



AI+ Game Design Practitioner™

Certification



Executive Summary

The AI+ Game Design Practitioner Certification equips professionals with cutting-edge knowledge at the intersection of artificial intelligence and interactive entertainment. Covering AI-driven game design, procedural content generation, player behavior modeling, and real-time decision-making, this certification prepares learners to innovate within game development and gaming experiences. Through hands-on projects and real-world applications, participants gain skills in machine learning, neural networks, and reinforcement learning tailored for gaming environments. Ideal for developers, designers, and tech enthusiasts, this program ensures that participants are industry-ready to integrate AI technologies that enhance gameplay, personalization, and player engagement in next-generation gaming ecosystems.

Prerequisites

- **1. Basic Programming Skills** – Comfortable with Python or similar languages.
- **2. Foundational Math Knowledge** – Understanding of linear algebra and probability.
- **3. Intro to Machine Learning** – Familiarity with ML concepts and algorithms.
- **4. Game Development Exposure** – Experience with Unity or Unreal Engine basics.
- **5. Problem-Solving Mindset** – Ability to approach challenges creatively and logically.

Exam Blueprint

Number
of Questions

50

Passing
Score

35/50 or 70%

Duration

90 Minutes

Format

**Online via AI
Proctoring platform**

Question Type

**Multiple Choice/Multiple
Response**

Exam Overview

Module	Weight
Introduction to AI in Games	5%
Game Design Principles using AI	11%
Foundations of AI in Gaming	12%
Reinforcement Learning Fundamentals	12%
Planning and Decision Making in Games	12%
AI Techniques in 2D/3D Virtual Gaming Environments Basic	12%
Adaptive Systems and Dynamic Difficulty	12%
Future of AI in Gaming	12%
Capstone Project	12%
	100%

 **AI CERTS®****AI⁺**Game Design
Practitioner™

Certification Modules

Module 1

Introduction to AI in Games

1.1 What is AI?

1.2 Evolution of AI in the Gaming Industry

1.3 Types of AI in Games

1.4 Benefits, Challenges, and Innovations in Game AI

Module 2

Game Design Principles using AI

2.1 Understanding Game Mechanics and Player Experience

2.2 Role of AI in Gameplay and Narrative Design

2.3 Designing Game Environments for AI Interaction

2.4 AI-Driven Behavior vs Traditional Scripted Logic

2.5 Case Study: Case Study: Dynamic AI and Narrative Adaptation in Middle earth: Shadow of Mordor

2.6 Hands-On Exercise: Designing Adaptive NPC Behavior and Environment Interaction

Module 3

Foundations of AI in Gaming

3.1 Core AI Concepts for Gaming

3.2 Search Algorithms and Pathfinding

3.3 AI Behavior Modeling and Procedural Content Generation (PCG)

3.4 Introduction to Machine Learning and Reinforcement Learning

3.5 Case Study: AI in Minecraft — Procedural Content Generation and Agent Navigation

3.6 Hands-On: Implementing A* Pathfinding and FSM for NPC Behavior

Module 4

Reinforcement Learning Fundamentals

4.1 Core Concepts: States, Actions, Rewards, Policies, Q-Learning:

4.2 Exploration versus Exploitation in Learning Systems:

4.3 Overview of Deep Q Networks (DQN) and Policy Gradient Methods

4.4 Case Study: Reinforcement Learning in DeepMind's AlphaGo

4.5 Hands-On: Train a Reinforcement Learning Model on OpenAI Gym's GridWorld

Module 5

Planning and Decision Making in Games

5.1 Minimax Algorithm and Alpha-Beta Pruning

5.2 Monte Carlo Tree Search (MCTS)

5.3 Applications in Board Games and Real-Time Strategy (RTS) Games

5.4 Case Study: Strategic AI in StarCraft II – Combining Planning Algorithms for Real-Time Strategy

5.5 Hands-on Implementation: Guides on implementing the Minimax algorithm for Tic-Tac-Toe

Module 6

AI Techniques in 2D/3D Virtual Gaming Environments Basic

6.1 Overview of 2D and 3D Game Environments

6.2 Environment Representation Techniques

6.3 Navigation and Pathfinding in 2D/3D Spaces

6.4 Interaction and Behavior Systems in Virtual Environments

6.5 Case Study: Navigation and Interaction AI in The Legend of Zelda: Breath of the Wild

6.6 Hands-On: Building Basic Navigation and Interaction in 2D and 3D Game Environments

Module 7

Adaptive Systems and Dynamic Difficulty

7.1 Adaptive Systems Overview

7.2 Dynamic Difficulty Adjustment (DDA) Principles

7.3 Adaptive Storytelling, Personalization, and Player Profiling

7.4 AI Techniques in Adaptive Systems

7.5 Implementation Strategies and Tools

7.6 Case Study: Dynamic Enemy Management and Replayability with Left 4 Dead's AI Director

7.7 Hands-On: Developing an Adaptive Dynamic Difficulty System in Unity

Module 8

Future of AI in Gaming

8.1 Generalist AI Agents and Transfer Learning

8.2 AI-Powered Game Design and Testing Tools

8.3 Ethical Considerations and AI Transparency

8.4 Emerging Technologies: VR/AR AI and AI in Esports Coaching

Module 9

Capstone Project

Additional Module

AI Agent Module – AI+ Game Design Practitioner

10.1 What Are AI Agents?

10.2 How Does an AI Agent Work in Gaming?

10.3 Core Characteristics of AI Agents

10.4 Importance of AI Agents in Gaming

10.5 Significance of AI Agents in Player Experience & Business Outcomes

10.6 Types of AI Agents?

10.7 Applications and Trends of AI Agents in Gaming

10.8 Case Study: AI-Driven Player Retention at Activision Blizzard

10.9 Hands-On Lab: Build an AI Agent: Player Retention Risk Agent (Zapier)

Certification Outcome for Participants

Upon completing the AI+ Game Design Practitioner certification, participants will develop a strong grasp of how artificial intelligence transforms modern game development. The course explores key areas such as intelligent NPC design, procedural content generation, player behavior modeling, and adaptive game mechanics. Learners gain hands-on experience using AI frameworks and tools to build immersive, responsive gaming environments. Through real-world applications, they learn to enhance gameplay personalization, balance difficulty levels, and create dynamic storytelling. The program also delves into ethical considerations, fairness in game AI, and responsible use of player data. By course end, participants are ready to innovate in the evolving world of AI-powered gaming.



Market Insight

The gaming industry is rapidly adopting AI to create smarter, immersive, and personalized experiences. Demand for professionals skilled in AI-driven game mechanics, player modeling, and automation is rising across studios, indie developers, and esports platforms.



Value Proposition

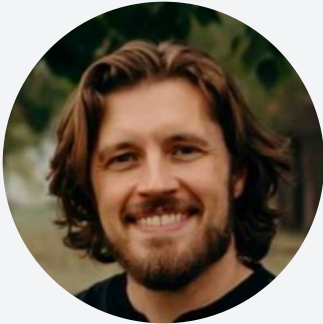
AI+ Game Design Practitioner Certification empowers learners with practical AI tools and gaming-focused applications, bridging theory and industry needs. It prepares professionals to lead innovation in game design, development, and player engagement using cutting-edge artificial intelligence technologies.



Additional Features

Includes hands-on labs, real-world projects, expert-led sessions, and access to AI gaming APIs. Learners also benefit from career resources, a global peer community, and opportunities to showcase AI-powered game prototypes through portfolio-building exercises.

AI Experts



Jason Kellington

AI Expert

As a consultant, trainer, and technical writer with more than 25 years of experience in IT, I specialize in the development and delivery of solutions focused on effective and efficient enterprise IT.



Justin Frébault

AI Expert

I'm a boutique data consultant specializing in data mesh and lakehouse solutions. I've dedicated my career to helping organizations transform their approach to data, moving beyond mere knowledge.



J Tom Kinser

AI Expert

I have over forty years of experience in software development, data engineering, management, and technical training. I am a Microsoft Certified Trainer and a software developer, holding multiple certifications.



Terumi Laskowsky

AI Expert

Country Manager for Global Consulting Services in Japan, Specialties: Information Security (Compliance, Policy, Application, Host, Network)



aicerts.ai

Contact

252 West 37th St., Suite 1200W
New York, NY 10018

