

1. Exercises, Quizzes, Flashcards & Glossary

Number of Questions

2. Expert Instructor-Led Training

3. ADA Compliant & JAWS Compatible Platform

4. State of the Art Educator Tools

5. Award Winning Learning Platform (LMS)

6. Chapter & Lessons

Syllabus

Chapter 1: Foundations of AI, ML, and Generative Systems

Chapter 2: Evolution of Machine Learning to Deep Learning

Chapter 3: Development of Generative Models

Chapter 4: Rise of GPT and the Transformer Revolution

Chapter 5: Inside Transformer Architecture & the GPT Family

Chapter 6: The Prompt Ecosystem

Chapter 7: Prompt Types and When to Use Them

Chapter 8: Tokens and Constraints in Prompt Design

Chapter 9: Efficiency, Syntax and Structure in Prompt Engineering

Chapter 10: Techniques and Strategies for Professional Prompt Engineering

Chapter 11: Tools and Platforms for Prompt Engineering

Chapter 12: Applied Prompt Engineering in Real Products

Chapter 13: Ethics, Bias & Responsible Prompt Practices

Chapter 14: Cost Management & Prompt Economics

Chapter 15: Future Directions in AI, ML and Prompt Engineering

Chapter 16: Legal and Regulatory Framework for AI

Chapter 17: Build an Enterprise Prompt System (Capstone Project)

Videos and How To

7. Performance Based labs

Lab Tasks

Here's what you get

1. Exercises

There is no limit to the number of times learners can attempt these. Exercises come with detailed remediation, which ensures that learners are confident on the topic before proceeding.

85
EXERCISES

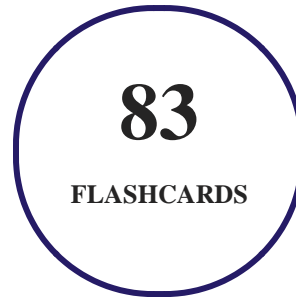
2. Quiz

Quizzes test your knowledge on the topics of the exam when you go through the course material. There is no limit to the number of times you can attempt it.

189
QUIZ

3. flashcards

Flashcards are effective memory-aiding tools that help you learn complex topics easily. The flashcard will help you in memorizing definitions, terminologies, key concepts, and more. There is no limit to the number of times learners can attempt these. Flashcards help master the key concepts.



4. Glossary of terms

uCertify provides detailed explanations of concepts relevant to the course through Glossary. It contains a list of frequently used terminologies along with its detailed explanation. Glossary defines the key terms.



5. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

6. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

7. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

8. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**
 1. Best Postsecondary Learning Solution
- **2015**
 1. Best Education Solution

2. Best Virtual Learning Solution
3. Best Student Assessment Solution
4. Best Postsecondary Learning Solution
5. Best Career and Workforce Readiness Solution
6. Best Instructional Solution in Other Curriculum Areas
7. Best Corporate Learning/Workforce Development Solution

- **2016**

1. Best Virtual Learning Solution
2. Best Education Cloud-based Solution
3. Best College and Career Readiness Solution
4. Best Corporate / Workforce Learning Solution
5. Best Postsecondary Learning Content Solution
6. Best Postsecondary LMS or Learning Platform
7. Best Learning Relationship Management Solution

- **2017**

1. Best Overall Education Solution
2. Best Student Assessment Solution
3. Best Corporate/Workforce Learning Solution
4. Best Higher Education LMS or Learning Platform

- **2018**

1. Best Higher Education LMS or Learning Platform
2. Best Instructional Solution in Other Curriculum Areas
3. Best Learning Relationship Management Solution

- **2019**

1. Best Virtual Learning Solution
2. Best Content Authoring Development or Curation Solution
3. Best Higher Education Learning Management Solution (LMS)

- **2020**

1. Best College and Career Readiness Solution
2. Best Cross-Curricular Solution
3. Best Virtual Learning Solution

9. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

Syllabus

Chapter 1: Foundations of AI, ML, and Generative Systems

- Why Foundations Matter?
- A Short History of Artificial Intelligence
- Understanding Machine Learning: From Instructions to Experience
- Deep Learning: How Neural Networks See Patterns
- The Emergence of Generative AI
- A Unified View: AI, ML, DL and Generative AI
- Troubleshooting Misconceptions

- Hands-On Lab Exercise
- Key takeaways

Chapter 2: Evolution of Machine Learning to Deep Learning

- From Rule-Based AI to Statistical Learning
- The Shift to Machine Learning (The Statistical Era)
- Neural Networks and Backpropagation: The First Major Breakthrough
- Big Data and GPU/TPU Acceleration: The Deep Learning Revolution
- Scaling Laws and the Emergence of Modern AI
- Hands-On Lab (Type A): Simulating a Tiny Feed-Forward Network
- Common Misconceptions and Pitfalls
- Hands-On Lab Exercise
- Key Takeaways

Chapter 3: Development of Generative Models

- Why Generative Models Were Developed
- Generative vs. Discriminative Models
- Classical Generative Models
- Autoregressive LLMs

- Summary Diagram: Generative Model Family Tree
- Hands-On Lab Exercise
- Key takeaways

Chapter 4: Rise of GPT and the Transformer Revolution

- Why Transformers Solved Long-Range Dependencies
- Self-Attention, Multi-Head Attention and Positional Encoding
- Evolution of GPT
- Breakthrough Models
- Impact of scaling laws
- Simplified Transformer Block Diagram
- Hands-On Lab Exercise
- Key takeaways

Chapter 5: Inside Transformer Architecture & the GPT Family

- Tokenization: Breaking Language Into Pieces
- Embeddings: Turning Tokens Into Meaning
- Attention: Where the Model “Looks” to Understand Context

- Logits: How the Model Predicts the Next Token
- How GPT Is Trained: Data, Compute, and Loss
- Transfer Learning and Fine-Tuning
- Fine-Tuning LLMs in the Enterprise
- Comparing GPT With Earlier AI Models
- Real-World Applications of GPT
- Hands-On Lab (Type A): Visualizing Tokens & Attention
- Key takeaways

Chapter 6: The Prompt Ecosystem

- What Is a Prompt Ecosystem?
- How Prompts Influence AI Outcomes?
- Anatomy of a Prompt
- Types of Prompt Structures
- Iteration, Refinement, and Constraints
- Hands-On Lab (Type A): Build & Refine a High-Impact Prompt
- Troubleshooting Prompt Issues
- Hands-On Lab Exercise

- Key takeaways

Chapter 7: Prompt Types and When to Use Them

- Open-Ended vs. Closed-Ended Prompts
- Exploratory Prompts
- Multi-Modal Prompts
- Contextual Prompts
- Procedural and Chain Prompts
- Adaptive Prompts (Dynamic State Prompts)
- Hands-On Lab (Type B): Classify Prompt Types from Real Examples
- Hands-On Lab Exercise
- Key takeaways

Chapter 8: Tokens and Constraints in Prompt Design

- What Is a Token and Why Does it Matter?
- Tokenization in the Real World
- Token Limits, Cost, and Memory
- Designing Effective Prompts Under Constraints
- Case Study: GPT-4 Token Optimization

- Hands-On Lab (Type B): Rewrite Long Prompts into Optimized Prompts
- Key takeaways

Chapter 9: Efficiency, Syntax and Structure in Prompt Engineering

- Why Syntax Changes Outputs?
- The Role of Punctuation, Lists, and Sequencing
- Meta-Prompting: Prompts About Prompts
- Balancing Simplicity and Complexity
- Efficient Prompts for Performance and Cost
- Hands-On Lab (Type B): Syntax Optimization & Efficiency
- Checklist: Syntax Best Practices
- Key takeaways

Chapter 10: Techniques and Strategies for Professional Prompt Engineering

- Iterative Refinement
- Prompt Chaining and Multi-Step Reasoning
- Multi-Agent Orchestration with Prompts
- Multi-Turn Conversation Strategies

- Zero-Shot and Few-Shot Prompting
- Prompt Tuning and Embeddings
- Hands-On Lab (Type C): Build a Mini Multi-Step Prompt Workflow
- Key takeaways

Chapter 11: Tools and Platforms for Prompt Engineering

- OpenAI: ChatGPT, Playground, and API
- Google Gemini, Microsoft Copilot, Anthropic Claude and Meta LLaMA
- HuggingFace and LangChain
- Writing, Testing, and Debugging Prompts
- Integration of Prompts Into Workflows and Automation
- Hands-On Lab (Type B): Build a Simple Assistant in Playground
- Key takeaways

Chapter 12: Applied Prompt Engineering in Real Products

- Content Generation Systems
- Chatbots: The Most Common Applied Use Case
- Customer Support Flows
- Documentation Automation

- Retrieval-Augmented Generation (RAG) Fundamentals
- Interactive Querying Systems
- Advanced Embeddings and Document Chunking
- Multi-Modal Use Cases
- PROJECT (Type C): Build a Simple Real Chatbot Using Prompts
- Key takeaways

Chapter 13: Ethics, Bias & Responsible Prompt Practices

- Fairness, Transparency and Accountability in Prompting
- Prompt-Induced Bias
- Data Privacy Issues in Prompt Engineering
- Avoiding Harmful Instructions
- Case Studies
- Ethical Prompting Checklist
- Key Takeaways

Chapter 14: Cost Management & Prompt Economics

- API Pricing and Token Economics

- Reducing Cost via Better Prompt Design
- Batch Prompting and Caching
- Model Selection as a Cost Strategy
- Cloud, Multi-Cloud and On-Prem Considerations
- LLMOps and Enterprise Deployment
- Cost-Optimized Prompting Framework
- Key takeaways

Chapter 15: Future Directions in AI, ML and Prompt Engineering

- Next-Generation Model Architectures (Beyond Transformers)
- Multi-Agent Systems (Teams of AIs Working Together)
- Personalized AI and Continuous Context Memory
- AR/VR and Evolution of Prompt-based Interaction
- AI for Social Good
- Infographic: "What's Coming After GPT-5?"
- Key takeaways

Chapter 16: Legal and Regulatory Framework for AI

- National and International AI Laws

- Intellectual Property (IP) in AI-Generated Content
- Data Privacy and Security Requirements
- Liability in AI Outputs
- Governance of Prompt-Driven Systems
- Testing, Monitoring and Evaluation for LLM Systems
- Risk Management and Compliance
- Global AI Safety and Accountability Movement
- Key takeaways

Chapter 17: Build an Enterprise Prompt System (Capstone Project)

- Define a Real Business Problem
- Build a Prompt Framework
- Implement Workflow and Iterations
- Test Cross-Platform
- Evaluate Ethics, Cost and Performance
- Present the Solution
- Key takeaways

10. Performance Based Labs

uCertify's performance-based labs are simulators that provides virtual environment. Labs deliver hands on experience with minimal risk and thus replace expensive physical labs. uCertify Labs are cloud-based, device-enabled and can be easily integrated with an LMS. Features of uCertify labs:

- Provide hands-on experience in a safe, online environment
- Labs simulate real world, hardware, software & CLI environment
- Flexible and inexpensive alternative to physical Labs
- Comes with well-organized component library for every task
- Highly interactive - learn by doing
- Explanations and remediation available
- Videos on how to perform

Lab Tasks

- Understanding AI Systems for Better Decision-Making
- Creating a Machine Learning Classification Pipeline
- Evolving Fraud Detection from Rules to Learning Systems
- Creating a Convolutional Neural Network for Digit Classification
- Transitioning from Predictive Models to Generative Intelligence
- Creating a Transformer-Based NLP Pipeline
- Upgrading NLP Systems at LexiCorp
- Creating a Prompt Engineering Workflow Using LLMs
- Understanding Tokenization in LLM
- Visualizing Tokenization, Embeddings, and Attention in Transformer Models
- Building and Refining High-Impact Summarization Prompts
- Designing Multi-Turn Conversations and Chaining Prompts with LLMs
- Applying and Comparing Core Prompt Types
- Building an Enterprise Multi-Modal AI Assistant
- Managing Token Efficiency at InsightAI
- Diagnosing a Business Problem and Simulating Solutions
- Understanding Prompt Failure at InsightCorp

- Optimizing Prompt Syntax for Maximum Efficiency
- Optimizing Enterprise AI Workflows with Structured Prompting
- Building a Multi-Step Prompt Workflow
- Designing Enterprise AI Workflows with Generative AI Platforms
- Building and Testing a Prompt Framework for a Business Function
- Building Reliable Enterprise Knowledge Systems with RAG
- Building a Simple Real Chatbot Using Prompts
- Designing Ethical Prompts for Customer-Facing AI
- Strengthening Ethical Prompting at SecureMind AI
- Optimizing AI Costs at IntelliServe
- Charting the Evolution of AI and Prompt Engineering
- Implementing Trustworthy and Compliant AI Practices
- Governing AI Systems for Responsible Deployment
- Designing AI Workflows for Better Automation
- Building an Enterprise Prompt System

Here's what you get



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