- ★ Personalized Recommendations

Networking & Graphical Models

- ★ Introduction
- ★ Networks
- ★ Graphical Models

Predictive Analytics (Self-paced)

- ★ Predictive Modeling for temporal data
- ★ Feature Engineering

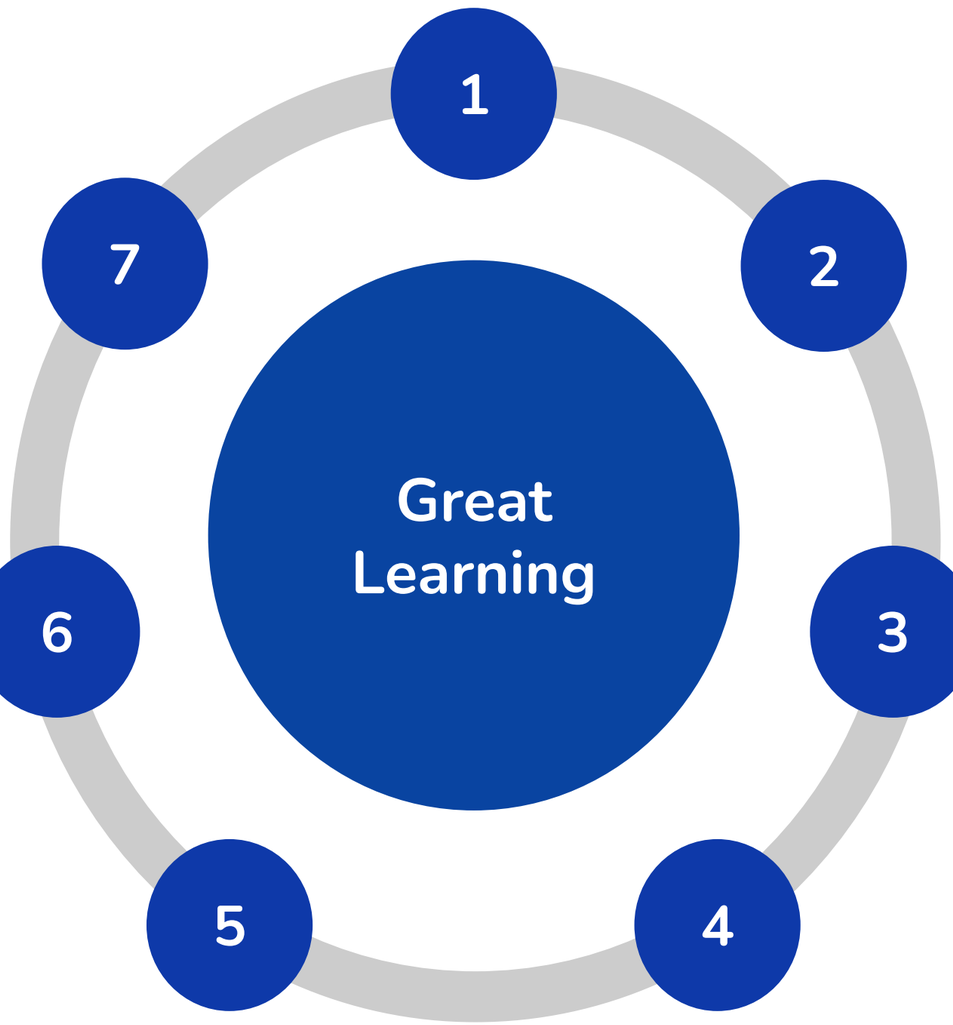
Collaboration: MIT & Great Learning

- Academic Collaborator
  - Curriculum & content design
  - Recorded Video lectures
  - Case studies / Projects
  - Certificate

- Delivery Collaborator
  - Mentored learning
  - Learning management system
  - Program Manager
  - Academic support

About Great Learning

Established in
2013



20+ Mn hours of learning

25k+ Working professionals

Established track record of **program completion**

2000+ gurus, Mentors & Academicians

Olympus, our in-house proprietary LMS

Continuous **Innovation** & **Improvements**

The Learning Philosophy

- Have a clear learning path that is well-structured, as well as comprehensive
- Access to content from credible academic faculty
- Learning by doing - practice case studies with actual problem-solving
- Have access to a mentor who can clarify doubts & provide industry perspective
- Be tested frequently & get personalized feedback to be aware of the progress
- Have a support available during tough times
- Have access to peers to network

Approach to learning

Traditional Classroom

- Instructor prepares material to be delivered in class
- Learners listens to lecture in-class, and other guided instructions and takes notes
- Homework and assignments to demonstrate learning

Flipped Classroom

- Instructor records and shares lecture outside of class
- Recorded Lectures and content to be watched before the session
- **In-class l**earning includes applied learning and **higher order thinking tasks**
- Support through peers and Mentor

Program features

8 learning weeks
3 learning breaks
1 Self-paced modules

Recorded video lectures by MIT faculty

3 Projects where you apply your learnings from the course to actual data sets

Case studies
Hackathon

Mentored learning sessions by the industry experts

- Case study discussions
- Doubt clarification by mentors
- Industry knowledge

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DSML September 2022 Delivery Schedule

Course	Topic	Content Release Date	Assessment Deadline	Weekend Starting (Sat)	Mentored Learning Session
Prework	Python Programming and Basic Statistics & Probability	Available on enrollment			
Foundations of Data Science	Python for Data Science	15-Sep-2022	25-Sep-2022	24-Sep-2022	Yes
	Statistics for Data Science	22-Sep-2022	2-Oct-2022	1-Oct-2022	Yes
	Project 1	22-Sep-2022	2-Oct-2022	-	
	Learning Break			*8-Oct-2022*	
Making Sense of Unstructured Data	Introduction, Clustering, Spectral Clustering, Components, and Embeddings	6-Oct-2022	16-Oct-2022	15-Oct-2022	Yes
	Learning Break w/ Hands-on Masterclass 1			*22-Oct-2022*	
Regression and Prediction	Classical Linear and Nonlinear Regression and Extensions, Modern Regression with High-Dimensional Data, The Use of Modern Regression for Causal Inference	20-Oct-2022	30-Oct-2022	29-Oct-2022	Yes
	Learning Break w/ Hands-on Masterclass 2			*5-Nov-2022*	
Classification and Hypothesis Testing	Hypothesis Testing and Classification	27-Oct-2022	13-Nov-2022	12-Nov-2022	Yes
	Project 2	27-Oct-2022	13-Nov-2022		
	Learning Break w/ Hands-on Masterclass 3 *Thanks Giving Weekend - Holiday*			*19-Nov-2022* *26-Nov-2022*	
Deep Learning	Deep Learning	17-Nov-2022	4-Dec-2022	3-Dec-2022	Yes
Recommendation Systems	Recommendations and Ranking, Collaborative Filtering, Personalized Recommendations	24-Nov-2022	11-Dec-2022	10-Dec-2022	Yes
	Project 3	24-Nov-2022	11-Dec-2022		
Networking and Graphical Models	Introduction, Networks, Graphical Models	1-Dec-2022	-	17-Dec-2022	Optional Masterclass
Self-paced Modules					
Predictive Analytics	Predictive Modeling for Temporal Data, Feature Engineering	8-Dec-2022	-	18-Dec-2022	Optional Masterclass
	Hackathon	**6-Jan-2023**	**7-Jan-2023**	**NA**	

Note:
The schedule is subject to change based on any improvements in the program structure or the availability of the mentor.
Assessment here means either a Quiz or a Project.
Mentored learning sessions and additional sessions will either happen on a Saturday or a Sunday on the weekend.

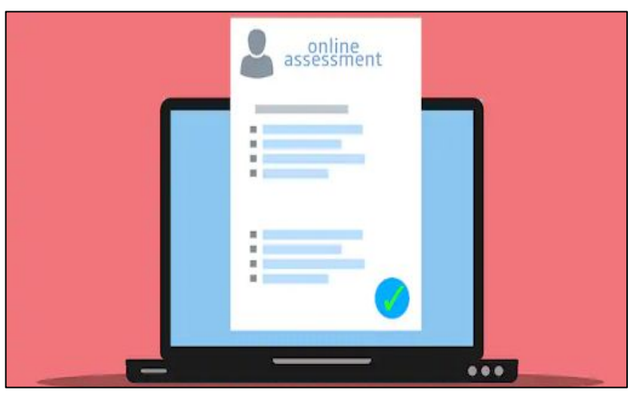
Weekly Operating Rhythm

Weekdays (Monday - Friday)

- Pre-reads
- 2-3 hours Recorded faculty video lectures
- Practice exercises

Weekends (Saturday - Sunday)

- Mentored learning session
- Hands-On Master class during learning break
- Optional Masterclass for the self-paced module



Assessment

- Weekly course assessments
- Projects with weekly deadlines in 3 courses

Assessments are weekly

In order to be eligible for the certificate, you will have to complete all courses with minimum of 60% marks in each course.

Weekly Course Assessment

- 7 deadline driven Course assessment
- 1 assessment per week

Projects

- 3 deadline driven projects
- 1 project each in the following course: Foundations of Data Science, Classification and Hypothesis Testing & Recommendation Systems

***Assessments in every course carry 90% weightage**

***Attendance of the mentored learning sessions carries 10% weightage**

Mentored Learning Session Structure

8-10 mins — Mentors gauge the **level of understanding** of learners & identify areas to focus on

45 - 55 mins — Clarification **of doubts** on concepts/learning from the course of the week

45 - 55 mins — **Case Study** discussion during the session

15 - 25 mins — **Industry Perspective** through additional Q&A

2 - 5 mins — **Summarize** the Session

Q&A & Industry Perspective

Can run throughout the session as it is meant to be an interactive one

Mentored Learning Groups

- ~20 learners in a group
- Factors:
    - Geography and your time zone
    - Profile - Programming experience/Work experience
    - Academic Background
    - Mentor availability
- Either Saturday or Sunday

Timings will be communicated in the coming week

Additional Webinar Sessions

Hands-On Masterclass:

- Focus on implementation of the conceptual knowledge gained in the previous week towards solving a problem based on real-world data.
- Focus on the practical application through case studies for the topics of the previous week, these sessions further clarify the content from a programming perspective.
- 3 Hands-on masterclasses on the following topics: Making Sense of Unstructured Data, Regression & Prediction, and Classification & Hypothesis Testing
- 2-hour session in a webinar format, dedicated to exploring the application of these concepts to a hands-on business case study
- Conducted by an industry expert for the cohort in a Masterclass format
- Attendance doesn’t carry weightage in the marks for the course.

Learning Support Ecosystem

Olympus

- You can raise support request through Olympus
- All queries are responded to within 24-48 hours
- All program announcements show as notifications

WhatsApp

- Peer learning through groups & discussion forums
- Ad-hoc communications from Program Office

Program Manager

- Direct call or text
- Available during office hours
- Single POC for all support from the ecosystem

Program Office Email

- Prefered mode for candidature change actions
- Onboarding & post program communications
  (office.dsml.mit@mygreatlearning.com)

Faculty

Mentors

Peer Group

Program Manager

Academic Assistance

GL Community

How to learn more effectively?

Commit to the journey

- 8-12 hours per week
- Follow the weekly operating rhythm
- Attend the mentored learning sessions
- Respect Assessments

Make the most of the content

- Take detailed notes of videos
- Raise support queries on Olympus wherever you need help
- Go through all the additional reading materials shared

Prepare well for all sessions

- Go through the weekly content before the sessions

Practice, Discuss, Repeat

- Go through the case studies & practice them
- Discuss with peers & mentor
- Read, explore & concretize

Give us a lot of feedback

- Be ***Descriptive*** – Take the time to detail your feedback
- Be ***Constructive*** – How can your learning be improved?
- Be ***Specific*** – Use instances, examples, etc.
- Be ***Realistic*** – We are balancing the whole class' needs

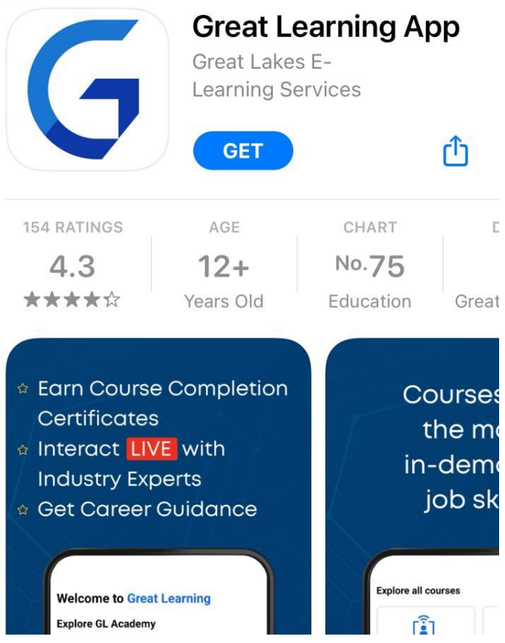
CALL OUT >> WE ASK FOR A LOT OF FEEDBACK

These are discussed in the leadership meetings

Tools & Technology

olympus.mygreatlearning.com

Great Learning App



Online Sessions

Resume and LinkedIn Profile Review

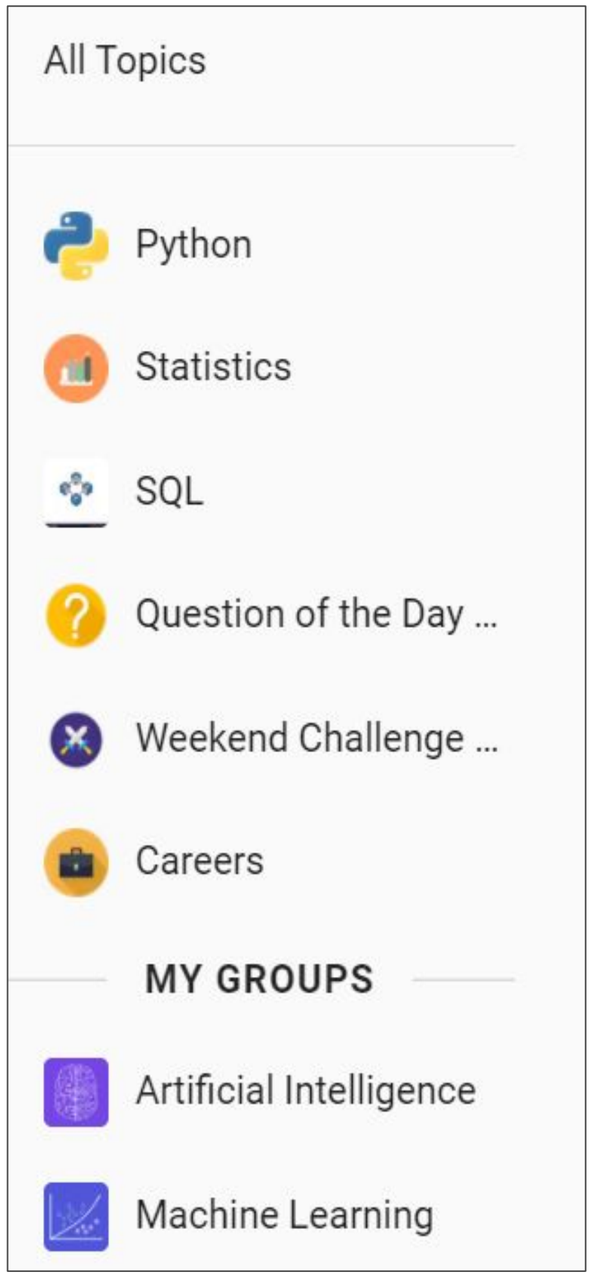
Present yourself in the best light through a profile that showcases your strengths:

- Feedback from experts to make your resume and LinkedIn profiles stand out from the crowd.
- Tips on customizing your resume for the job profile you are applying to.

GL Community

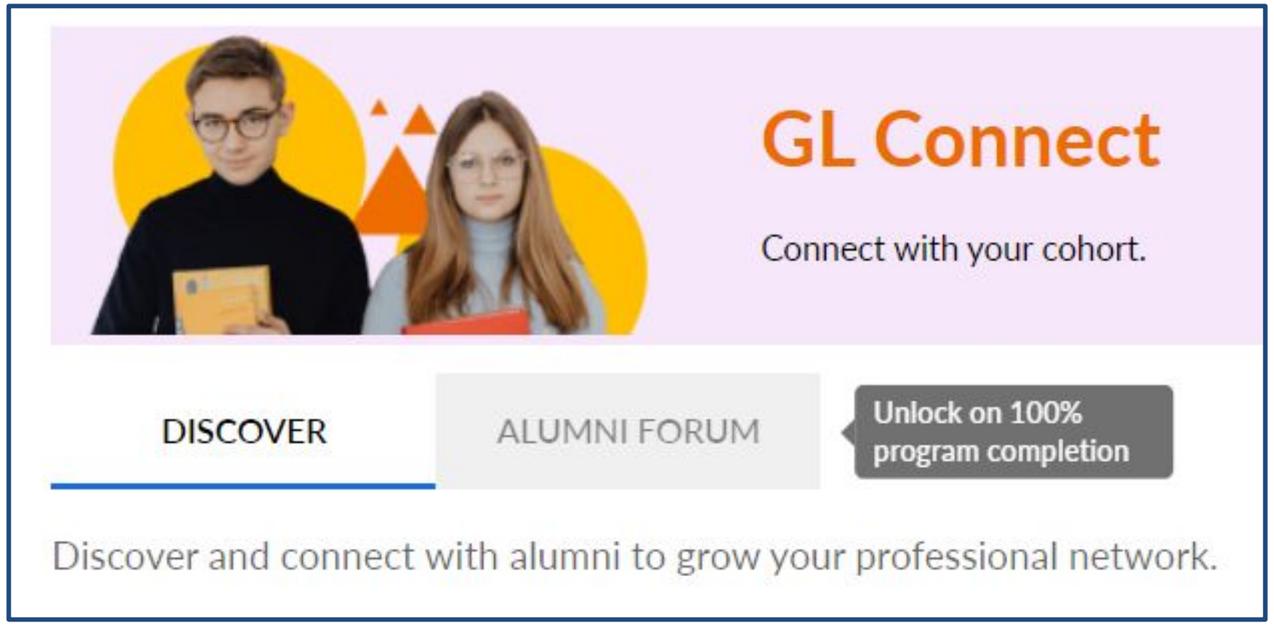
- GL Community is our peer connectivity Platform with over **10,000 members**
- Browse through the Topics and groups and be in sync with the latest developments in the industry even after you graduate.

- **Ask Questions**, Start a Discussion or Write a Blog
- **Practice** your skills by answering Questions on the platform and Get help in understanding technical concepts and debugging issues
- **Engage**, learn and connect with your peers and experts



GL Connect

GL Connect is where you can message and connect with your cohort's learners.



Next Steps

Login to Olympus - olympus.mygreatlearning.com

- Complete your profile on Olympus
  (Name, linkedIn profile, contact details)
- Update your time zone on Olympus

Go through the following courses

- Pre-work
- Foundations of Data Science

- **Join the first mentored learning session on the weekend of September 24th/25th *(Link will be available next week under UPCOMING/ONGOING Activities on dashboard)***

- **Submit the weekly quiz before the deadline & in case of any questions, kindly raise a support request on Olympus through the 'Need Assistance' option**

Any Questions?

Thank You

We'd love to hear your feedback!

Please share your feedback for the Orientation session

Wish you all the very best!

Please feel free to raise a support request through Olympus