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Data-Powered Upskilling

August 28, 2019

coursera for Business

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for Business

Data-Powered Upskilling

Understanding which skills employees have now, which skills are critical for the future, and how to most efficiently close the gap are among the most daunting challenges for any organization. Hear from Coursera data science leaders on how they are using their machine learning-powered Skills Graph to answer these questions for customers and learners alike, and identify ways to prepare your workforce for the future with a skills-first strategy powered by data-driven insights.

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Agenda

August 28, 2019
10:00am PDT

Vinod B
Senior Data Scientist

Kyle Clark
Enterprise Content Strategist

What is Coursera for Business?

Identifying the Skills of Tomorrow

- Insights from the Global Skills Index 2019

What are the Skills of Tomorrow?

- The Coursera approach to understanding skills
- The Essential Skills Map for Digital Transformation

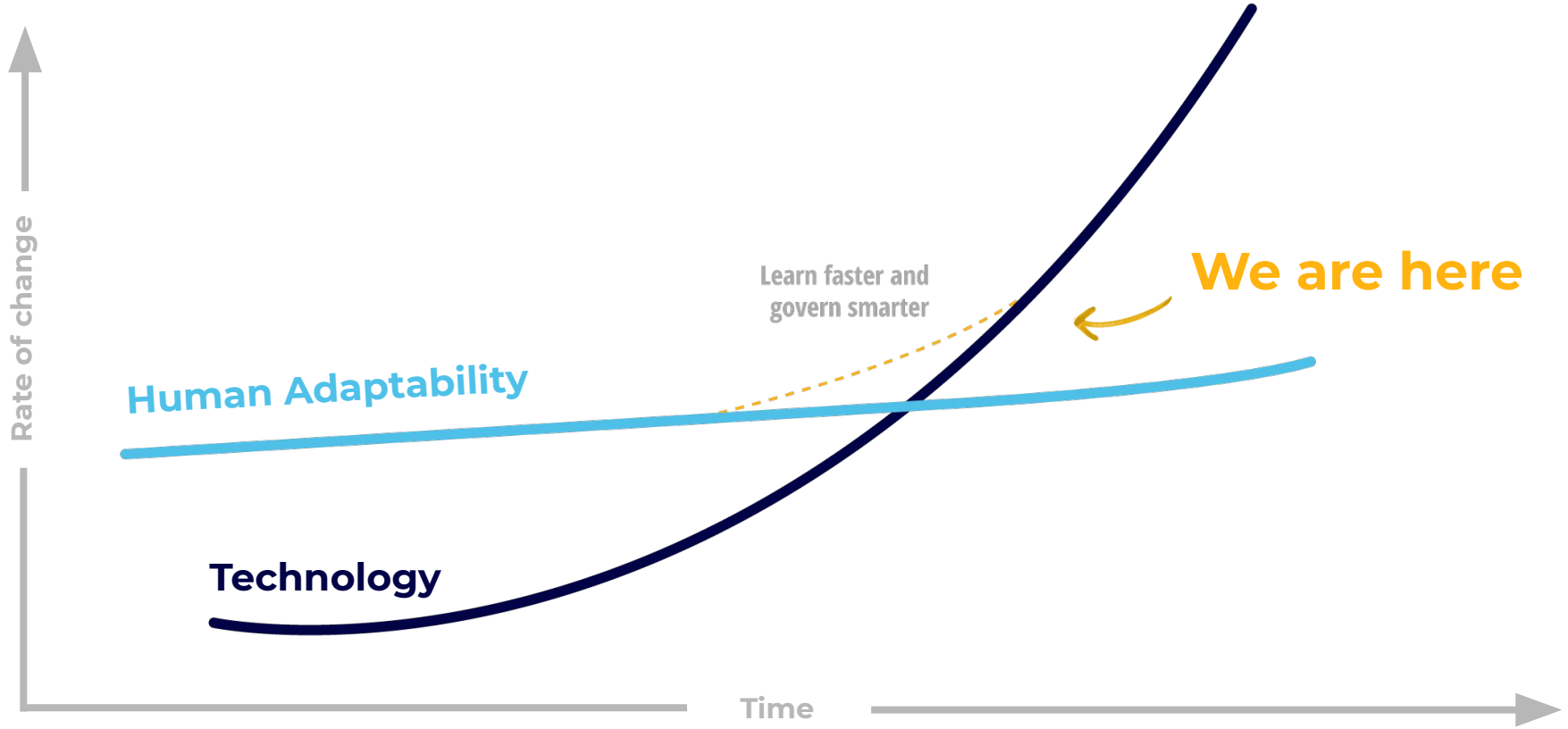
How to develop those skills?

- Best practices for talent transformation
- Examples

Q&A

What is Coursera for Business?

Technological change is outpacing humanity



Source: Thank You for Being Late, Thomas Friedman

This is what we are hearing from business leaders:

"Digital business models are **taking over** our industry."

"We can't hire enough **data scientists**. And we need to build fluency in **emerging tech**."

"What are the **most relevant skills** right now?"

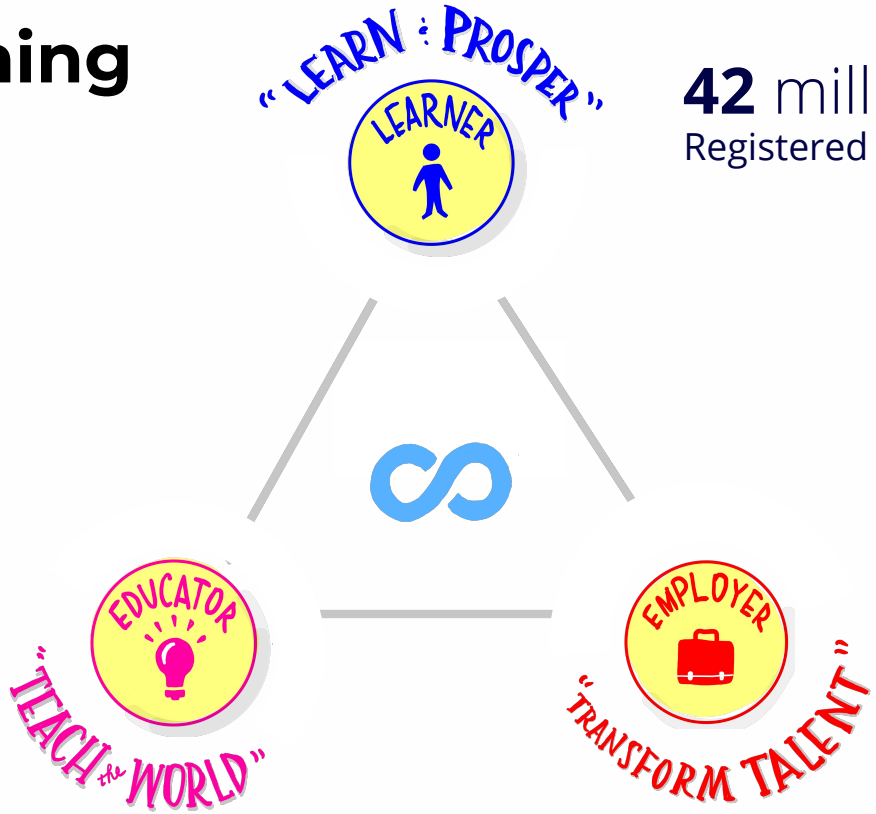
What you need to **drive true talent transformation**

Data to identify **skills trends** & gaps

Access to the **world's top knowledge base**

A learning platform that drives **mastery-level learning**

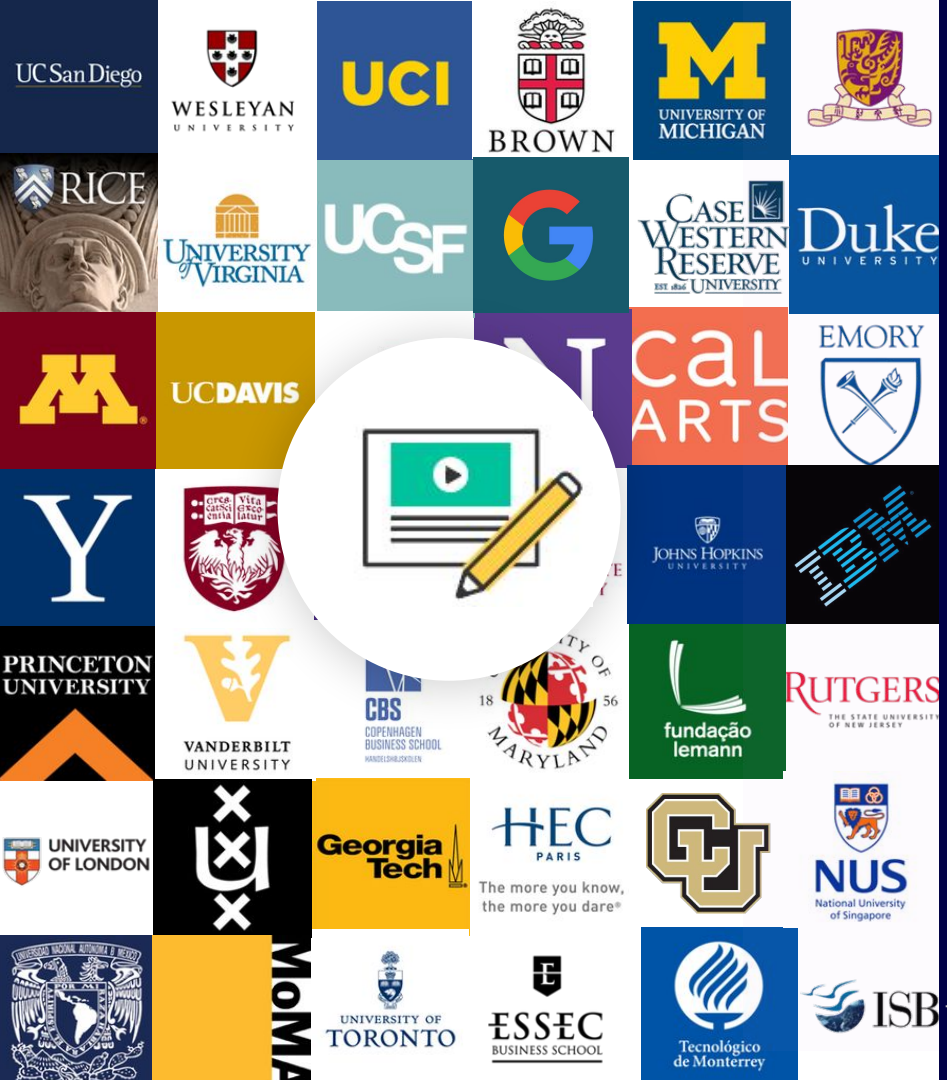
A platform for **global learning**



42 million
Registered learners

190
University and industry partners

1,900+
Businesses, Governments, Educators



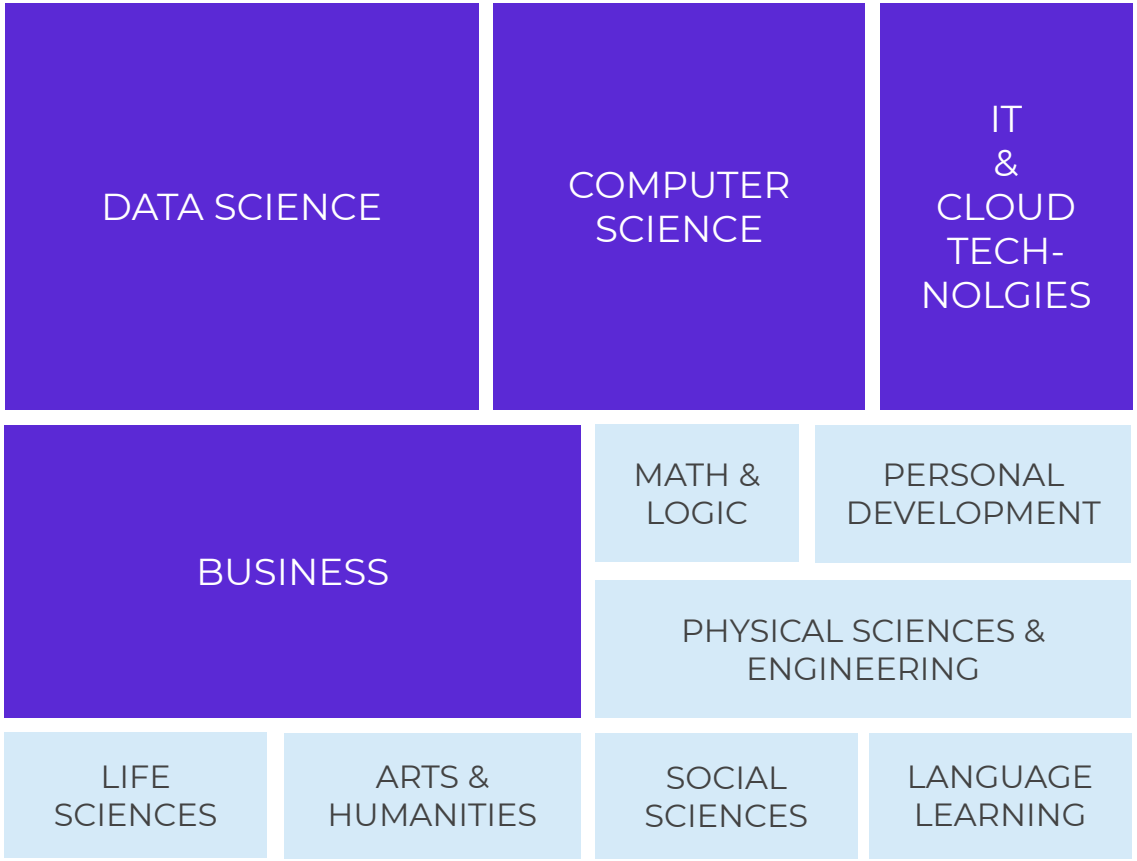
The world's best knowledge base

Transformational content **across domains**

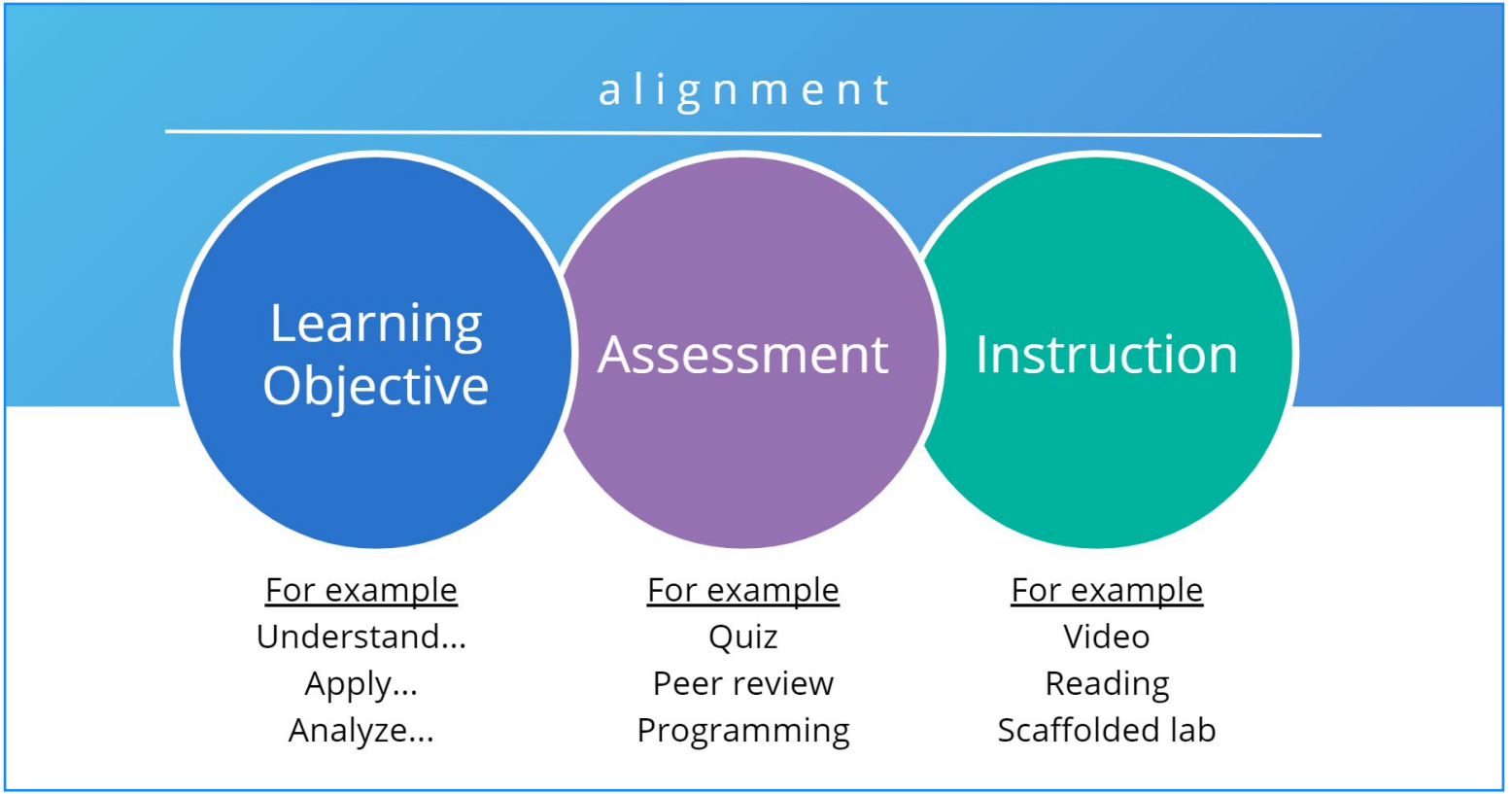
3,300+ courses in 11 domains

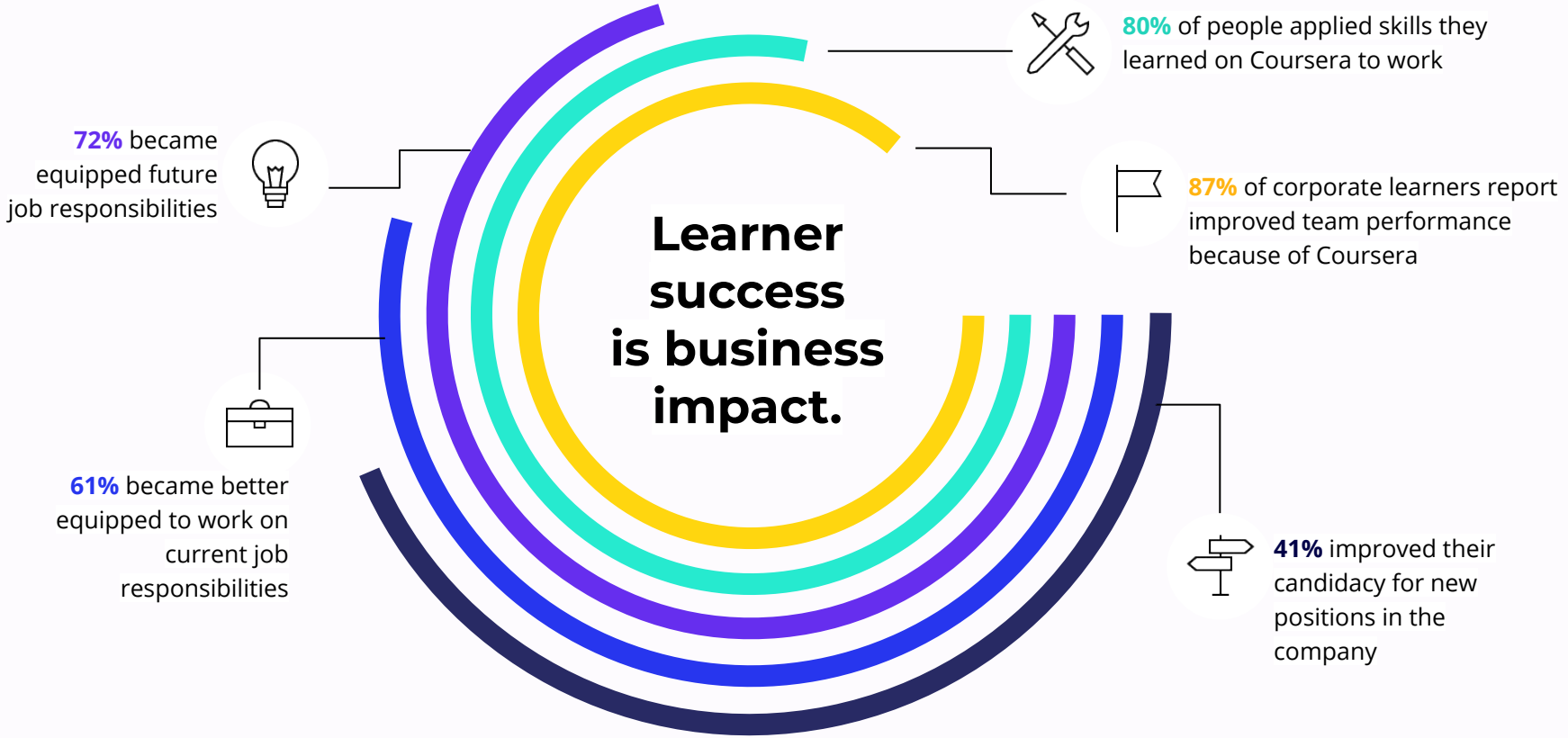
70+ new courses each month

Dedicated **content management team**



Mastery Learning

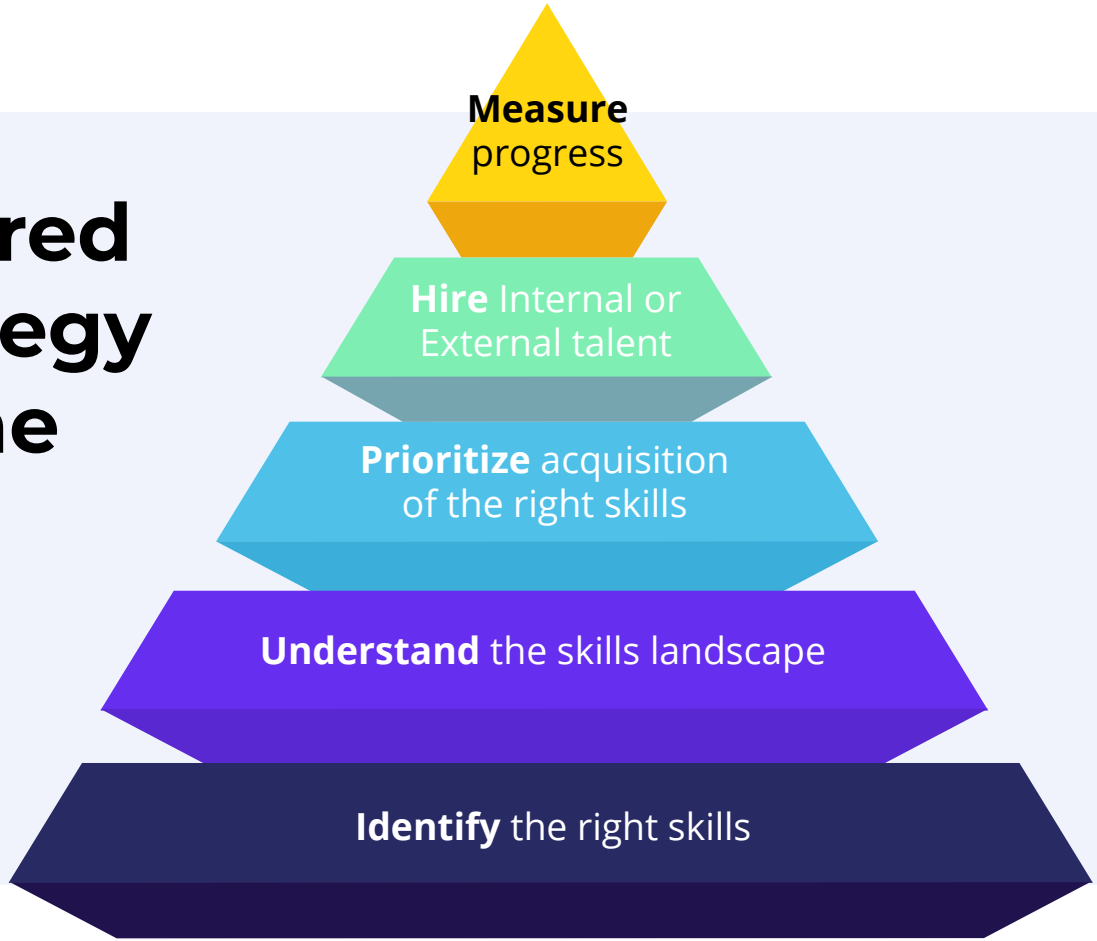




Sources: Enterprise Learning Survey 2018

Identifying the Skills of Tomorrow

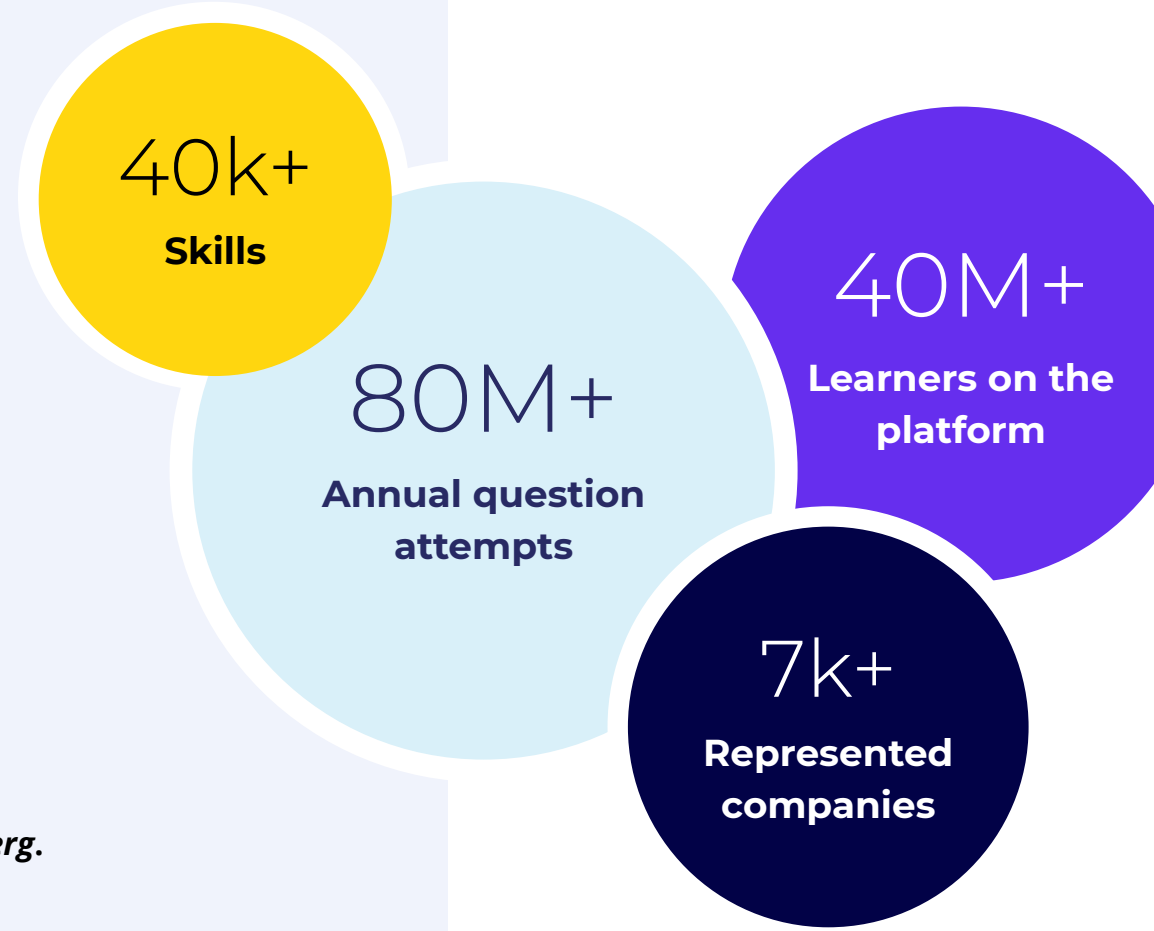
Data-powered talent strategy for everyone



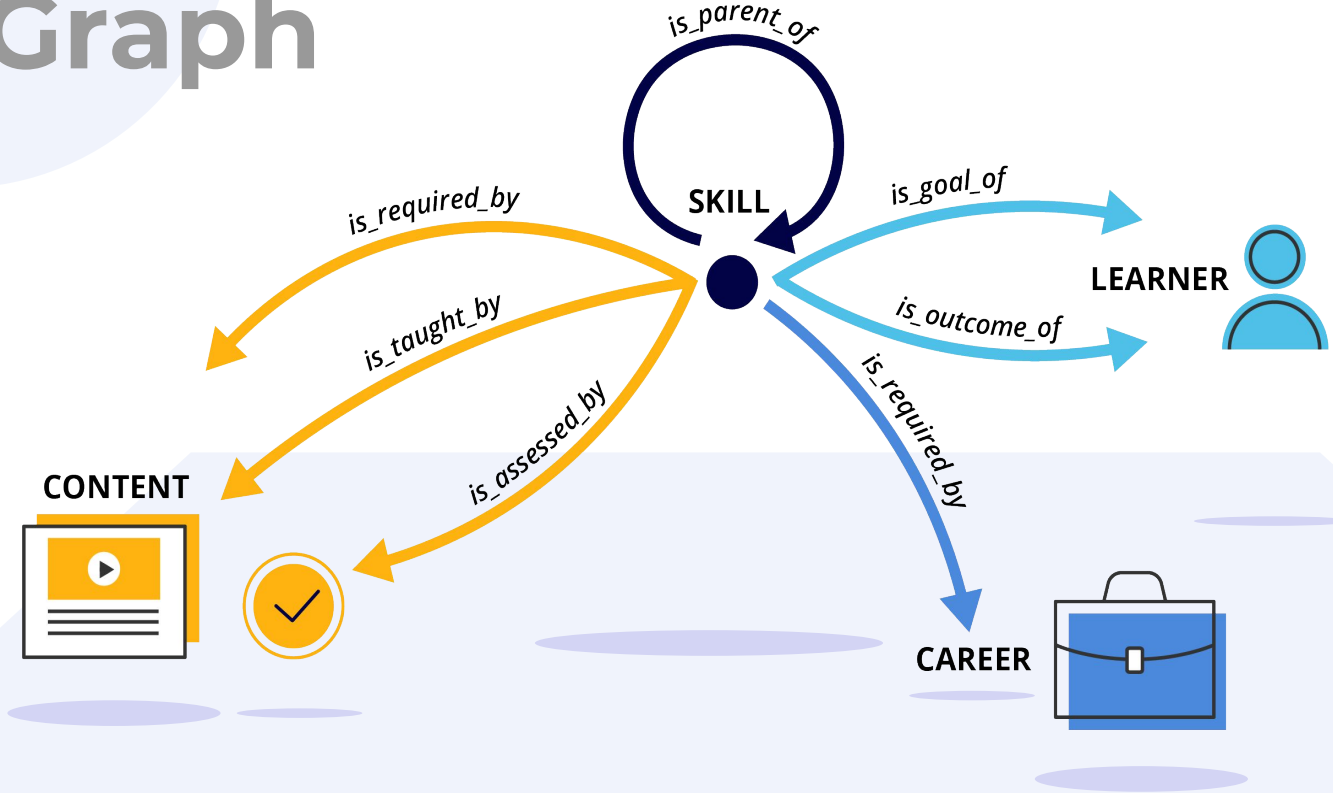
The Coursera Skills Graph

A series of machine learning algorithms that allows us to identify skill trends, gaps, and benchmarks for thousands of companies & millions of learners.

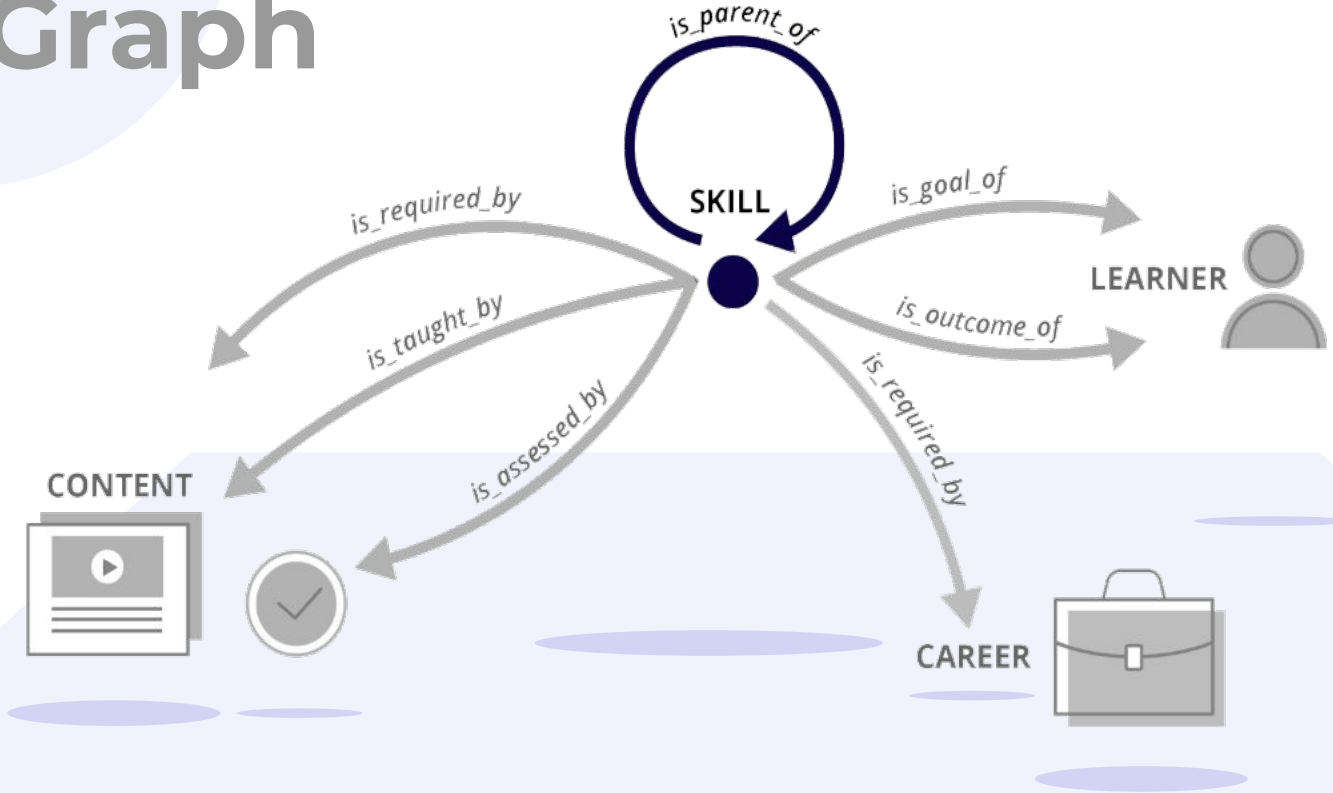
As featured in ***World Economic Forum***, ***TechCrunch***, ***MIT Tech Review***, & ***Bloomberg***.



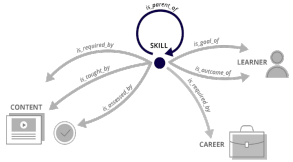
Skills Graph



Skills Graph



Sample **Skills Taxonomy**

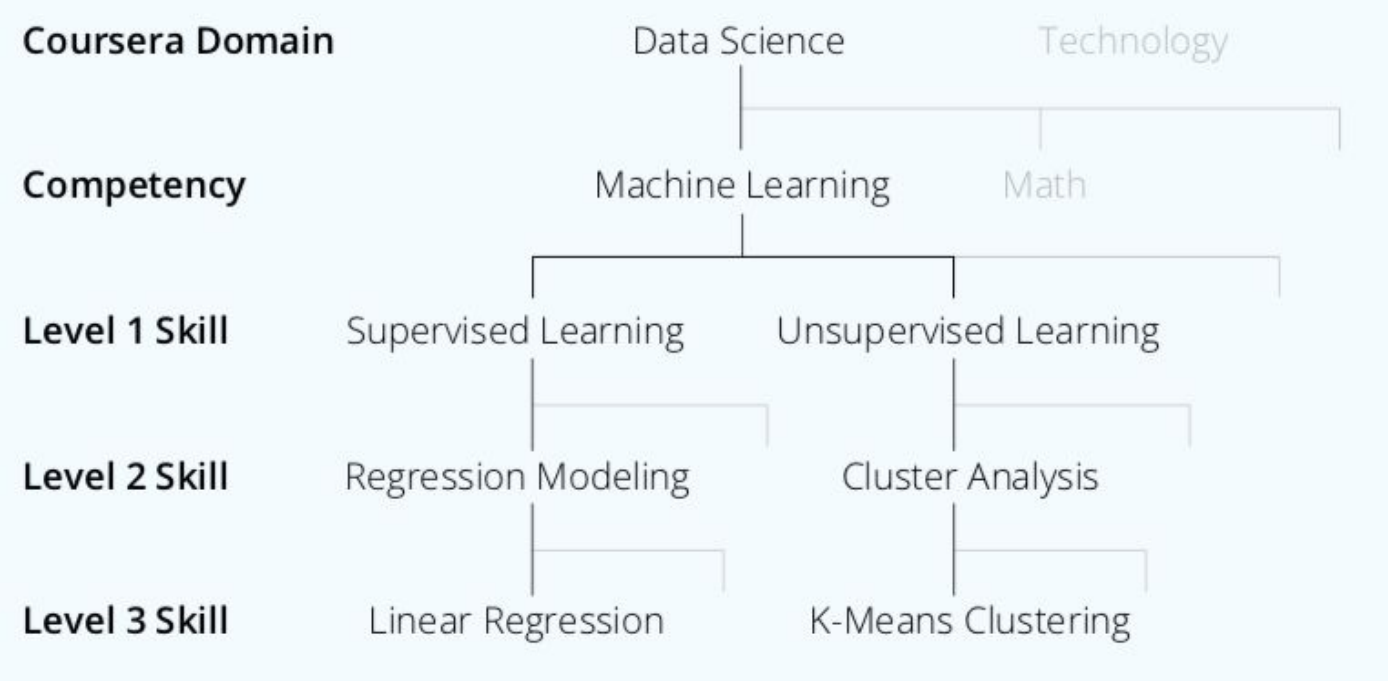


We build our taxonomy by combining:

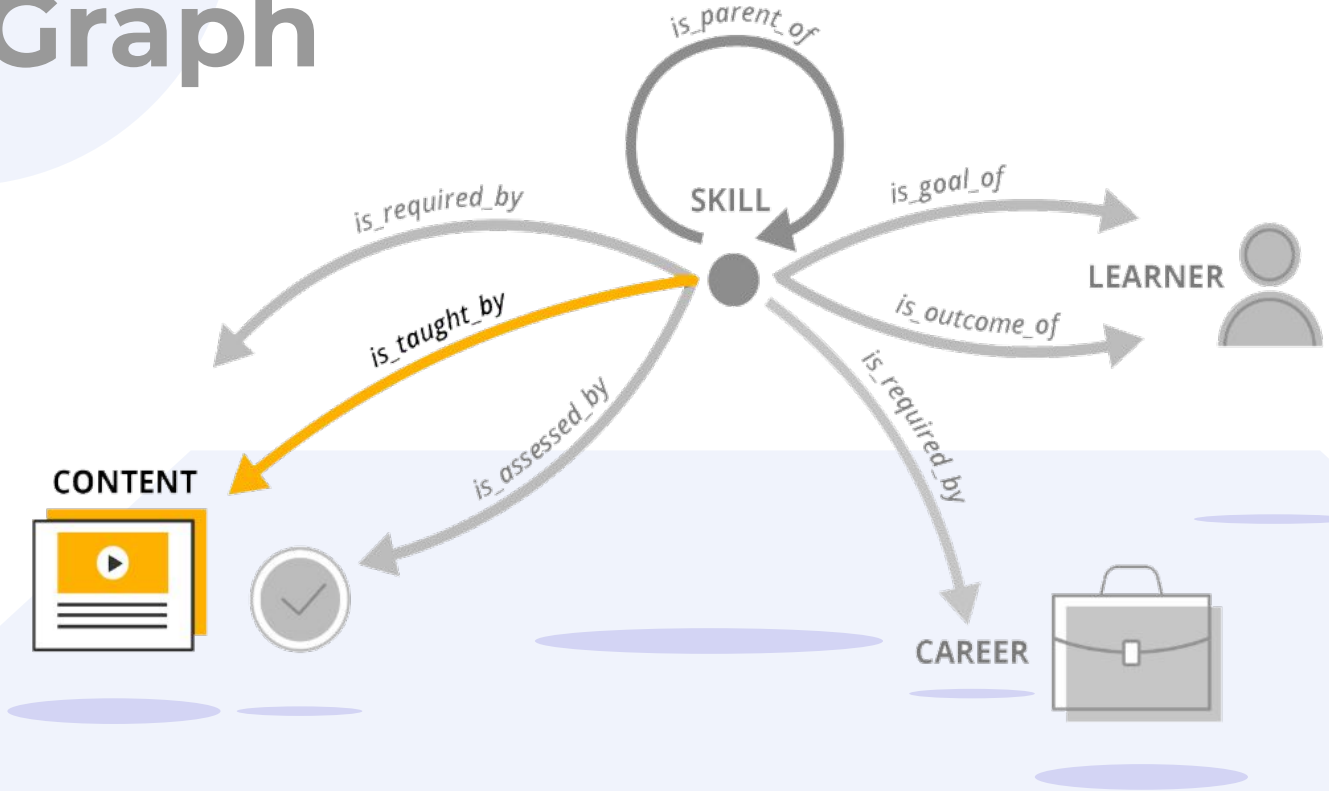
Open-source taxonomies

&

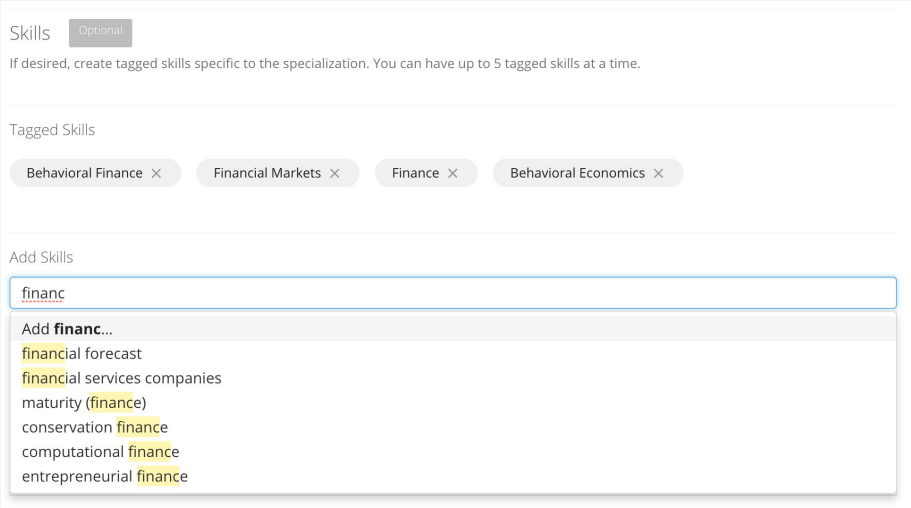
Subject matter experts in each domain



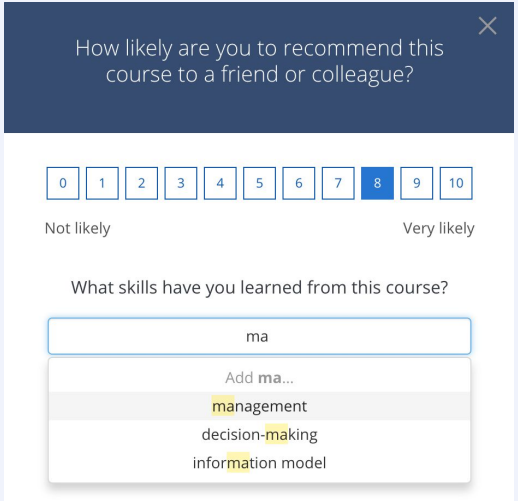
Skills Graph



Mapping **content to skills taught**



Instructor Feedback
(Course Authoring)



Learner Feedback
(In-Course)


coursera
GLOBAL SKILLS INDEX 2019
The world's top trending skills in Business, Technology, and Data Science benchmarked across 60 countries and 10 industries.
www.coursera.org/gsi

As featured in **World Economic Forum** *Strategies for the New Economy* report

Coursera delivers **skills trends** and **benchmarking**

for 60 countries and 10 industries based on data from 40+ million learners and 7k companies

Source: Coursera Global Skills Index 2019

What are the skills of tomorrow?

What are the skills of tomorrow?

We cover key competencies that span Business, Technology, and Data Science.

Business	Technology	Data Science
Accounting	Computer Networking	Data Management
Communication	Databases	Data Visualization
Finance	Human Computer Interaction	Machine Learning
Management	Operating Systems	Math
Marketing	Security Engineering	Statistical Programming
Sales	Software Engineering	Statistics

Where do other leading tech companies invest?

*Data below represents YOY growth in domain popularity across 18 competencies, 2017-18, for the **Technology industry**.*

Business

Accounting	-10%
Communication	-18%
Finance	-8%
Management	0%
Marketing	-7%
Sales	-18%

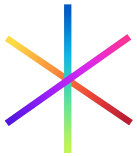
Technology

Computer Networking	+130%
Databases	+56%
HCI	+23%
Operating Systems	0%
Security Engineering	+15%
Software Engineering	+56%

Data Science

Data Management	+24%
Data Visualization	+13%
Machine Learning	+20%
Math	-10%
Statistical Programming	+15%
Statistics	-2%

Source: Coursera Global Skills Index 2019



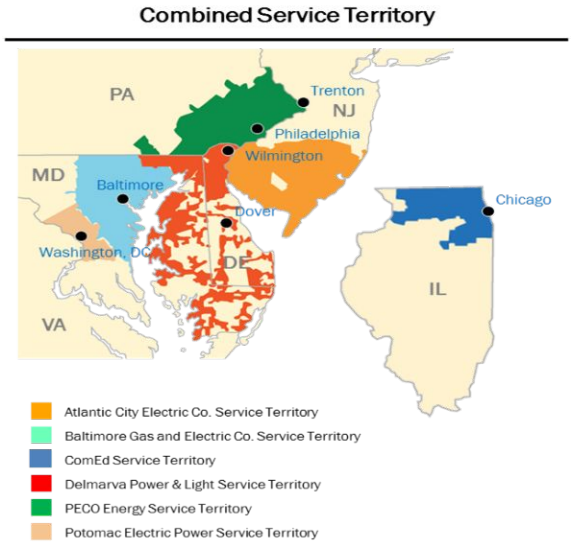
Essential Skills Map

for Digital Transformation

	for **Engineering**	for **Data Science**	for **Product**	for **Finance**	for **Marketing**	for **Managers**
Business skills *700+ courses*	Agile Management Leadership Product Management	Business Case Dev. Project Planning Leadership	Agile Management Product Management Disruptive Innovation	Mathematical Finance Financial Modeling Financial Engineering	Digital Marketing Digital Strategy Social Media	Leadership Change Management Design Thinking
Tech skills *500+ courses*	Debugging Algorithms Cloud Computing	NLP Sentiment Analysis Deep Learning	User Experience Design User Research Agile Software Dev.	Microsoft Excel Vba Algorithmic Trading Visual Analytics	Content Strategy Web Analytics SEO	Cyber Security Artificial Intelligence Emerging Tech
Data skills *200+ courses*	Python Machine Learning Big Data	Python Tensorflow Machine Learning	Big Data SQL Data Visualization	Forecasting Business Analytics Data Visualization	Big Data Marketing Analytics SQL	Cloud Computing Analytics Data Management

How can we develop these skills?

Exelon Utilities Overview



Exelon Utilities

BGE An Exelon Company | ComEd An Exelon Company | PECO An Exelon Company | Pepco Holdings An Exelon Company

Our Exelon Utilities analytics journey began with a focus on 4 domains and build-out of our data analytics platform…

Customer

Smart Energy Services

Online tools & notifications will drive
3.1 Terawatt hours
of customer savings
Enough to power more than 300,000 homes for a year!

Customer Operations

Use Cases across…

1. Customer Strategy
2. Customer Operations
3. Revenue Cycle
4. Products & Services

…that will:

- Enhance cust. experience
- Automate low value interactions

Grid

23 Use Cases across…

1. Asset Management
2. Grid Operations
3. Extended Systems

…that will:

1. Improve Reliability
2. Improve Customer Sat.
3. Reduce O&M Expenses
4. Capture new Revenue

Grid

Advanced Metering Infrastructure

33 Use Cases across:

1. Meter Operations
2. Network Operations
3. Theft Detection
4. Inactive Meters

New Use Case Pipeline – Job One Focus on Safety

Data Analytics Platform (DAP)

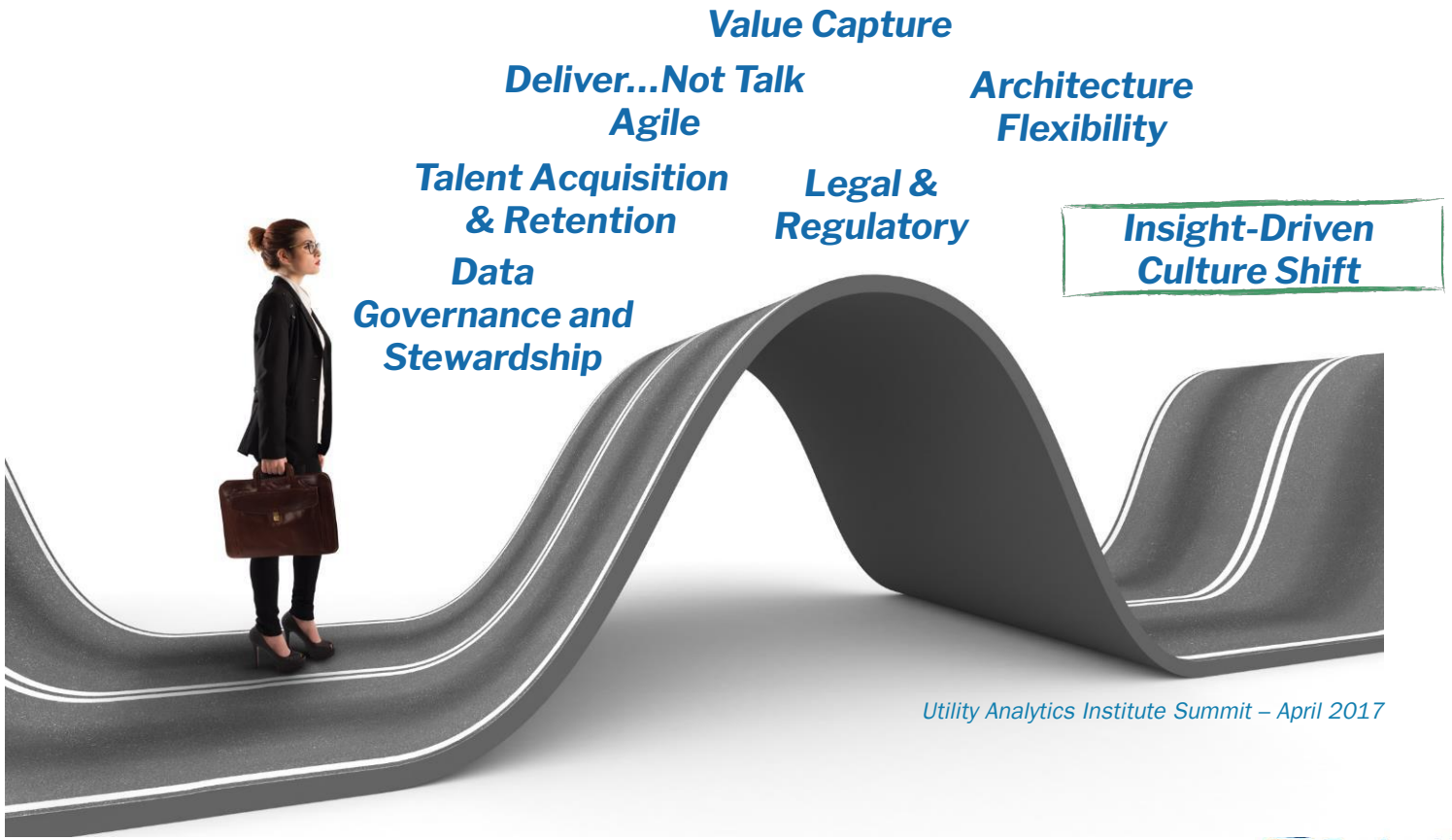
Strategy | Gov. & Planning | Domain Execution | Analytics Delivery & Support | Culture Shift | Value Tracking & Realization

Accelerating EU Analytics Maturity & Culture

Exelon Utilites Analytics Academy

Exelon Utilities

…however, we knew there were several challenges on the horizon



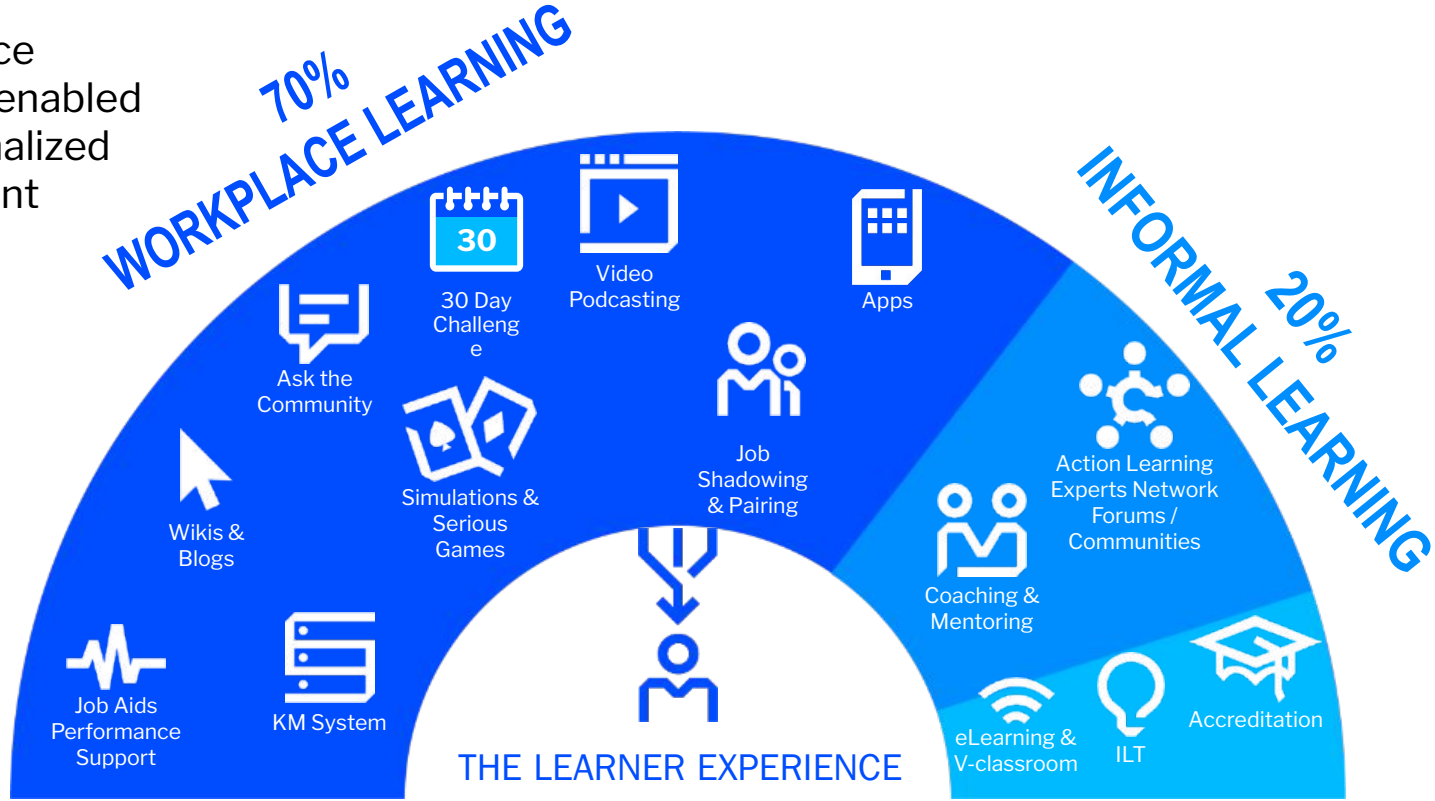
Utility Analytics Institute Summit – April 2017

Exelon Utilities

Charged to reimagine learning at Exelon Utilities as basis of the Analytics Academy

Digital disruption is shifting experience from “go away and learn” to “learn on the go”.

The new workforce expects digitally-enabled and hyper-personalized talent development experiences.



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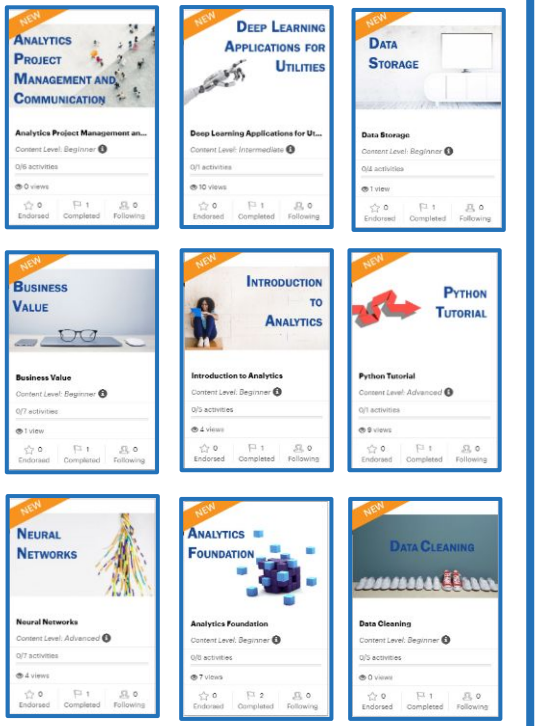
Breadth and Depth of Analytics Academy

Broad Bite Size Discovery ← → **Specific, Practical in Depth Learning**

Future Talent Platform

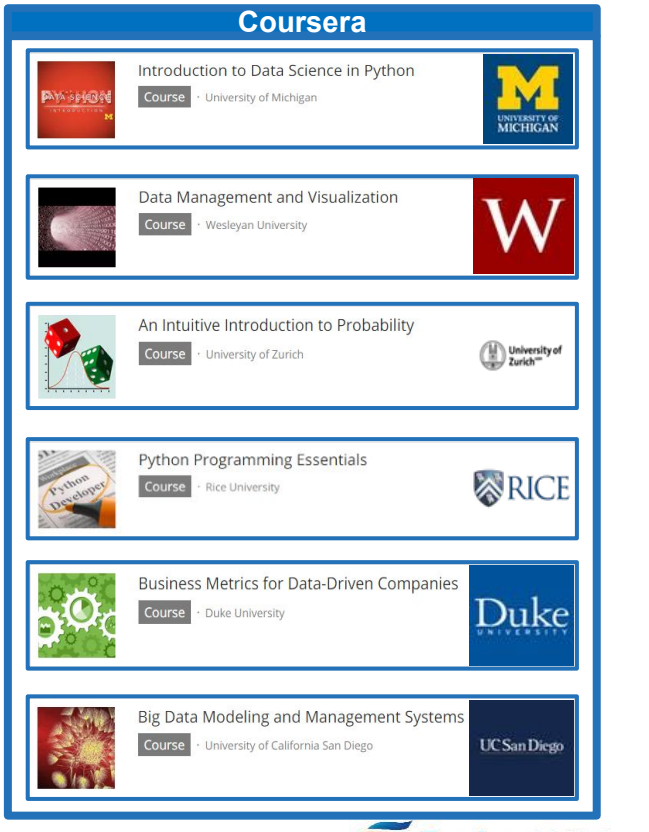


Tracks

Analytics Focus Areas

- Machine Learning
- Data Visualization
- Experimental Design/Root Cause Analysis
- Algorithm Development
- Analytics Project Management
- Data Engineer

Coursera



Exelon Utilities

Analytics Ambassadors have expanded their analytics IQ/ Awareness, completed 5500+ hours of college coursework, having fun and getting recognized!


LOAD DATA MAN


ANALYTICS SAVVY


DOCTOR PRODUCTIVINESS


THE MACHINE TAMER


PRESCRIPTIVE ANALYTICS NINJA


THE GIVER OF SIGHT


INTUITIVE APTITUDE


X-RAY VISION


MACHINE LEARNING QUEEN BEE


HINDSIGHT-FO RESIGHT


PYTHON ANALYTICS GURU


SUPER COST SAVER


OPPORTUNITY IDENTIFIER

Total Organic Savings:
3,088 Hours and counting….

Exelon Utilities

The Essential Skills Collection for **Product Teams**

Audience

Product organizations in future-forward companies responsible for researching, developing, designing, and shipping features, services, and products.

Skills taught

Agile Management
Product Management
Disruptive Innovation
User Experience Design
User Research
Agile Software Dev.
Big Data
SQL
Data Visualization

Business skills for Product Teams

Featuring content from

Courses include

Digital Product Management: Modern Fundamentals
AI For Everyone
Agile Meets Design Thinking
Introduction to Software Product Management
Brand and Product Management

Tech skills for Product Teams

Featuring content from

Courses include

Human-Centered Design
Intro to User Experience Design
Design Principles: An Introduction
Input and Interaction
User Experience: Research & Prototyping
Visual Elements of User Interface Design

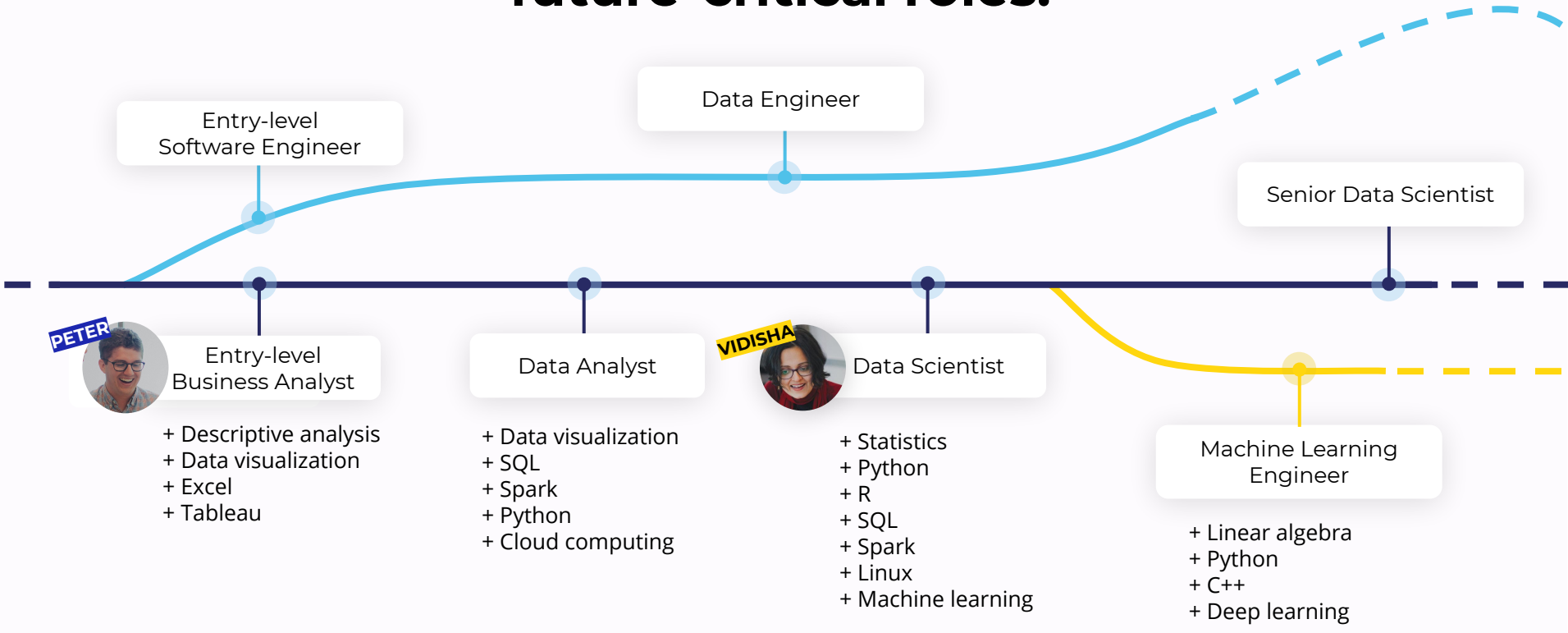
Data Science skills for Product Teams

Featuring content from

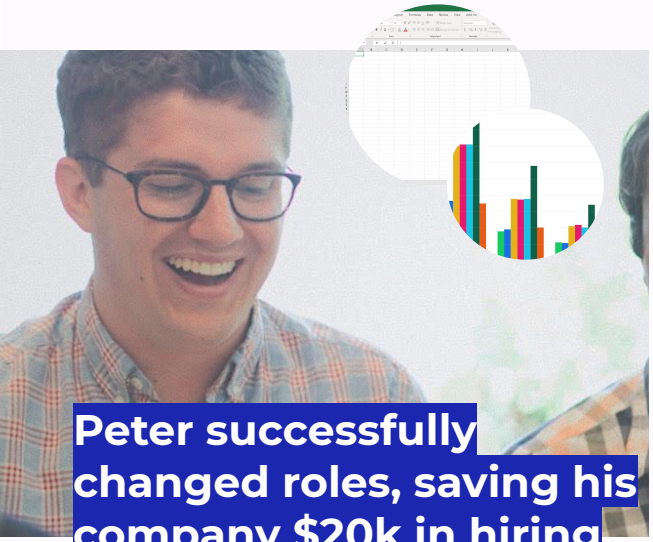
Courses include

The Data Scientist's Toolbox
SQL for Data Science
Business Metrics for Data-Driven Companies
Introduction to Data Science in Python
Data Visualization and Communication with Tableau

Coursera deepskills your employees for future-critical roles.



From Operations to Business Analyst



Peter successfully changed roles, saving his company $20k in hiring and onboarding costs

What **data matters?**

How do I **analyze it?**

How do I **present it?**

Business Metrics for Data-Driven Companies

Duke University

Skills Learned Business Analysis; Risk Metrics, Business Case Analysis, Analytics, Revenue, Big Data, Finance, Data Analysis, Business Process

Excel Skills for Business: Intermediate II

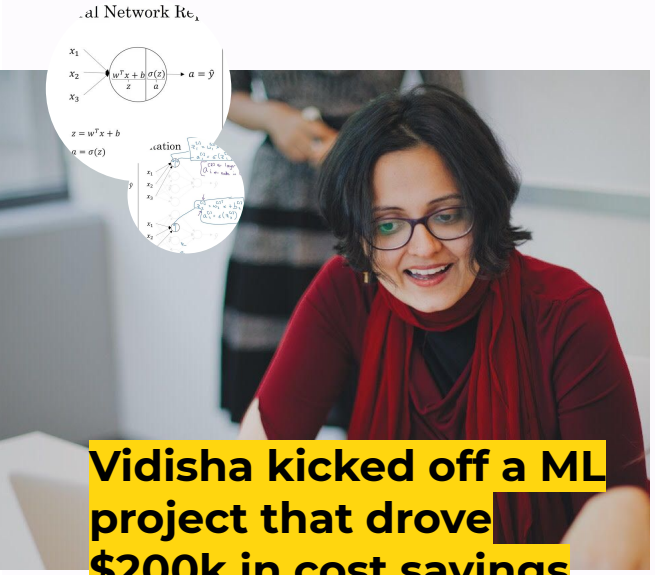
Macquarie University

Skills Learned Modeling, Microsoft Excel, Data Validation, Data Modeling, VBA

Data Visualization and Communication with Tableau

Duke University

Skills Learned Data Visualization, Data Visualization Software, Presentation Layers, Storyboarding, Tableau, Statistical Charts and Diagrams



Vidisha kicked off a ML project that drove $200k in cost savings

From Data Scientist to ML Engineer

What is a **neural network?**

Neural Networks and Deep Learning

deeplearning.ai

Skills Learned Backpropagation, Machine Learning, Logistic Regression, Numpy, Artificial Neural Network, Feedforward Neural Network

How do I **improve it?**

Hyperparameter Tuning, Regularization & Optimization

deeplearning.ai

Skills Learned Mathematical Optimization, Softmax Function, Tensorflow, Hyperparameter, Hyperparameter optimization

How do I **create a project for it?**

Structuring Machine Learning Projects

deeplearning.ai

Skills Learned Deep Learning, Project Design, Applied Machine Learning, Inductive Transfer, Multitask Learning, Orthogonalization

Custom Recommendations:

How we work with you to build collections

1. Understand your **skills and roles**

Roles
Engineer
Analyst
Manager
Data Scientist

Skills
Data analysis
Storytelling
AI & Machine Learning
Emotional intelligence
Negotiation
Influencing

2. Map to **Coursera courses**

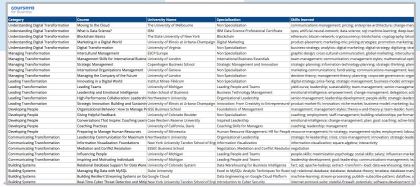
Data Scientist

+

AI & Machine Learning

=

Advanced Machine Learning and Signal Processing



3. Review and **refine**

Course: Advanced Machine Learning and Signal Processing

Feedback: too advanced, need intro to machine learning

Replace with: Introduction to Machine Learning

4. Launch your program

Data Leadership Program

- AI & Machine Learning for Data Scientists
- Data for Everyone
- Introduction to Business Analytics
- Data Analytics for Data Professionals

Coursera Content Curation Best Practices

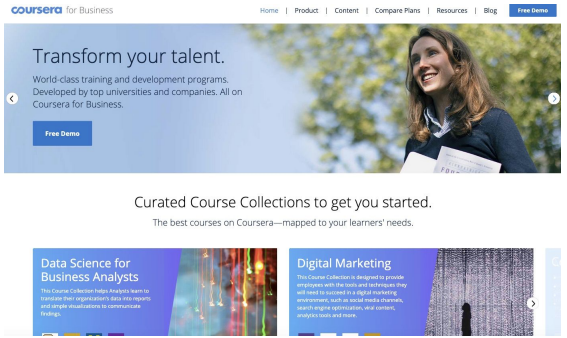
1. Know your **audience**	• Identify who they are - role, group / function, etc. • Identify what motivates them to learn • Connect that motivation to an important business challenge
2. Clearly define **skill needs**	• Determine what skills they need • Define those skills in as much detail as is relevant (e.g., “presenting” vs. communication or Python vs. software dev.)
3. **Structure programs** for your audience	• Create collections focused on key skills or roles • Organize collections in a way your audience understands ○ E.g., use their language
4. Monitor **feedback**	• Analyze what courses learners are enrolling in • Review course ratings and NPS • Ask for feedback and adjust the program in response

Take-A-Ways

Download the report at coursera.org/gsi

Check out the [Exelon webinar]

Transform your talent. [Contact Sales]



Visit www.coursera.org/business to learn more.

coursera for Business

Q&A