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Learning for Life

GREAT LAKES
EXECUTIVE LEARNING

TEXAS
The University of Texas at Austin

Post Graduate Program in

Artificial Intelligence & Machine Learning

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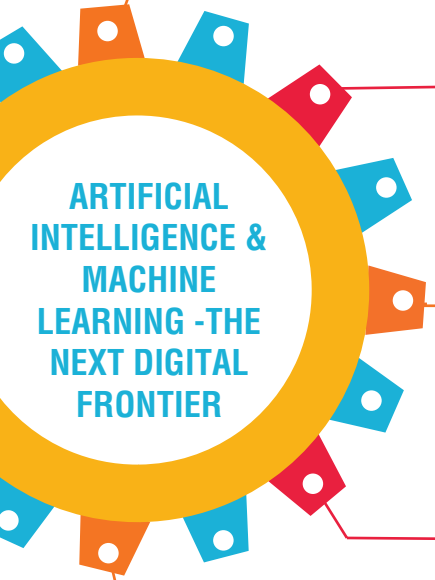

60% Rise In Demand

for Artificial Intelligence and Machine Learning experts in 2018* (as per Kelly OCG)

40% Of Digital Transformation

initiatives will use AI services by 2019 and by 2021, 75% of enterprise applications will use AI* (as per IDC report 2018)

Artificial Intelligence & Machine Learning

is among the most sought after, highest paid and future secure digital economy skill

$40 Billion

was spent by companies around the world in developing AI capabilities in 2016* (as per McKinsey Global Institute report on Artificial Intelligence)

75%

of Indian companies feel that the shortage of skilled professionals is slowing down their adoption of AI* (as per Intel/IDC)

WHY GREAT LEARNING?

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5000+
Students

7+ Million
Hours of Learning Delivered

10
Top Ranked Programs

500+
Industry Experts

25+
India's Best Data Science Faculty

2000+
Career Transitions amongst alumni

3000+
Successful Alumni

WHAT MAKES OUR AIML PROGRAM UNIQUE?

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1. Designed by leading **academic** and **industry experts** with **IIT-Bombay faculty.**

2. Covers Artificial Intelligence & Machine Learning technologies and applications including **Machine Learning, Deep Learning, Computer Vision, Natural Language Processing, Intelligent Virtual Agents, Neural Network, Tensor Flow** and many more.

3. The program is offered in two formats, **a blended format (classroom sessions with online content) & online only (online videos with weekend mentorship sessions)**

4. Hands-on program using **AI and ML lab and 12+ projects.** It features case studies and learning from some of the top global companies like Uber, Netflix, Google, Amazon etc.

5. For every assignment you work as part of this program, **you will get to see the solutions of the assignment as recorded walkthroughs.** Recorded walkthroughs help you to understand the concepts better and analyze a problem from the view of an expert.

6. As part of this program, you will be making all of your submissions on Github. **Github is an online repository which helps you to store all the projects** and assignments you have done as part of this program in a single place. Today, most companies look at potential recruits Github profiles to check their technical expertise before hiring them.

7. The program is internationally recognized and participants earn **dual certificates from The University of Texas at Austin and Great Lakes.**

WHAT CAN OUR AIML PROGRAM HELP YOU ACHIEVE?

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Develop expertise in popular AI & ML technologies and problem-solving methodologies

Develop the ability to **independently solve business problems** using AI & ML

Learn to use popular **AI & ML technologies like Python, Tensorflow and Keras** to develop applications

Develop a verified **portfolio with 12+ projects** that will showcase the new skills acquired

Build expertise in **AI & ML** which are quickly becoming the most **sought-after skills around the world**

PROGRAM FORMATS: BLENDED LEARNING

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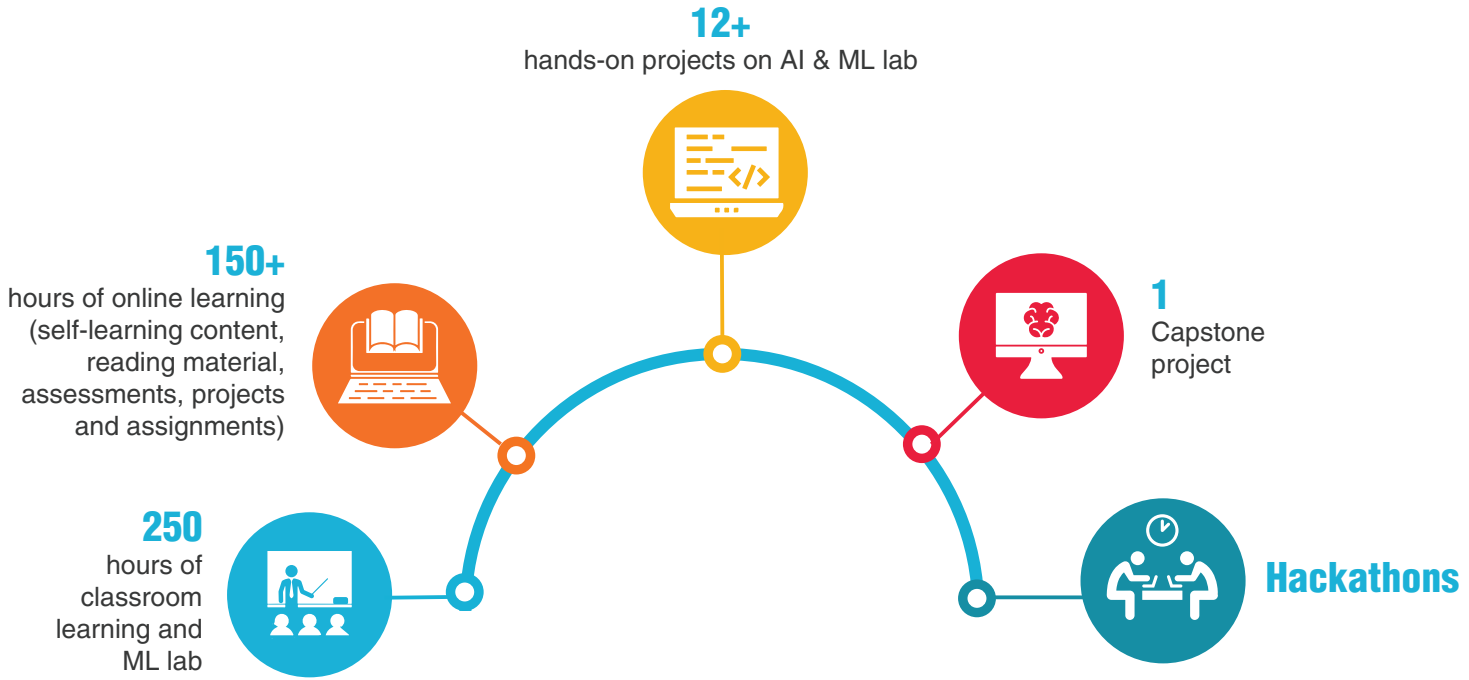
In this format, learning occurs through weekend classroom sessions & online content that includes videos, reading material & projects. More importantly, in-person interaction with peers helps learners gain additional insights & industry knowledge. Classroom sessions are available in Bangalore, Mumbai, Chennai, Gurgaon, Hyderabad & Pune.



12 Months | 30 Days of Classroom Sessions (Weekends)

PROGRAM FORMATS: ONLINE LEARNING

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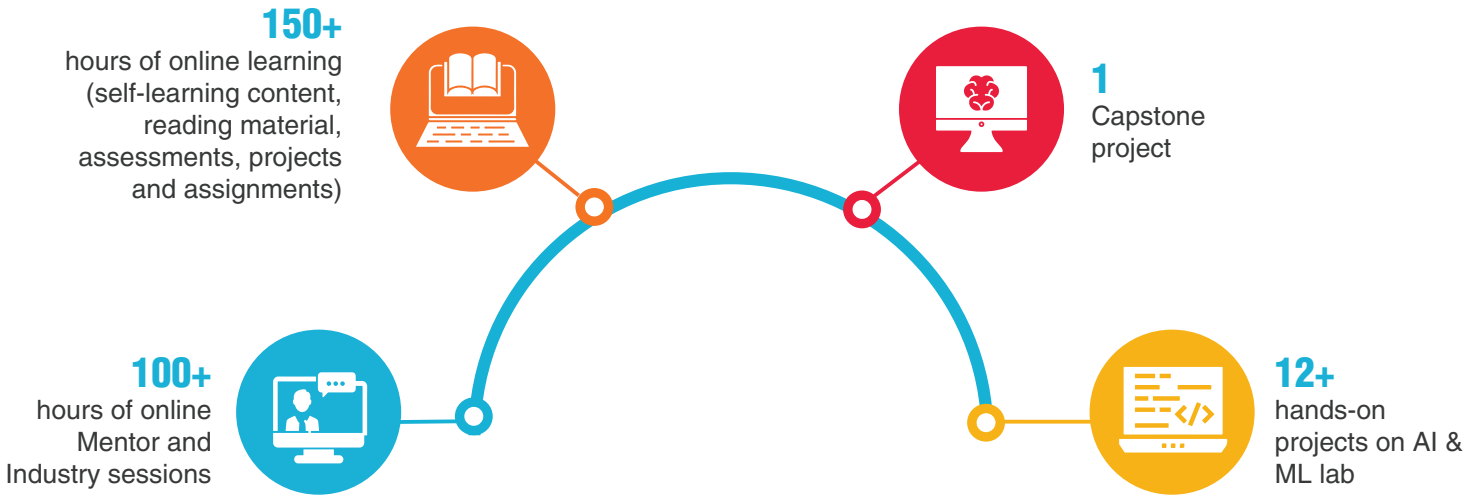
In this format, learning occurs through online videos along with online mentorship sessions every weekend to clear doubts, reinforce concepts and for provide assistance on projects. The mentors come with substantial industry experience which helps learners gain an industry perspective. This guidance plays a critical role in making them industry-ready.



12 Months | 250+ hours of learning

FOUNDATIONS

Python for AI & ML

- Python Basics
- Python functions, packages and routines
- Working with data structures,arrays, vectors & data frames
- Jupyter notebook – Installation & function
- Pandas, NumPy, Matplotlib, Seaborn

Statistical Learning

- Descriptive Statistics
- Probability & Conditional Probability
- Hypothesis Testing
- Inferential Statistics
- Probability Distributions - Types of distribution – Binomial, Poisson & Normal distribution

MACHINE LEARNING

Supervised learning

- Multiple Variable Linear regression
- Logistic regression
- Naive Bayes classifiers
- Multiple regression
- K-NN classification
- Support vector machines

Unsupervised learning

- K-means clustering
- High-dimensional clustering
- Hierarchical clustering
- Dimension Reduction-PCA

MACHINE LEARNING

Ensemble Techniques

- Decision Trees
- Bagging
- Random Forests
- Boosting

Recommendation Systems

- Introduction to Recommendation systems
- Popularity based model
- Hybrid models
- Content based recommendation system
- Collaborative filtering (User similarity & Item similarity)

ARTIFICIAL INTELLIGENCE

Neural Network Basics

- Gradient Descent
- Batch Normalization
- Hyper parameter tuning
- Tensor Flow & Keras for Neural Networks & Deep Learning
- Introduction to Perceptron & Neural Networks
- Activation and Loss functions
- Deep Neural Networks

Computer vision

- Introduction to Convolutional Neural Networks
- Convolution, Pooling, Padding & its mechanisms
- Transfer Learning
- Forward propagation & Backpropagation for CNNs
- CNN architectures like AlexNet, VGGNet, InceptionNet & ResNet

ARTIFICIAL INTELLIGENCE

Statistical NLP (Natural Language Processing)

- Bag of Words Model
- POS Tagging
- Tokenization
- Word Vectorizer
- TF-IDF
- Named Entity Recognition
- Stop Words

Sequential NLP (Natural Language Processing)

- Introduction to Sequential data
- Vanishing & Exploding gradients in RNNs
- LSTMs
- GRUs - Gated recurrent unit
- Case study: Sentiment analysis
- RNNs and its mechanisms
- Time series analysis
- LSTMs with attention mechanism
- Case study: Machine Translation

Advanced Computer Vision

- Semantic segmentation
- Siamese Networks
- YOLO
- Object & face recognition using techniques above

GANs (Generative adversarial networks)

- Introduction to GANs
- How GANs work?
- AutoEncoders
- Applications of GANs

Reinforcement Learning

- Value based methods Q-learning
- Policy based methods

LANGUAGES AND TOOLS

- Python
- Python ML library scikit-learn
- NLP library NLTK
- Keras
- Data libraries like Pandas, Numpy, Scipy
- Python visualization library Matplotlib
- Tensor Flow
- Seaborn

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Here is a sample set of projects which you will be working as part of this program

NAME A CAMPAIGN TO SELL PERSONAL LOANS

TOPICS Supervised Learning

DESCRIPTION Identify potential customers for a personal loan product for a bank, allowing the bank to design targeted marketing campaigns to increase conversion.

NAME BANK NOTE ANALYSIS

TOPICS Supervised Learning, Unsupervised Learning

DESCRIPTION The project is about building a classification model to predict the authenticity of a bank note if it is counterfeit or genuine based on the characteristics of the image of the bank note.

NAME PREDICT THE ONSET OF PARKINSON'S DISEASE

TOPICS Supervised Learning, Boosting, Bagging & Random forest

DESCRIPTION Traditional diagnosis of onset of Parkinson's disease is often difficult, as monitoring the onset requires repeated clinic visits by the patient. You will be building a Machine Learning algorithm over a recording dataset to predict the onset of the disease.

NAME CUSTOMER SENTIMENT FROM AMAZON REVIEWS

TOPICS Recommendation systems

DESCRIPTION Build a recommendation model that can determine and predict the sentiments of the customer from text reviews on Amazon's website.

NAME BIKE RENTAL RIDERSHIP

TOPICS Neural Networks, Tensorflow, Keras

DESCRIPTION Bike sharing services promise the convenience of bike usage without the need for ownership. A user is typically able to rent a bike from a particular location and return it at different locations. You will build a Neural Network which predicts the number of hourly and daily bikes rented, based on the environmental and seasonal settings.

NAME IMAGE CLASSIFICATION

TOPICS Image detection, Keras, Concurrent Neural Networks

DESCRIPTION Image recognition is the process of identifying and detecting an object or a feature in a digital image or video. In this project, you will use the power of Convoluted Neural Network to make the machine learn relevant features from sample images and automatically identify those features in new images.

NAME FACE RECOGNITION

TOPICS Image detection, Edge detection, Concurrent Neural networks

DESCRIPTION Facial recognition is a biometric solution that measures unique characteristics about one's face. Given an image or a video capture of a scene with one or more faces, the project is designed to use Convolutional Neural network to detect and classify each face as one of the persons whose identity is already known or as an unknown face.

NAME HANDWRITTEN DIGIT RECOGNITION

TOPICS Neural networks, Clustering

DESCRIPTION Given a series of handwritten digits, interpret these images and classify them appropriately to display actual numbers using neural networks.

NAME FAKE NEWS DETECTION

TOPICS Natural Language processing, Recurrent Neural networks, Keras, NLTK

DESCRIPTION Fake news is increasingly becoming a threat to our society. It is typically generated for increasing commercial interests—attract viewers and collect more advertising revenue. In this project, you will build a classifier model which can predict whether a piece of news is fake by using sequential models in Natural Language Processing.

NAME NETWORK INTRUSION DETECTION

TOPICS Clustering, Dimensionality reduction, Classification models

DESCRIPTION Build a network intrusion detection system and improve the accuracy of your prediction using a series of ensemble techniques.

NAME SILHOUETTE ANALYSIS

TOPICS Clustering, PCA, Regression models

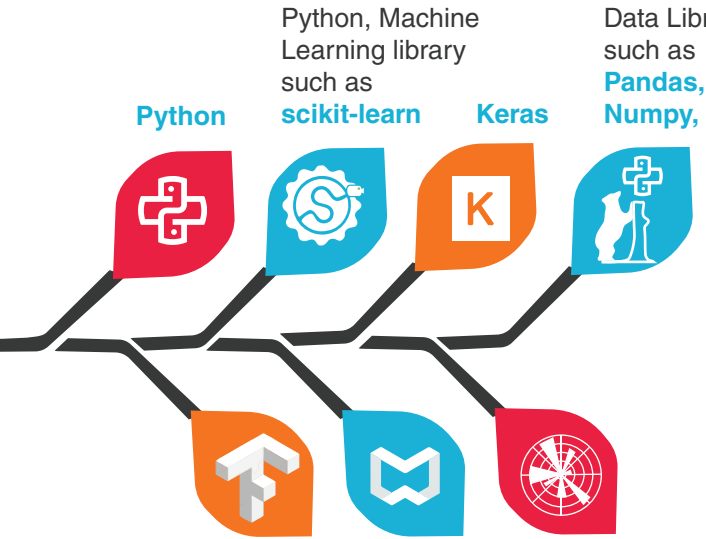
DESCRIPTION The purpose of the case study is to build a model which can classify a given silhouette as one of three different types of vehicle, using a set of features extracted from the silhouette.

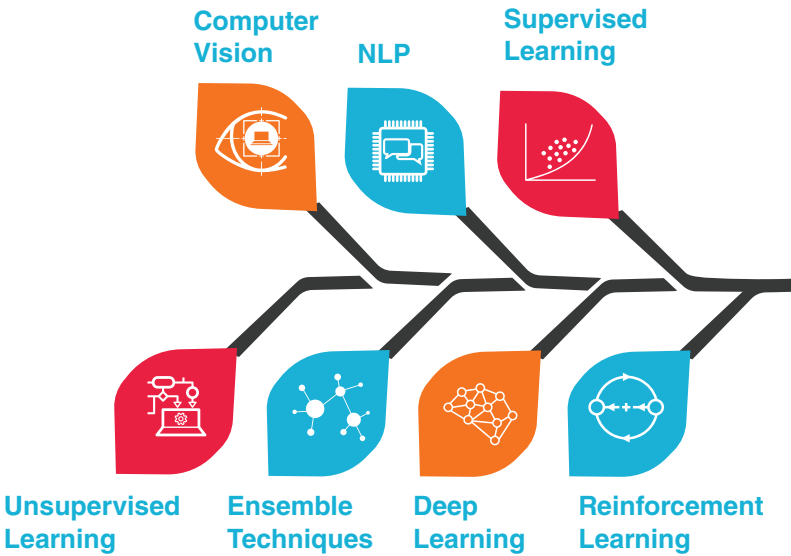
NAME PREDICTING THE CHURN

TOPICS PCA, Factor analysis, Regression models

DESCRIPTION Build a powerful Machine Learning model, which can help a telecom company to predict and take action on the likely customers who can switch away from their services

HANDS-ON EXPOSURE TO TOOLS





DR. KUMAR MUTHURAMAN

Full Professor, University of Texas at Austin

Dr. Kumar Muthuraman is the H. Timothy (Tim) Harkins Centennial Professor in the Department of Information, Risk and Operations Management and the Department of Finance at McCombs School of Business, University of Texas at Austin. He received his PHD from Stanford University. Dr. Muthuraman's research focuses on decision making under uncertainty. Application areas of interest to him are quantitative finance, operations management and health care.

PROF. ABHINANDA SARKAR

Academic Director, Great Learning

DR. ARJUN JAIN

Adjunct Faculty, IIT Bombay

Dr. Jain is the co-founder of Perceptive Code, a Silicon Valley AI startup that builds intelligence into automobiles using Deep Learning. He is part of the Theano development team and a contributor to Torch - both of which are widely used libraries for Deep Learning.

Dr. Jain received his PhD from the Max Planck Institute in Germany and his post-doc from NYU where he worked with Yann LeCun.

PROF. MUKESH RAO

Faculty, Machine Learning, Great Learning

Prof. Mukesh Rao has almost 3 decades of experience in the Analytics and Machine Learning industry. He has designed and implemented Machine Learning algorithms for abuse detection, social media analysis and report generation using MapReduce. Prior to this, Prof. Rao was with Wipro for over 12 years where he was the Head of PM Academy.

DR. AMIT SETHI

Faculty, IIT Bombay

Prof. Sethi is currently a faculty member at IIT Bombay where his research is focused on applying deep learning methodologies to digital pathology for analysis of cancer tissues. He was previously a faculty member at IIT Guwahati and spent many years at ZS Associates, a leading management consulting firm, at their offices in Chicago.

Prof. Sethi holds MS and PhD degrees from University of Illinois at Urbana-Champaign and BTech from IIT Delhi.

MR. GURUMOORTHY P

Faculty, Data Science And Machine Learning

Mr. Gurumoorthy is a Techno-Functional Professional with over 10 years of experience in the IT & Analytics domains. He possesses an undergraduate degree in Mathematics & a Post Graduate degree in Actuarial Economics. He has headed the Global Analytics Team in one of the World's largest Shipping Companies and currently is the "Head of Industry Solutions" in the Analytics & Mobility spaces at a niche AR/VR/MR Start-up Company in Chennai.

He has handled over 400 hours of Analytics training classes/workshops for Corporate and Individuals early in his career. He started his career as an Entrepreneur, handling clients on multiple Web Analytics & SEO/SEM Consulting Projects.

LAKSHMINARASIMHAN SANTHANAM
Director - Data Analytics and Automation

This is a beautifully crafted Data Science program consisting of different aspects around statistics, Industry Sessions, Machine Learning, Artificial Intelligence and Data visualization. The program provides a good balance of theory and more practical application of different techniques covered through sessions taken by renowned faculty. It balances regular and online coursework amidst busy work schedules and learners get opportunities to engage with leading faculty and outstanding peers.

SAI VENKATESHWARAN SRINIVASAN
Senior Technical Lead

The peer learning aspect is something that you guys should definitely be proud of. I should say that I have been able to connect with wonderful people, both technically and personally, after enrolling in the program. We are learning and at the same time teaching others new concepts. I can definitely say that my connections with most of my colleagues in this program will continue for a very long time. I am always an advocate of the quote - "when you teach you learn more about what you teach". Here, my peers are both teachers and students enriching each other's technical expertise to a vast extent.

GREAT ALUMNI WORK IN LEADING COMPANIES

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S.no	Features	PGP AIML (Online)	PGP AIML (Blended)
1	Eligibility	Applicants should have a **minimum of 3 years of experience in a technology role,** including some programming knowledge preferably in Python. For candidates who do not know Python, we offer a free pre-program tutorial.	
2	Fees	2,40,000 + GST	3,60,000 + GST

Selection Process

01 Interested candidates need to apply by filling a simple online application form

02 The admissions committee and faculty panel will review the applications and shortlist candidates based on their profiles

03 Offer will be made to selected applicants

Payments

Candidates can pay the program fee through Net Banking, Credit Cards or Debit Cards.

Cities

The Program is available at Bangalore, Chennai, Gurgaon, Pune, Mumbai and Hyderabad.

Financial aid

Our tie-ups with several lending partners like HDFC Credila, Axis Bank, Avanse Education, Zest Money & Incred for students who need financial help, ensure that their path for learning remains smooth.

TEXAS
The University of Texas at Austin

The University of Texas—Austin is one of the largest schools in USA. It was founded in 1883. Today UT Austin is a world-renowned higher education, research-intensive institution, serving more than 51,000 students annually with a teaching faculty of around 3,000. University of Texas at Austin is ranked #2 worldwide for Business Analytics according to the QS University rankings, #2 for science, technology, engineering and math (STEM) professionals according to Forbes and ranked #8 in Artificial Intelligence by the U.S.News & World Report Rankings 2018.

GREAT LAKES
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Great Lakes mission is to become a Center of Excellence in fostering managerial leadership and entrepreneurship in the development of human capital through quality research, teaching, residential learning and professional management services.

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Great Learning's mission is to enable career success in the Digital Economy. It's programs always focus on the next frontier of growth in 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 collaboration 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 to secure and grow their careers.

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