Lesson 01

CSC357 Machine Learning

13 January 2020

Chapter 1

Outline

Chapter 2

Questions

1. What is the difference between an initialism and an acronym?

2. The titles of our book's chapters include some initialisms. What are they? What do they mean?

3. Imagine that you are writing a book about machine learning. You might want to teach your readers. . .

   - important applications
   - general concepts
   - how specific algorithms work
   - how to use specific software tools
   - steps and techniques that are important when working with several different algorithms and software tools

   Can you guess at Aurélien Géron's purpose in some of his chapters?

4. Do the titles of Chapters 6 and 7 suggest a relationship between the topics of the two chapters? Explain.

5. The title of Chapter 9 identifies one kind of machine learning. You might infer from this title that there is another kind of machine learning that is not found in the title of any chapter. What is that other kind of machine learning?

6. The titles of our book's chapters include the names of some software libraries. Identify these libraries.

7. The words "natural language" appear in the table of contents. What is a natural language? What kinds of languages are not natural languages?

8. "Classification" is the subject of Chapter 3. Search on the Internet with the words "machine learning classification irises." What is the purpose of the machine learning examples that you find? Can you generalize to identify a common goal for machine Learning?

9. Classification is one common goal for machine learning. What is another?

10. The word "model" appears in the titles of Chapters 4, 12, and 19. What is model? This is a hard question—you will might have to search on the Internet with several different combinations of words/questions before you find a satisfactory answer.

11. The word "training" appears in the titles of Chapters 4, 11, 12, and 19. What does it mean to train a machine learning model? Again, this is a big subject and we are at the very beginning of our study of machine learning. Tell us just enough to help us get started—we want a sense of how "training" has a special meaning in the field that we are studying.

12. The word "convolutional" is part of the title of Chapter 14. Find out what a mathematical convolution is. We could spend the rest of the year studying this idea. Right now we just want a simple statement of the idea—something that you could share with a classmate at lunch.