READINGS

← BROWSE COURSE MATERIAL

Unless otherwise noted, the readings below are from the course textbook:

Winston, Patrick Henry. *Artificial Intelligence*. 3rd ed. Addison-Wesley, 1992. ISBN: 9780201533774.

Additional resources, where relevant, are listed with the respective Lecture Videos under the "Related Resources" tab.

1	Introduction and scope	
2	Reasoning: goal trees and problem solving	Application: Symbolic Integration, p. 61.
3	Reasoning: goal trees and rule-based expert systems	Chapter 3, pp. 53–60.
4	Search: depth-first, hill climbing, beam	Chapter 4
5	Search: optimal, branch and bound, A*	Chapter 5
6	Search: games, minimax, and alpha-beta	Chapter 6
7	Constraints: interpreting line drawings	Chapter 12
8	Constraints: search, domain reduction	
9	Constraints: visual object recognition	Chapter 26
10	Introduction to learning, nearest neighbors	Chapter 19
11	Learning: identification trees, disorder	Chapter 21
12	Learning: neural nets, back propagation	Neural net notes (PDF)
13	Learning: genetic algorithms	Chapter 25
14	Learning: sparse spaces, phonology	Yip, Kenneth, and Gerald Jay Sussman. "Sparse Representations for Fast, One-Shot Learning." (PDF)
15	Learning: near misses, felicity conditions	Chapter 16
16	Learning: support vector machines	Support vector machine slides (PDF)
17	Learning: boosting	Boosting notes (PDF) (Courtesy of Patrick Winston and Luis Ortiz. Used with permission.) Schapire, Robert. "The Boosting Approach to Machine Learning: An Overview." MSRI Workshop on Nonlinear Estimation and Classification, 2002. (PDF)
18	Representations: classes, trajectories, transitions	Chapter 9

19	Architectures: GPS, SOAR, Subsumption, Society of Mind	Lehman, Jill, John Laird, and Paul Rosenbloom. "A Gentle Introduction to Soar, An Architecture for Human Cognition: 2006 Update." (PDF) Brooks, Rodney. "Intelligence Without Representation." *Artificial Intelligence* 47 (1991): 139–59. Winston, Patrick Henry. "S3, Taking Machine Intelligence to the Next, Much Higher Level." (PDF)
20	The AI business	
21	Probabilistic inference I	
22	Probabilistic inference II	Probabilistic inference notes (PDF)
23	Model merging, cross-modal coupling, course summary	Coen, Michael. "Self-Supervised Acquisition of Vowels in American English." (PDF - 4.8MB) *AAAI Proceedings of the 21st National Conference on Artificial Intelligence* 2 (2006).