

uCertify

Course Outline

Machine Learning for Finance



04 Aug 2025

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: Preface

Chapter 2: Introduction

Chapter 3: Naive Bayes, Normal Distribution, and Automatic Clustering

Chapter 4: Machine Learning for Data Structuring

Chapter 5: Parsing Data Using NLP

Chapter 6: Computer Vision

Chapter 7: Neural Network, GBM, and Gradient Descent

Chapter 8: Sequence Modeling

Chapter 9: Reinforcement Learning for Financial Markets

Chapter 10: Finance Use Cases

Chapter 11: Impact of Machine Learning on FinTech

Chapter 12: Machine Learning in Finance

Chapter 13: eKYC and Anti-Fraud Policy

Chapter 14: Uses of Data Mining and Data Visualization

Chapter 15: Advantages and Disadvantages of Machine Learning

Chapter 16: Applications of Machine Learning in Other Industries

Chapter 17: Ethical Considerations in Artificial Intelligence

Chapter 18: Artificial Intelligence in Banking

Chapter 19: Common Machine Learning Algorithms

Chapter 20: Frequently Asked Questions

1. 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.

2. 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.

3. 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.

4. 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

5. 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: Preface

Chapter 2: Introduction

- Introduction

- How machines are taught
- Factors contributing to the success of machine learning
- Machine learning and artificial intelligence
- Machine learning and deep learning
- Machine learning and statistics
- Machine learning and data mining
- Machine learning in finance
- Importance of machine learning in finance
- Robo-warning
- How to utilize machine learning in finance
- Utilize outsider machine learning arrangements
- Development and combination
- How is machine learning used today
- Conclusion

Chapter 3: Naive Bayes, Normal Distribution, and Automatic Clustering

- Introduction
- Naive Bayes
- Normal distribution

- Automatic cluster detection in data mining
- Application of machine learning in cybersecurity
- Conclusion

Chapter 4: Machine Learning for Data Structuring

- Introduction
- Data structuring
- The future of big data
- Structured and unstructured data
- Conclusion

Chapter 5: Parsing Data Using NLP

- Introduction
- Uses of NLP
- Key advantages of NLP
- Data handling in NLP
- NLP applications
- Conclusion

Chapter 6: Computer Vision

- Introduction
- Computer vision application
- Neural networks in computer vision
- Overview of computer vision
- Image recognition
- Biometric recognition
- Software vulnerabilities
- Conclusion

Chapter 7: Neural Network, GBM, and Gradient Descent

- Introduction
- Working of neural networks
- Types of neural networks in AI
- Benefits of using artificial neural networks
- Gradient boosting algorithms
- Conclusion

Chapter 8: Sequence Modeling

- Introduction

- Word embedding
- Feed-forward neural network algorithm
- Convolutional neural network algorithm
- Recurrent neural networks (RNN) algorithm
- Conditional random field (CRF) algorithm
- Modeling procedure
- Conclusion

Chapter 9: Reinforcement Learning for Financial Markets

- Introduction
- Problem types in machine learning
- Identifying key predictors (data reduction)
- Learning from experience (reinforcement learning)
- Reinforcement learning algorithms
- Types of reinforcement learning
- Applications of reinforcement learning in real life
- Conclusion

Chapter 10: Finance Use Cases

- Introduction
- Technology and finance
- Automation
- The impact of FinTech
- Guidelines to live by
- Innovative technologies
- Digital bank
- AI as a strategy at the top level
- Development status of different AI technologies
- Risk management
- Fraud detection and prevention
- Improving the truth of financial rules and designs
- Trading
- AI in banking
- Conclusion

Chapter 11: Impact of Machine Learning on FinTech

- Introduction

- Overview of FinTech companies
- Impact of technology
- Challenges
- Conclusion

Chapter 12: Machine Learning in Finance

- Introduction
- Machine learning use cases in banking
- Security
- Guaranteeing and credit scoring
- Algorithmic exchanging
- Robo-advisors
- Utilize outsider machine learning arrangements
- Applications of machine learning
- Current financial applications
- Machine learning and cryptocurrencies

Chapter 13: eKYC and Anti-Fraud Policy

- Introduction

- Big data analytics: True Buzzword of today
- How criminals obtain information for online banking
- Common ways in which information can be stolen
- ATMs
- Security measures
- Conclusion

Chapter 14: Uses of Data Mining and Data Visualization

- Introduction
- Data visualization
- Data mining
- Future health care
- Education
- Customer relationship management
- Criminal investigation
- Fraud detection
- Customer segmentation
- Intrusion detection
- Lie detection

- Conclusion

Chapter 15: Advantages and Disadvantages of Machine Learning

- Introduction
- Advantages
- Disadvantages
- Conclusion

Chapter 16: Applications of Machine Learning in Other Industries

- Introduction
- General applications of machine learning
- Conclusion

Chapter 17: Ethical Considerations in Artificial Intelligence

- Introduction
- Loss of jobs
- Inequality
- Humanity
- Disinformation

- Artificial intelligence and crime
- Racist robots
- Artificial intelligence vs. humans
- Conclusion

Chapter 18: Artificial Intelligence in Banking

- Introduction
- Fraud detection
- Cost cutting
- Customer service
- Risk management
- Internet banking
- Conclusion

Chapter 19: Common Machine Learning Algorithms

- Introduction
- Regression
- k-means clustering
- KNN algorithm

- Principal component analysis (PCA) algorithm
- Polynomial fitting and least squares algorithm
- Forced linear regression algorithm
- Support vector machine (SVM) algorithm
- Conditional random fields (CRFs) algorithm
- Decision tree algorithm
- Conclusion

Chapter 20: Frequently Asked Questions

- Conclusion
- Approaching a machine learning problem
- Humans in the loop
- Testing production systems
- Next step
- Machine learning packages
- Where do we go from here?

You can't stay away! Get

know how we can work



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