CHARTERED
INSTITUTE OF PROFESSIONAL CERTIFICATIONS

CERTIFIED GENERATIVE AI SPECIALIST ™

CGAI ™

Fully Accredited By:

Chartered Institute of Professional Certifications

CPD Certification Service

CGAI™
CERTIFIED GENERATIVE AI SPECIALIST ™

PROGRAM OVERVIEW

Generative artificial intelligence (AI) is **transforming industries by automating complex tasks and augmenting human capabilities.** A recent PwC survey found that 72% of business leaders say AI will enable them to make decisions with more accuracy while reducing human bias. The global generative AI market is projected to grow from $4.3 billion in 2022 to $340 billion by 2030 as organizations increasingly invest in and deploy generative models. This growth underscores the urgent need for data and AI leaders to skill up on generative AI.

This Certified Generative AI (CGAI™) program is designed to equip you with a comprehensive grasp of generative AI's core principles. Through a balanced curriculum of theoretical knowledge and practical skills, you will gain expertise to **transition from traditional machine learning to more advanced generative models for real-world applications.**

This program will cover **foundational neural network architectures and machine learning techniques including supervised, unsupervised, semi-supervised, and reinforcement learning.** You will learn how to **optimize neural network performance and gain knowledge of deep learning architectures** such as Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), Long Short-Term Memory (LSTM) units, and Gated Recurrent Units (GRUs) for sequence-based tasks in **forecasting, sentiment analysis, and content generation.**

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PROGRAM OVERVIEW

Additionally, you will gain a strong foundation in deep learning techniques for natural language processing, computer vision, reinforcement learning, and more.

By the end of the program, you will gain proficiency in **Natural Language Generation (NLG) and cutting-edge NLG models such as GPT and BERT**, as well as advanced methodologies like multimodal models and zero-shot learning. This expertise will empower you to **enhance AI-generated content, pioneering advancements in automation, personalization, and real-time engagement.**

Upon completing the program, you will earn the prestigious **Certified Generative AI Specialist** (CGAI™) designation that will demonstrate your **expertise in generative AI principles and the ability to deploy advanced models**. This CGAI™ credential will distinguish you as an expert in cutting-edge AI technologies, enhancing your credibility and career prospects within the industry.

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KEY SKILLS YOU WILL GAIN

From This Program

ARTIFICIAL INTELLIGENCE
GENERATIVE AI MODELS
MACHINE LEARNING
DEEP LEARNING ARCHITECTURES

NEURAL NETWORK PROFICIENCY
CONVOLUTIONAL NEURAL NETWORKS FOR COMPUTER VISION
RECURRENT NEURAL NETWORKS FOR SEQUENTIAL DATA

LONG SHORT TERM MEMORY (LSTM)
GATED RECURRENT UNITS (GRU) ARCHITECTURES
TRANSFORMERS AND ATTENTION MECHANISMS
PROBABILITY DISTRIBUTIONS

GENERATIVE MODELS
GENERATIVE ADVERSARIAL NETWORKS (GANS) FOR GENERATIVE MODELING
NATURAL LANGUAGE GENERATION (NLG)
PROBABILISTIC GRAPHICAL MODELS (PGMS)

MULTIMODAL LEARNING TECHNIQUES
ETHICS OF AI

YOUR FACULTY DIRECTOR

Prof. Dr. Dr. Ana-Maria Olteteanu

Highly Esteemed AI Expert

Prof. Dr. Dr. Ana-Maria Olteteanu is a seasoned research scientist with an impressive portfolio that includes over 70 research papers published in peer-reviewed journals and a book. Renowned for her work on AI creativity and cognitive systems, **her AI innovations are sought after by over 50 global universities**. A trusted **AI strategist for elite bodies, including the European Commission, she has overseen projects worth millions, ensuring technological advances that harmonize with human-AI interactions.**

In the corporate sphere, she's the catalyst behind several Minimum Viable Products (MVPs), providing transformative AI consultancy, driving innovation, and refining business processes. Prof. Olteteanu champions the evolution of AI tools that synergize with human cognition, aspiring for an enhanced future. Currently, she helms **AI initiatives at Tomorrow University, while also directing the esteemed Wellbeing AI program**.

OUR PARTICIPANTS

Over 70% of FORTUNE 500 Companies Have Attended Our Accredited Programs Before

PROGRAM AGENDA

MODULE 1: INTRODUCTION TO ML AND GENERATIVE AI

Lesson 1: Introduction to Generative AI
Lesson 2: From ML to Generative AI

MODULE 2: BASICS OF NEURAL NETWORKS

Lesson 1: Introduction to Neural Networks
Lesson 2: Neurons and Layers
Lesson 3: Types of Learning - Part 1 - Supervised and Unsupervised
Lesson 4: Types of Learning - Part 2 - Semi-Supervised and Reinforcement Learning
Lesson 5: Activation Functions

MODULE 3: LEARNING TOPICS IN NEURAL NETWORKS

Lesson 1: Learning in Neural Networks
Lesson 2: Examples of Matrix Product, Parametric Size Increases and Dot Product
Lesson 3: Learning Rate Animations
Lesson 4: Gradient Descent and its Variants
Lesson 5: Overfitting, Underfitting, and Techniques to Combat Them
Lesson 6: Regularization Methods

MODULE 4: DEEP LEARNING ARCHITECTURES - CNNS

Lesson 1: Introduction to Deep Learning Architectures
Lesson 2: Introduction to Convolutional Neural Networks
Lesson 3: Diving Deeper into CNN
Lesson 4: Advanced CNNs and Their Applications
Lesson 5: Convolution Demo
Lesson 6: Max Pooling Demo
Lesson 7: Use Cases - Medical Image Analysis with CNNs

MODULE 5: DEEP LEARNING ARCHITECTURES - RNNS

Lesson 1: Introduction to Recurrent Neural Networks
Lesson 2: Long Short Term Memory and Gated Recurrent Units (LSTMs and GRUs)
Lesson 3: Use Case - Stock Market Prediction with RNNs
Lesson 4: Use Cases - Sentiment Analysis, Weather Forecasting, Music Generation
Lesson 5: Introduction to Transformers

PROGRAM AGENDA

MODULE 6: FUNDAMENTALS FOR GENERATIVE MODELS

Lesson 1: Probability Distributions and Generative Models
Lesson 2: Maximum Likelihood Estimation
Lesson 3: Likelihood vs. Probability and Maximum Likelihood Visually Explained
Lesson 4: Use Cases for Maximum Likelihood Estimation
Lesson 5: Variational Inference
Lesson 6: Markov Chains and Hidden Markov Models
Lesson 7: Use Cases for Markov Chains and Hidden Markov Models
Lesson 8: Other Fundamentals of Generative Models

MODULE 7: GENERATIVE ADVERSARIAL NETWORKS

Lesson 1: High Level Introduction to Generative Adversarial Networks
Lesson 2: Understanding Generative Adversarial Networks
Lesson 3: Training Generative Adversarial Networks
Lesson 4: Variants of Generative Adversarial Networks (DCGAN, CycleGAN, StyleGAN, etc.)
Lesson 5: Applications of Generative Adversarial Networks

MODULE 8: NATURAL LANGUAGE GENERATION

Lesson 1: Understanding Natural Language Generation
Lesson 2: Sequence to Sequence Models
Lesson 3: Language Models (GPT, BERT)
Lesson 4: Use Cases and Applications of Natural Language Generation

MODULE 9: MULTIMODAL MODELS AND ZERO-SHOT LEARNING

Lesson 1: Understanding Multimodal Models
Lesson 2: Multimodal Learning Techniques
Lesson 3: Introduction to Zero-Shot Learning
Lesson 4: Applications of Multimodal Models and Zero-Shot Learning

MODULE 10: ETHICS OF ARTIFICIAL INTELLIGENCE AND GENERATIVE MODELS

Lesson 1: Understanding the Ethical Implications of AI
Lesson 2: Bias and Fairness in AI - Part 1
Lesson 3: Bias and Fairness in AI - Part 2
Lesson 4: Privacy and Security in AI
Lesson 5: Responsible AI Practices

YOUR CHARTER DESIGNATION

Chartered Institute of Professional Certification's programs are unique as they provide you with professional charter designation and mark that can be used across your lifetime once your have completed our programs.

Upon completing the program and passing the exam, you will receive the prestigious **Certified Generative AI Specialist (CGAI™)** designation. Developed by the esteemed **Chartered Institute of Professional Certifications**, a leading authority in professional certifications, this industry-recognized trademarked charter distinguishes your profound expertise in the theoretical and practical deployment of advanced generative AI models for optimal applications. The program's content has been independently accredited and certified by **CPD**, ensuring that it meets the highest standards in continuing professional development. This distinguished designation will not only elevate your credibility but also enhance your marketability to potential employers or clients, making you stand out as a highly skilled and knowledgeable AI expert.

ABOUT US

49,525 Business Leaders Have Attained Their Chartered Certifications Since 2009

390 Certified and Fully Accredited Programs

87% Chartered Leaders Have Reported Career Promotions and Enhancements

Chartered Institute of Professional Certifications

All of Chartered Institute of Professional Certifications programs are fully accredited programs. The professional charters and designations are trademarked credentials that can only be used by professionals who have completed and passed our accredited program. It is also independently accredited by CPD as adhering to the highest standards of continuing professional principles.

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OUR FACULTY DIRECTORS

We Collaborate With Instructors From Renowned Institutions

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Columbia Business School

London Business School

CONTACT US TODAY

We Thank You for Your Ongoing Support of Our Programs

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