(1) Introduction

Study questions

1. Name three topics that fall under the umbrella term "statistics".
2. Name three topics that fall under the umbrella term "machine learning".
3. When was the term "machine learning" coined?
4. What is the difference between statistics and machine learning?
5. Name three topics that fall under the umbrella term "artificial intelligence".
6. What is the difference between machine learning and artificial intelligence?
7. Which machine learning methods were popular in the 1980s, 1990s and 2000s?
8. What does the acronym MVPA stand for?
9. Describe the general logic of MVPA for fMRI data.
10. Which machine learning methods are commonly employed in MVPA for fMRI?

Exercises

1. Study the tables of contents of Bishop (2006), Murphy (2012), Alpaydin (2014), and Goodfellow et al. (2017) and identify a canon of machine learning topics.
2. Study Cox and Savoy (2003).

References

Alpaydin, E. (2014). *Introduction to Machine Learning*.

Bishop, C. M. (2006). *Pattern Recognition and Machine Learning*. Information Science and Statistics. Springer, New York.

Cox, D. D. and Savoy, R. L. (2003). Functional magnetic resonance imaging (fMRI) "brain reading": Detecting and classifying distributed patterns of fMRI activity in human visual cortex. *NeuroImage*, 19(2):261–270.

Goodfellow, I., Bengio, Y., and Courville, A. (2017). *Deep Learning*. The Mit Press, Cambridge, Massachusetts. 02143.

Murphy, K. P. (2012). *Machine Learning: A Probabilistic Perspective*. Adaptive Computation and Machine Learning Series. MIT Press, Cambridge, MA. 00000.