POST GRADUATE PROGRAM IN

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING: BUSINESS APPLICATIONS

A Program by:

TEXAS McCombs
The University of Texas at Austin
McCombs School of Business

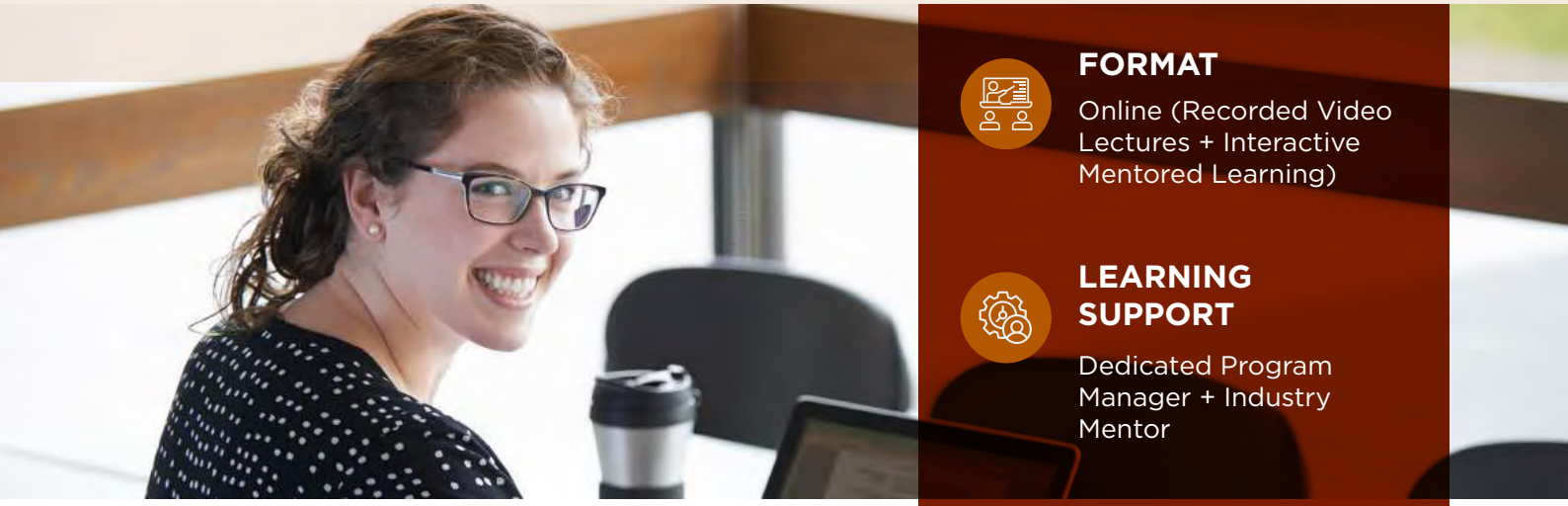
In Collaboration with:

Great Learning

ABOUT THE **PROGRAM**

Hundreds of online courses exist today. What many of them lack, however, is a commitment to helping you translate your knowledge into something tangible - the ability to excel and grow as an AI/ML professional. To tackle this, the PGP-AIML has been designed to give you the academic rigor, learning support, and peer interaction of a full-time course with the flexibility of an online program.

The PGP-AIML enables you to master the basics of Python programming without any prior coding experience. It offers a comprehensive curriculum with cutting-edge technologies like Deep Learning, Computer Vision, NLP, TensorFlow, Generative AI like ChatGPT and many more. A structured learning journey keeps you on track throughout as you achieve your weekly learning milestones with your mentor and benefit from their rich professional experience.



Following a learn-by-doing pedagogy, the program offers you the opportunity to apply your skills and knowledge in real-time every week through interactive mentor-led practice sessions, quizzes, assignments, and hands-on projects. As you do so, you come to truly appreciate the nuances of Artificial Intelligence and build your portfolio in the process.

On a whole, the program empowers you with the skills, body of work, and job market insights you need to find the right career opportunities or lead AI and ML teams in your current organisation. All this comes with the credibility, global advantage, and academic leadership of McCombs School of Business at The University of Texas at Austin.

FORMAT

Online (Recorded Video Lectures + Interactive Mentored Learning)

LEARNING SUPPORT

Dedicated Program Manager + Industry Mentor

TIME COMMITMENT

8-10 Hours per Week

DURATION

7 Months

PROJECTS

8 Hands-On Projects & 40+ Case Studies

PERSONALIZED CODING ASSISTANCE

Build Projects with the Ease of Supportive Coding Tools

THE UT AUSTIN **ADVANTAGE**

Founded in 1883 and home to more than 51,000 students and 3,000 teaching faculty, The University of Texas at Austin is one of the leading public universities in the United States. The UT Austin name is globally-recognized as a leader in the domains of science, business, technology, and social science.

With a proven track record of success, cutting-edge research, and teaching methods, you can be confident that you are learning from the best of the best.

#4

IN THE US FOR BUSINESS ANALYTICS

QS World University Rankings 2024

#6

IN CUSTOM PROGRAMS

Financial Times - Executive Education

Key Facts about Artificial Intelligence and Machine Learning

- The AI industry could be worth more than $15 trillion by 2030.
- By 2025, the AI industry will be generating revenues of $118.6 billion a year.
- 86% of executives at fast-growing companies say AI is important to their company's success.
- AI could create 97 million new jobs by 2025.

Source: PWC, Statista, Cognizant Report, World Economic Forum

THIS PROGRAM IS FOR YOU, IF YOU:

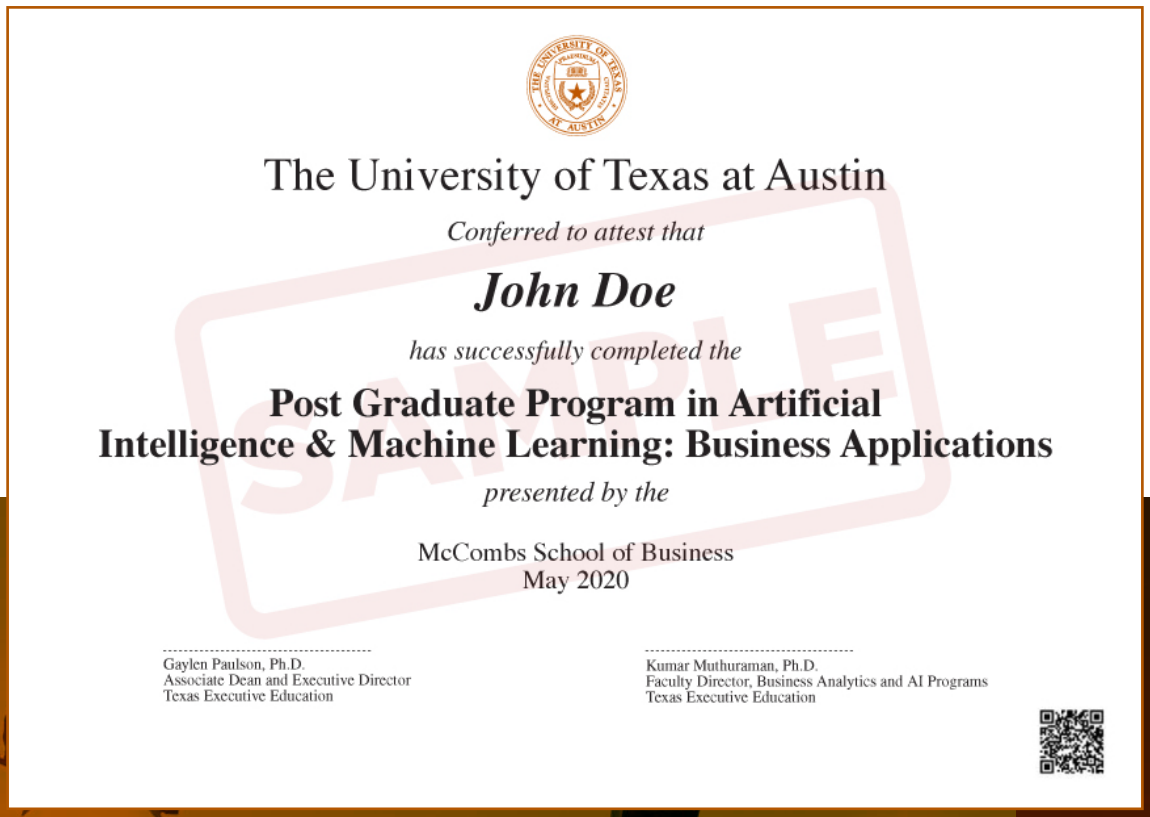
- Aspire to build a technical career in AI and Machine Learning.
- Like solving complex problems in a structured manner.
- Are comfortable in dealing with advanced algorithms.
- Do not have any prior coding/programming experience.
- Want to build AI/ML solutions integrated into tech infrastructures.
- Wish to learn advanced AI, ML, and Deep Learning techniques and their applications.

OVERALL, THE PROGRAM WILL HELP YOU:

- Lead the implementation of AI in your current role or company.
- Transition to a tech career in AI and Machine Learning.

CERTIFICATE

Showcase your competence with a Certificate of Completion from The University of Texas at Austin.



PAST **LEARNER PROFILES**

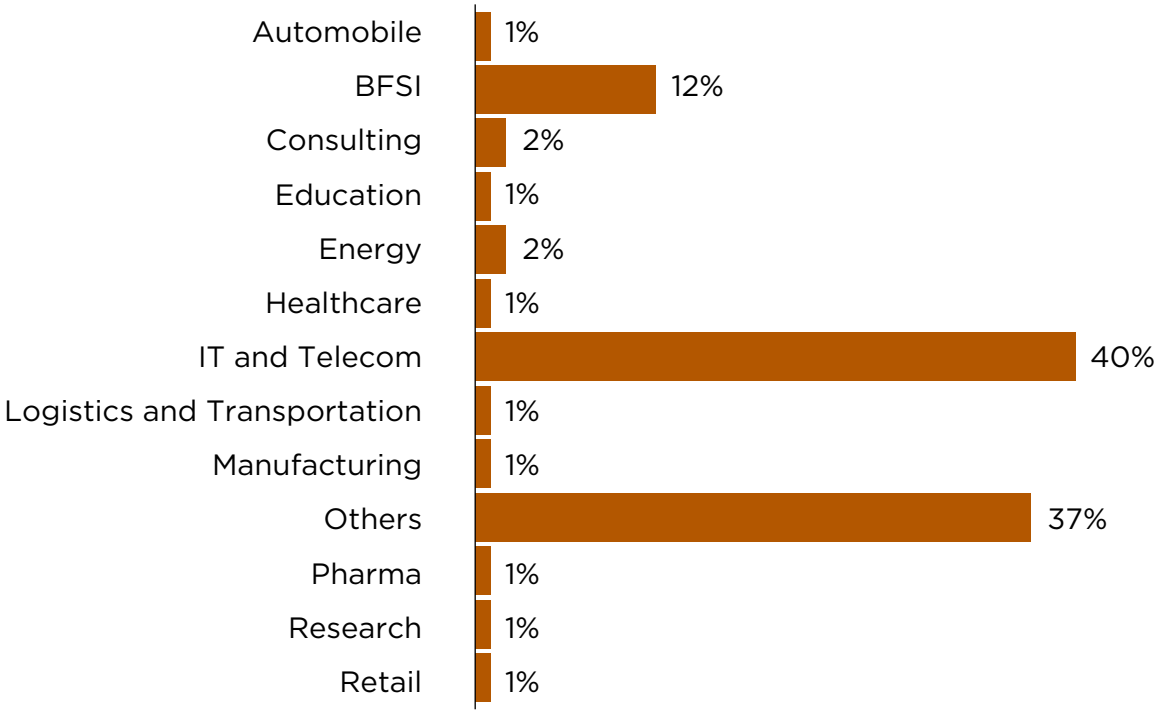
Each of the cohorts represent a diverse mix of work experience, industries, and geographies - guaranteeing a truly global and eclectic learning experience. Below is an indicative mix of where past learners have come from.

0-3 Years

3-8 Years

8-15 Years

15+ Years



KEY **LEARNING OUTCOMES**

- **Build your expertise in the most widely-used AI & ML tools and technologies.**
- **Acquire the ability to independently solve business problems using AI & ML.**
- **Master the skills needed to build Machine Learning and Deep Learning models.**
- **Develop know-how of the applications of AI in areas such as Computer Vision and NLP.**
- **Understand the possibilities and implications of AI in different industries.**
- **Build a substantial body of work and an industry-ready portfolio in AI & ML.**
- **Get an additional certificate in Python Foundations.**

"The program gave me fair coverage in terms of both breadth and depth of AI & ML in 6 months. The hands-on projects, mentored learning sessions by industry experts give you a holistic learning path. Add the personal attention from the Program Manager and it doubles your progress. Truly a Great Learning experience!"

- Sujoy Joy, Module & Process Owner,
Nielsen, USA

"The AIML program has been comprehensive in key concepts. The video lectures were detailed and the projects and quizzes challenged us to work through real-life applications. I would recommend this program to professionals wanting to learn more about AIML, as I have applied my learnings and tools in my career to solve client problems."

- Steve Carr, Project Manager
enVista, USA

"Overall, I enjoyed the program and learned a lot. I learnt the most in the projects and mentor learning sessions. It hammered in the process of approaching AIML problems. The next best thing is the breadth and range of topics as well as working on patents for using or implementing AI."

- Eric Taylor, Design Engineer
Arteris IP, USA

COURSE **CURRICULUM**

SELF-PACED MODULE

INTRODUCTION TO DATA SCIENCE AND AI

Gain an understanding of the evolution of AI and data science over time, their application in industries, the mathematics and statistics behind them, and an overview of the life cycle of building data driven solutions.

- The Fascinating History of Data Science and AI
- Transforming Industries through Data Science and AI
- The Math and Stats Underlying the Technology
- Navigating the Data Science and AI lifecycle

SELF-PACED MODULE

PYTHON PRE-WORK

Gain a fundamental understanding of the basics of Python programming and build a strong foundation of coding to build AI applications.

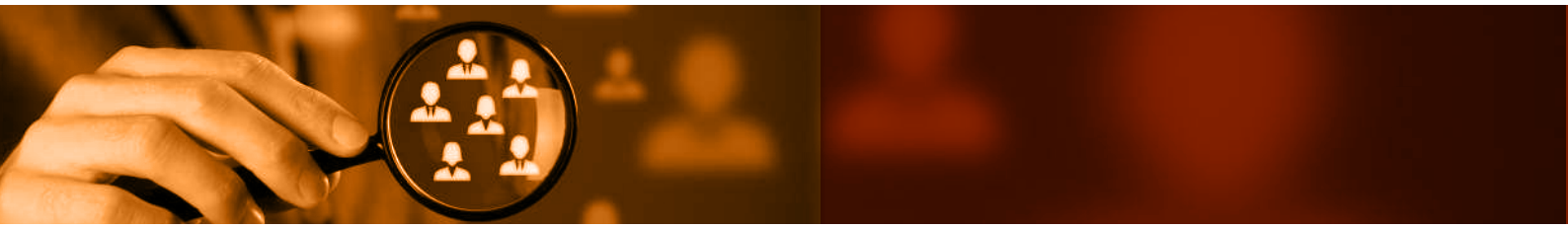
- Python IDE
- Introduction to Python Programming

SELF-PACED MODULE

GENERATIVE AI

Get an overview of Generative AI, what ChatGPT is and how it works. delve into the business applications of ChatGPT, and an overview of other generative AI models/tools via demonstrations.

- ChatGPT and Generative AI - Overview
- ChatGPT - Applications and Business
- Breaking Down ChatGPT
- Limitations and Beyond ChatGPT
- Generative AI Demonstrations



MODULE 1 PYTHON FOUNDATIONS

Read, explore, manipulate, and visualize data to tell stories, solve business problems, and deliver actionable insights and business recommendations using some of the most widely used Python packages.

- Python Programming Fundamentals (Variables and Datatypes, Data Structures, Conditional and Looping Statements, Functions)
- Python for Data Science - NumPy and Pandas
- Python for Visualization
- Exploratory Data Analysis (Univariate Analysis, Bivariate/Multivariate Analysis, Missing Value Treatment, Outlier Detection and Treatment)
- AI Application Case Studies

Graded Project | FoodHub Order Analysis using Python

Analyze the data of a food aggregator company, answer key questions provided, draw actionable insights, and help the company to improve the business and customer experience.

MODULE 2 MACHINE LEARNING

Understand the concept of learning from data, build linear and non-linear models to capture the relationships between attributes and a known outcome, and discover patterns and segment data with no labels.

- Intro to Supervised Learning - Linear Regression
- Decision Trees (Regression Trees, Logistic Regression)
- K-Means Clustering (Hierarchical Clustering, Dimensionality Reduction, PCA)

Graded Project | Personal Loan Campaign Purchase Prediction

Build a Machine Learning model to identify potential customers for a bank who have a higher probability of purchasing the loan and the driving factors behind the decision making.

MODULE 3 ADVANCED MACHINE LEARNING

Combine the decisions from multiple models using ensemble techniques to improve model performance and make better predictions, and employ feature engineering techniques and hyperparameter tuning to arrive at generalized, robust models to optimize associated business costs.

- Bagging and Random Forest
- Boosting (AdaBoost, Gradient Boosting, XGBoost, Stacking)
- Model Tuning

Graded Project | Credit Card Users Churn Prediction

Analyze the data and come up with a predictive model to determine if a customer will leave the credit card services or not and the reason behind it.

MODULE 4 INTRODUCTION TO NEURAL NETWORKS

In this module, implement neural networks to synthesize knowledge from data, demonstrate an understanding of different optimization algorithms and regularization techniques, and evaluate the factors that contribute to improving performance to build generalized and robust neural network models to solve business problems.

- Introduction to Neural Networks
- Optimizing Neural Networks
- Multi Layer Perceptron
- Neural Network Regularization Techniques

Graded Project | Bank Customer Churn Prediction

Analyze the customer data provided to understand which aspects of the service influence customers and build a neural network model to determine the chances of a customer churning in the next 6 months.

MODULE 5 INTRODUCTION TO COMPUTER VISION

Get introduced to the world of computer vision, demonstrate an understanding of image processing and different methods to extract informative features from images, build Convolutional Neural Networks (CNNs) to unearth hidden patterns in image data, and leverage common CNN architectures to solve image classification problems.

- Introduction to Image Processing
- Introduction to Convolutional Neural Networks
- CNN Architecture
- Transfer Learning

Graded Project | Plant Seedling Classification

Build a robust image classifier using CNNs to efficiently classify different plant seedlings and weeds to improve crop yields and minimize human involvement.

MODULE 6 INTRODUCTION TO NATURAL LANGUAGE PROCESSING

Get introduced to the world of natural language processing, gain a practical understanding of text processing and vectorization methods, gain a practical understanding of the working of different transformer architectures that lie at the core of Large Language Models (LLMs), and design and implement robust NLP solutions using open-source LLMs combined with prompt engineering techniques.

- Overview of Natural Language Processing (NLP)
- Attention Mechanism and Transformer Models
- Word Embeddings
- Large Language Models and Prompt Engineering

Graded Project | e-Commerce Customer Review Sentiment Analysis

Analyze the customer reviews on the portal of an e-Commerce website and build a predictive model that can parse the reviews and predict the sentiment of the customer.

SELF-PACED MODULE

STATISTICAL LEARNING

Perform statistical analysis using Python to evaluate the reliability of a particular business estimate using confidence intervals and test hypotheses (assumptions) before putting them into action and committing resources by analyzing data distributions and performing hypothesis testing.

- Introduction to Inferential Statistics
- Probability Distributions
- Sampling and Central Limit Theorem
- Estimation Theory
- Introduction to Hypothesis Testing
- Common Statistical Tests

Project | E-News Express Landing Page Conversion

Explore the data provided and perform statistical analysis to decide whether the new landing page of an online news portal is effective enough to gather new subscribers as compared to the old one.

SELF-PACED MODULE

RECOMMENDATION SYSTEM

Get introduced to recommendation systems and learn how to build recommendation systems that use past product purchase and satisfaction data to make high-quality personalized recommendations.

- Market Basket Analysis
- Popularity Based and Content Based Recommendation Systems
- Collaborative Filtering
- Hybrid Recommendation Systems

Project | e-Commerce Product Recommendation

Build a recommendation system for an e-Commerce website to provide personalized product recommendations for the customers.

SELF-PACED MODULE

MODEL DEPLOYMENT

Gain an overview of model deployment, how to serialize ML models to make them accessible, and use technologies like Docker and Kubernetes for scaling deployed ML models.

- Model Serialization - Pickling
- Batch Mode and Flask
- Docker and Kubernetes

Please get in touch with a Program Advisor for a detailed module-wise breakdown of the course curriculum.

aiml.utaustin@mygreatlearning.com

A STRUCTURED **LEARNING JOURNEY**

View & Learn Recorded Content

Consume recorded video lectures by UT Austin faculty & industry experts over the week.

Engage in a Mentor Session

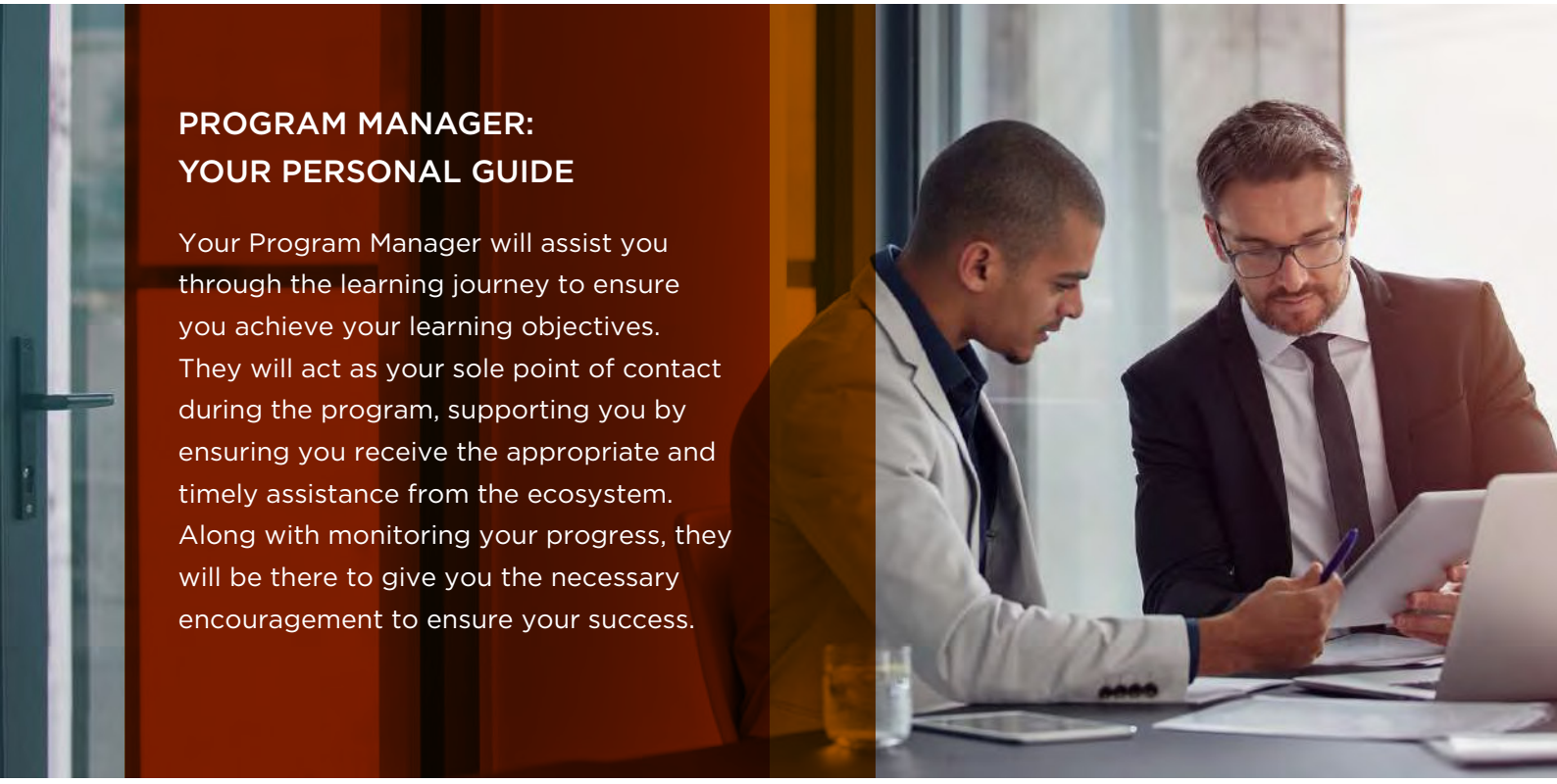
Clarify your doubts and practice on live data-sets with your mentor on the weekend.

Complete a Hands-On Project

Work on a real-world problem to apply concepts and techniques learnt in the module.

Participate in Webinars by UT Austin

Get an insiders' perspective into the industry through webinars with leading UT Austin faculty every month.



PROGRAM MANAGER: YOUR PERSONAL GUIDE

Your Program Manager will assist you through the learning journey to ensure you achieve your learning objectives. They will act as your sole point of contact during the program, supporting you by ensuring you receive the appropriate and timely assistance from the ecosystem. Along with monitoring your progress, they will be there to give you the necessary encouragement to ensure your success.

LEARN FROM THE **BEST OF ACADEMIA**

The program is taught by academic experts in the fields of Artifcial Intelligence and Machine Learning. The faculty's vast experience with research as well as theory in the domains of AI and Machine Learning will be a crucial part of the learning journey that is aimed at inspiring a love for data in you and making you industry-ready.

FACULTY PROFILES

DR. KUMAR MUTHURAMAN
Faculty Director, Center for Research and Analytics - McCombs School of Business
The University of Texas at Austin - H. Timothy (Tim) Harkins Centennial Professor
MS & Ph.D. - Stanford University

DR. DANIEL MITCHELL
Clinical Assistant Professor - McCombs School of Business
Ph.D. - The University of Texas at Austin

DR. BRADFORD TUCKFIELD
Founder & Data Science Consultant
Ph.D. - The Wharton School of the University of Pennsylvania

DR. ABHINANDA SARKAR
Academic Director - Great Learning
B.Stat & M.Stat - Indian Statistical Institute
Ph.D. - Stanford University

PROF. MUKESH RAO
Consultant - Big Data & Machine Learning

BECOME INDUSTRY-READY WITH **LIVE MENTORSHIP**

Along with strong theoretical foundations, hands-on learning goes a long way in preparing you to make data-driven decisions regarding business problems. As you work on real-life projects, you will receive personalized live mentorship every weekend from industry experts in AI and Machine Learning.

MENTOR PROFILES

MARCELO GUARIDO DE ANDRADE
Senior Data Scientist,
Partners in Performance

PRIYANKA SINGHAL
Assistant VP,
US Bank

FRANCK TCHUENTE
Senior Data Scientist,
Maxa

PRABHAT B.
Data Scientist,
Apple

ỌMID BADRETALE
VP Data Scientist,
RBC Capital Markets

AJAY PURUSHOTHAMAN THUNDATHIL
Senior Data Scientist,
Verizon Media

Translate Your Learnings Into Practical Applications

- 28+ live mentorship sessions focused on doubt-resolution and case-study based practice
- Collaborative yet personalized learning in small groups of up to 15 learners
- Network with peers from different geographies and domains
- Work on 8 hands-on projects under the guidance of industry experts
- Hands-on learning with AI practitioners from leading organizations such as, Microsoft, SAP, Verizon, IBM among others

To access more details on the mentored learning model, please get in touch with a Program Advisor at **aiml.utaustin@mygreatlearning.com**

DEDICATED **CAREER SUPPORT**

When you are beginning afresh in a field, insights from someone on the inside can help you get a headstart.

Apart from the immediate result of landing a job, career coaches work with you on the long haul – building your strengths, working on gaps, and developing a strategy to achieve your career goals.

OUR ALUMNI WORK AT

Google
BARCLAYS
BOEING
accenture
IBM
EY Building a better working world
amazon.com
Deloitte.
citigroup
Microsoft
Deutsche Bank
nielsen
PayPal
Walmart

and many more...

LAND YOUR DREAM JOB WITH:

1:1 CAREER SESSIONS

Interact personally with industry professionals to get valuable insights and guidance.

RESUME & LINKEDIN PROFILE REVIEW

Present yourself in the best light through assets that truly showcase your strengths.

INTERVIEW PREPARATION

Get an insiders' perspective to understand what recruiters look for.

E-PORTFOLIO

Build an industry-ready portfolio to showcase your mastery of skills and tools.

ADMISSION PROCESS

ELIGIBILITY

- Bachelor's or Undergraduate degree with at least 50% aggregate marks or equivalent.
- No prior programming experience is needed.

APPLICATION PROCESS

Application Form

Register by filling up the online application form. The program follows a rolling process, so we encourage you to apply early.

Shortlisting and Panel Review

A panel will review your application to determine your fit with the program. They will evaluate you on your academic performance, work experience, and motivation.

Interview/Screening

If shortlisted, you will go through a telephonic screening interview (This may be waived for candidates with strong profiles and experience).

Admissions Offer

After a final admissions committee review, you will receive an offer for a seat in the upcoming cohort of the program.

PROGRAM FEE

USD 4,200

Please get in touch with a Program Advisor for more details on flexible fee payments

PROGRAM **PARTNER**

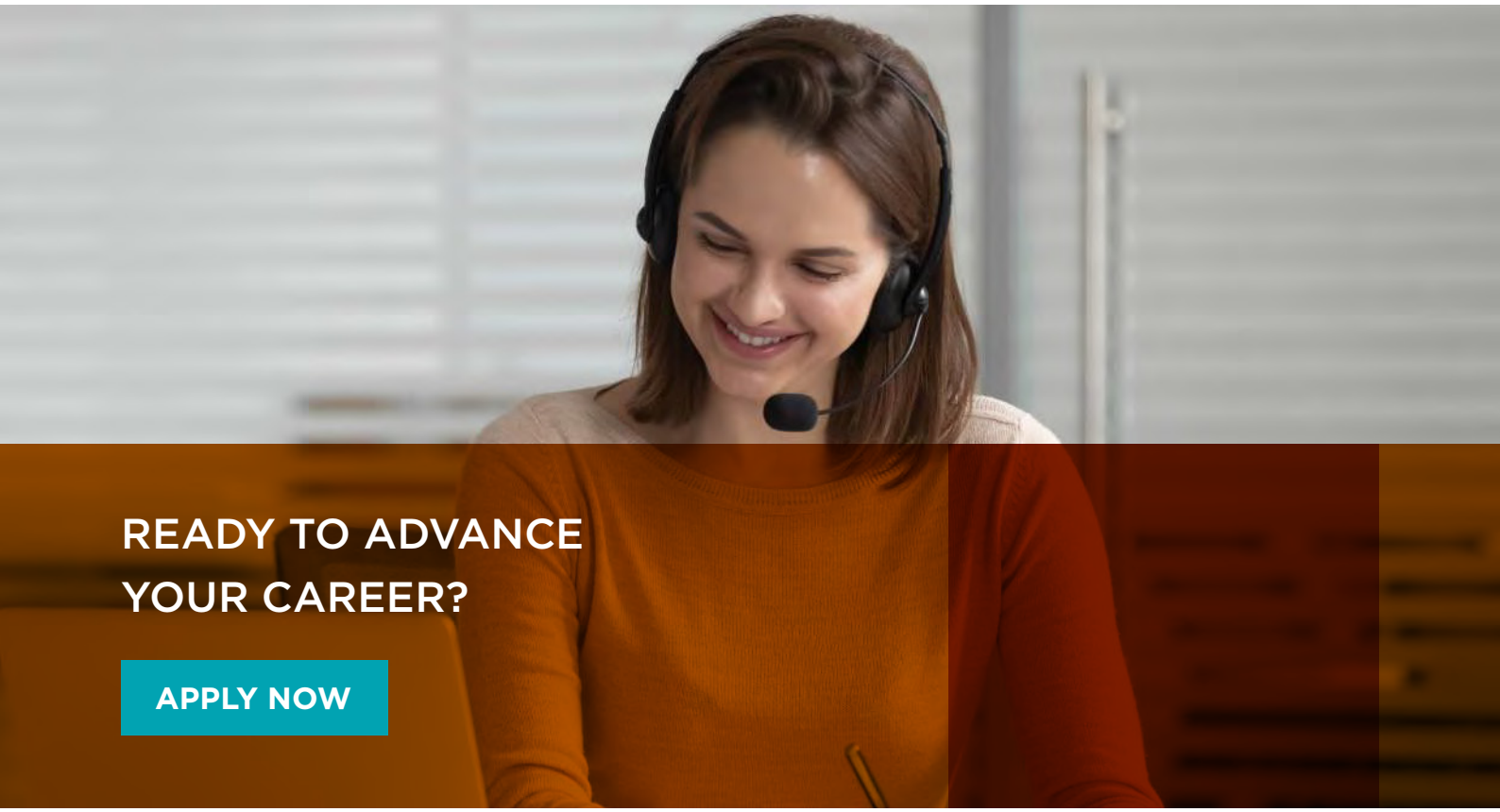
The McCombs School of Business at The University of Texas at Austin is collaborating with Great Learning to deliver this program in Artificial Intelligence and Machine Learning: Business Applications to learners from around the world.

Great Learning is one of the leading ed-tech platforms for professional and higher education. It offers comprehensive, industry-relevant programs in Software Engineering, Business Management, Business Analytics, Data Science, Machine Learning, Artificial Intelligence, Cloud Computing, Cyber Security, Digital Marketing, Design Thinking, and more.

- **9.9 MILLION+ LEARNERS**
- **6700+ INDUSTRY EXPERT MENTORS**
- **170+ COUNTRIES**
- **3500+ HIRING COMPANIES**
- **BEST ED-TECH COMPANY OF THE YEAR***
  *Indian Education Awards 2022 | *EdTech Review Awards 2020
- **BEST ONLINE SKILLS PROVIDER***
  *Education Innovation Awards 2022

Great Learning's programs are developed in collaboration with the world's foremost academic institutions like Stanford University, the University of Texas at Austin, MIT Professional Education, MIT Institute for Data, Systems, and Society (IDSS), Northwestern University, and many more. The programs are constantly reimagined and revamped to address the dynamic needs of the industry.

Having impacted 9.9 million+ learners from over 170+ countries, Great Learning is on a mission to enable transformative learning and career success in the digital economy for professionals and students across the globe.



READY TO ADVANCE YOUR CAREER?

APPLY NOW

CONTACT US

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