

uCertify

Artificial Intelligence for Business



Lesson



Practice test



Lab

08 Jun 2023

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Get hands-on experience in Analytics, Data Science, & Artificial Intelligence: Systems for Decision Support with the Artificial Intelligence for Business course and lab. The course provides a vivid introduction to technologies collectively called analytics and the fundamental methods, techniques, and software used to design and develop these systems with clear and approachable lesson flowcharts, and other tools. It illustrates how to enable technologies, including AI, machine learning, robotics, chatbots, and IoT. The Artificial Intelligence for Business course will assist you in learning artificial neural networks, machine learning, neural networks, and many more.

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1: Preface

- About This eBook
- Foreword

2: What Is Artificial Intelligence?

- What Is Intelligence?
- Testing Machine Intelligence
- The General Problem Solver
- Strong and Weak Artificial Intelligence
- Artificial Intelligence Planning
- Learning over Memorizing
- Lesson Takeaways

3: The Rise of Machine Learning

- Practical Applications of Machine Learning
- Artificial Neural Networks
- The Fall and Rise of the Perceptron
- Big Data Arrives
- Lesson Takeaways

4: Zeroing in on the Best Approach

- Expert System Versus Machine Learning

- Supervised Versus Unsupervised Learning
- Backpropagation of Errors
- Regression Analysis
- Lesson Takeaways

5: Common AI Applications

- Intelligent Robots
- Natural Language Processing
- The Internet of Things
- Lesson Takeaways

6: Putting AI to Work on Big Data

- Understanding the Concept of Big Data
- Teaming Up with a Data Scientist
- Machine Learning and Data Mining: What's the Difference?
- Making the Leap from Data Mining to Machine Learning
- Taking the Right Approach
- Lesson Takeaways

7: Weighing Your Options

- Lesson Takeaways

8: What Is Machine Learning?

- How a Machine Learns
- Working with Data
- Applying Machine Learning
- Different Types of Learning
- Lesson Takeaways

9: Different Ways a Machine Learns

- Supervised Machine Learning
- Unsupervised Machine Learning
- Semi-Supervised Machine Learning
- Reinforcement Learning
- Lesson Takeaways

10: Popular Machine Learning Algorithms

- Decision Trees
- k-Nearest Neighbor
- k-Means Clustering
- Regression Analysis
- Näive Bayes
- Lesson Takeaways

11: Applying Machine Learning Algorithms

- Fitting the Model to Your Data
- Choosing Algorithms

- Ensemble Modeling
- Deciding on a Machine Learning Approach
- Lesson Takeaways

12: Words of Advice

- Start Asking Questions
- Don't Mix Training Data with Test Data
- Don't Overstate a Model's Accuracy
- Know Your Algorithms
- Lesson Takeaways

13: What Are Artificial Neural Networks?

- Why the Brain Analogy?
- Just Another Amazing Algorithm
- Getting to Know the Perceptron
- Squeezing Down a Sigmoid Neuron
- Adding Bias
- Lesson Takeaways

14: Artificial Neural Networks in Action

- Feeding Data into the Network
- What Goes on in the Hidden Layers
- Understanding Activation Functions
- Adding Weights
- Adding Bias
- Lesson Takeaways

15: Letting Your Network Learn

- Starting with Random Weights and Biases

- Making Your Network Pay for Its Mistakes: The Cost Function
- Combining the Cost Function with Gradient Descent
- Using Backpropagation to Correct for Errors
- Tuning Your Network
- Employing the Chain Rule
- Batching the Data Set with Stochastic Gradient Descent
- Lesson Takeaways

16: Using Neural Networks to Classify or Cluster

- Solving Classification Problems
- Solving Clustering Problems
- Lesson Takeaways

17: Key Challenges

- Obtaining Enough Quality Data
- Keeping Training and Test Data Separate
- Carefully Choosing Your Training Data
- Taking an Exploratory Approach

- Choosing the Right Tool for the Job
- Lesson Takeaways

18: Harnessing the Power of Natural Language Processing

- Extracting Meaning from Text and Speech with NLU
- Delivering Sensible Responses with NLG
- Automating Customer Service
- Reviewing the Top NLP Tools and Resources
- Lesson Takeaways

19: Automating Customer Interactions

- Choosing Natural Language Technologies
- Review the Top Tools for Creating Chatbots and Virtual Agents
- Lesson Takeaways

20: Improving Data-Based Decision-Making

- Choosing Between Automated and Intuitive Decision-Making
- Gathering Data in Real Time from IoT Devices

- Reviewing Automated Decision-Making Tools
- Lesson Takeaways

21: Using Machine Learning to Predict Events and Outcomes

- Machine Learning Is Really about Labeling Data
- Looking at What Machine Learning Can Do
- Use Your Power for Good, Not Evil: Machine Learning Ethics
- Review the Top Machine Learning Tools
- Lesson Takeaways

22: Building Artificial Minds

- Separating Intelligence from Automation
- Adding Layers for Deep Learning
- Considering Applications for Artificial Neural Networks
- Reviewing the Top Deep Learning Tools
- Lesson Takeaways

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- Analyzing the Artificial Intelligence, Machine Learning, and Deep Learning
- Analyzing the Similarities and Differences Between Artificial Intelligence, Machine Learning, and Deep Learning.
- Understanding Concepts Used to Automate Decision-Making Processes
- Understanding Approaches Used to Automate Computer Decision-Making Processes
- Analyzing Algorithms to Parse and Analyze Data
- Identifying Algorithms to Parse and Analyze Data
- Summarizing Algorithms to Parse and Analyze Data
- Summarizing Methods Used to Automate Computer Decision-Making Processes



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