

# CS 4100/5100: Foundations of AI

## Introduction

Instructor: Rob Platt  
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College of Computer and information Science  
Northeastern University

Fall, 2015

# Topics to be covered in this course

- ▶ Deterministic Search
  - ▶ uninformed search
  - ▶ heuristic search
  - ▶ constraint satisfaction
  - ▶ adversarial search
- ▶ Decision making under uncertainty
  - ▶ Probability refresher
  - ▶ Markov Decision Processes
  - ▶ Reinforcement Learning
- ▶ Bayes networks
  - ▶ Bayes networks
  - ▶ Hidden Markov Models
- ▶ Machine learning
  - ▶ Logistic regression
  - ▶ Support vector machine
  - ▶ Backpropogation
  - ▶ k-means clustering, Expectation Maximization
  - ▶ Dimensionality reduction

# Class format

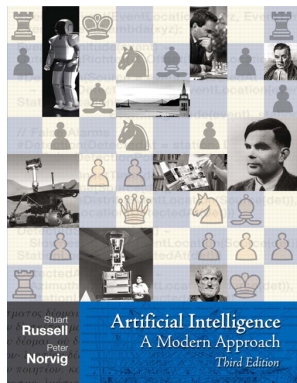
- ▶ Each class is 3 hours long!
- ▶ Class will be divided into two parts: 1) lecture; 2) problem sets.
  - ▶ lecture will last approximately 1.5 – 2 hours.
  - ▶ problem sets will last approximately 1 – 1.5 hours.
- ▶ Problem sets:
  - ▶ You can work alone, in pairs, or groups of three.
  - ▶ If you finish the problem set, you can leave early.
  - ▶ If you stay until the end of class and you're still not done, then you can take the problem set home and turn it in during the following class.
  - ▶ I'll drop your lowest problem set grade

# Course evaluation

- ▶ (20%) In-class problem sets
  - ▶ I will drop the lowest problem set grade.
- ▶ (40%) Programming assignments
  - ▶ 5 programming assignments.
- ▶ (20%) Final project
  - ▶ An application of AI to an area of interest to you.
- ▶ (20%) Final exam
  - ▶ In-class exam held during exam period.

# Contact Info

- ▶ Professor: Rob Platt, [rplatt@ccs.neu.edu](mailto:rplatt@ccs.neu.edu)
- ▶ Office hrs: Fridays, 10:30am – 12:00, 208B West Village H, or by appointment
- ▶ TA: Saber ShokatFadaee
- ▶ Office hrs: TBD, [saber@ccs.neu.edu](mailto:saber@ccs.neu.edu), ?? West Village H
- ▶ TA: Siyong Ma
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## Artificial Intelligence: A Modern Approach Third Edition

Stuart Russell, Peter Norvig

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<sup>1</sup>Image: AIMA, Russell and Norvig

## The difference between talking and cheating

You **ARE** allowed to: talk to other students about concepts in the reading. You **ARE** allowed to search the Internet for explanations of concepts covered in the class.

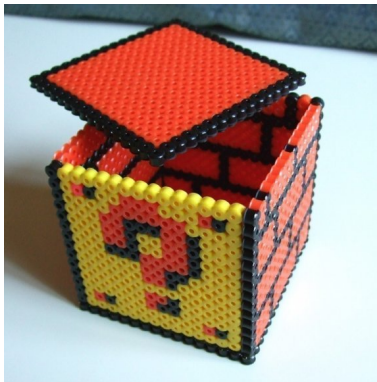
You **ARE NOT** allowed to: discuss or share the solutions to programming assignments with **ANYONE** besides me or the TA. You are **NOT** allowed to copy partial or complete solutions to programming assignments from the Internet.

If you violate these rules, we will probably find out about it. We will give you a zero for the programming assignment in question. We will refer your case to OSCCR and the College of Computer Science.

- ▶ <https://piazza.com/northeastern/fall2015/cs41005100>



# Questions?



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