

**CHARTERED**  
INSTITUTE OF PROFESSIONAL CERTIFICATIONS

# CERTIFIED GENERATIVE AI SPECIALIST™

CGAI™

Fully Accredited  
By:

Chartered Institute of  
Professional Certifications

CPD  
Certification Service



# 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**.

## ACCREDITATIONS



4.8



4.6



# 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.

## ACCREDITATIONS



4.8



4.6



# KEY SKILLS YOU WILL GAIN

## From This Program



# YOUR FACULTY DIRECTOR



## Prof. Dr. Dr. Ana-Maria Olteteanu

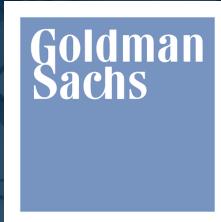
### Highly Esteemed AI Expert

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.

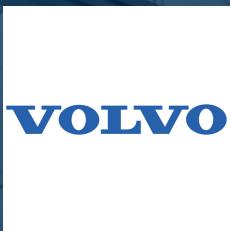
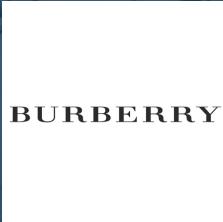
In the corporate sphere, she's the catalyst behind several Minimum Viable Products (MVPs), providing transformative AI consultancy, driving innovation, and refining business processes. Prof. Olteteanu champions the evolution of AI tools that synergize with human cognition, aspiring for an enhanced future. 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



SAMSUNG



# 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



By the vested power in the Board of Governors of Chartered Institute of Professional Certifications, the Advisory Board, Faculty and Curriculum Committee, do hereby certify

**Juliana Silva**

Has Been Conferred the Designation of

**Certified Generative AI Specialist™  
CGAI™**

Has satisfied all the examination and experience requirements, and is duly admitted and licensed to use this charter, board certificate, and membership credentials  
And has committed to abide by the membership declaration of ethics, rules of professional conduct and continuing education requirements as a member of Chartered Institute of Professional Certifications

Bob Yean Lo

Chair of the Board



Yenny Ang

Director

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 you 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  
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390

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Chartered Leaders Have  
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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  
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Renowned Institutions



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School

# CONTACT US TODAY

We Thank You for Your Ongoing Support  
of Our Programs

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