AI+ Game Design Agent Specialty™(AGAMINGD)

ID AGAMINGD **Price** CHF 995.—(excl. VAT) **Duration** 1 days

Who should attend

- Aspiring Game Designers – Perfect for those who want to integrate AI into storytelling, mechanics, and player experiences.
- AI Enthusiasts – Ideal for learners eager to explore how AI can enhance creativity and interactivity in games.
- Game Developers – Great for professionals aiming to build intelligent systems, adaptive gameplay, and smart NPCs.
- Digital Artists – Excellent for creatives interested in using AI to design immersive environments and dynamic game elements.
- Tech Entrepreneurs – Ideal for innovators looking to leverage AI in building the next generation of interactive gaming platforms.

Prerequisites

Basic knowledge of programming, game design fundamentals, and core mathematical concepts is recommended. Ideal for learners with an interest in AI principles, algorithmic thinking, and creative problem-solving to design intelligent, dynamic, and interactive game experiences.

Course Objectives

- Next-Gen Game Creation Learn to design intelligent, adaptive games that respond dynamically to player behavior and choices.
- Industry-Relevant Expertise Gain skills at the intersection of AI, creativity, and game design—highly sought after in modern studios.
- Hands-On Innovation Build real-world projects integrating AI-driven storytelling, procedural worlds, and smart NPC systems.
- Career Acceleration Stand out for roles in AI game development, systems design, and creative technology leadership.
- Future-Ready Skills Prepare for the evolving gaming landscape where AI shapes creativity, engagement, and interactive storytelling.

Course Content

Module 1: Understanding AI Agents

- 1.1 What are AI Agents?
- 1.2 Agent Architectures and Environments
- 1.3 Decision Making and Behavior Basics
- 1.4 Introduction to Multi-Agent Systems
- 1.5 Case Study: Pac-Man Ghost AI
- 1.6 Hands On: Build a Basic Reactive AI Agent Navigating a Simple Environment Using Pygame

Module 2: Introduction to AI Game Agent

- 2.1 What is an AI Game Agent?
- 2.2 Key Components of AI Game Agent
- 2.3 Agent Architectures
- 2.4 AI Game Agent Behaviors
- 2.5 Case Study: Racing Games (e.g., Mario Kart, Forza Horizon)
- 2.6 Hands-On: Creating a Simple Box Movement Game in Playcanvas

Module 3: Reinforcement Learning in Game Design

- 3.1 Basics of Reinforcement Learning
- 3.2 Key Algorithms: Q-Learning and SARSA
- 3.3 Applying RL to Game Agents
- 3.4 Challenges and Solutions in Game-based RL
- 3.5 Case Study: AlphaZero in Games: Mastering Chess, Shogi, and Go through Self-Play and Reinforcement Learning
- 3.6 Hands On: Train a simple RL agent in OpenAI Gym environment

Module 4: AI for NPCs and Pathfinding

- 4.1 Understanding NPCs as AI Agents
- 4.2 Simple AI Techniques for NPCs
- 4.3 Pathfinding Algorithms
- 4.4 Obstacle Avoidance and Movement Optimization
- 4.5 Case Study
- 4.6 Hands-On

Module 5: AI for Strategic Decision-Making

- 5.1 Decision Trees and Minimax for Game AI
- 5.2 Monte Carlo Tree Search (MCTS) for AI Agent
- 5.3 Utility-Based Decision Making for Game AI

- 5.4 AI in Real-Time Strategy (RTS) Games
- 5.5 Case Study: StarCraft II AI by DeepMind
- 5.6 Hands-On: Implement a Basic MCTS Agent for Tic-Tac-Toe Using Pygame

Module 6: AI Game Agent in 3D Virtual Environments

- 6.1 3D Environment Representation and Challenges for AI Agents
- 6.2 Navigation Mesh Generation for AI Agents in 3D
- 6.3 Complex Agent Behaviors in 3D Worlds
- 6.4 Case Study: The Last of Us
- 6.5 Hands On: Develop a 3D AI Agent with Navigation and Interaction in Unity Using NavMesh and C#

Module 7: Future Trends in AI Game Design

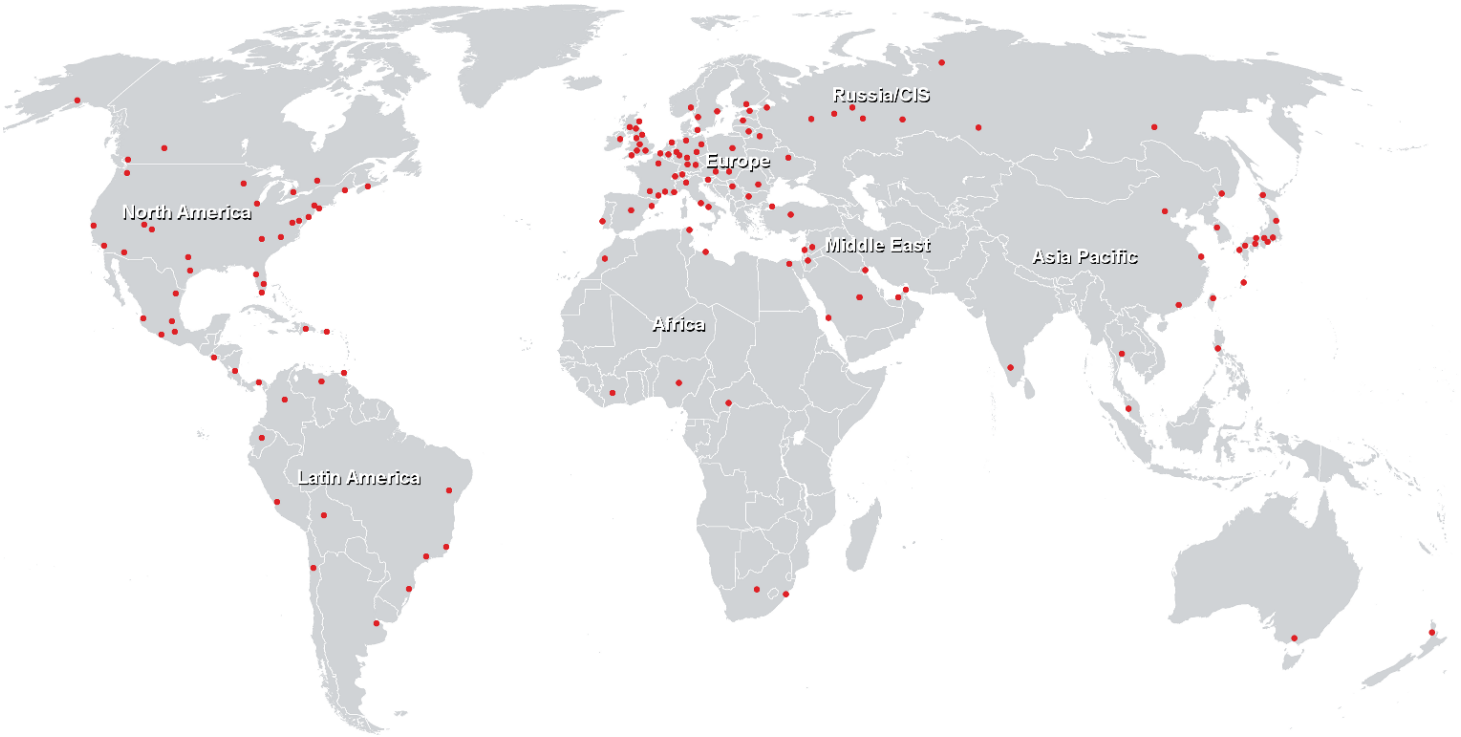
- 7.1 Current and Future AI Trends
- 7.2 The Future of Generalist AI in Gaming
- 7.3 Case Study

Module 8: Capstone Project

- 8.1. Task Description
- 8.2. Practical Implementation
- 8.3. Testing and Debugging
- 8.4. Hands-on

AI+ Game Design Agent Specialty™(AGAMINGD)

Training Centres worldwide





Fast Lane Institute for Knowledge Transfer (Switzerland) AG

Husacherstrasse 3
CH-8304 Wallisellen
Tel. +41 44 832 50 80

info@flane.ch, https://www.flane.ch