Artificial Intelligence for Robotics

CS 8803: Advanced AI for Robotics, Georgia Tech OMS Syllabus (Professor Sebastian Thrun)

Course Schedule

Grading

- **6 Problem Sets: 12 points (2 points each)**. Problem Sets are graded on a completion basis; meaning, you will receive full credit if you complete them on-time, and zero credit if you do not. There is no partial credit given for Problem Sets.

- **Project 1: Runaway Robot: 38 points**

- **Project 2: Final Project: 50 points**

- **Extra Credit**: The professor reserves the right to award up-to 10 points extra credit to students who demonstrate exceptional participation and helpfulness in the private course forum on Piazza.

Grades for the projects will be posted to your student account on T-Square.

Assignment Submission and Late Policy

With the exception of the Final Project, all assignments will be submitted through the Udacity site. You may submit your entry as many times as you wish prior to the due date/time. However, only the most recent submission prior to the due date/time will be saved and graded.

You will submit your Final Project through Piazza. Detailed instructions for the Final Project are forthcoming.

No late work will be accepted. Please see the course schedule for due dates, and mark them on your calendars.

Note: If you have completed the Problem Sets in the MOOC version of the course, you will have to re-do the Problem Sets using your Georgia Tech account.

Optional Textbook

Probabilistic Robotics. Sebastian Thrun, Wolfram Burgard, & Dieter Fox. MIT Press. 2005.

You can purchase the hardcover version at Amazon.com for $56. It's not required reading, but it provides a lot of the math and the derivation that I omitted in the online course. I promise it'll enhance your learning experiences (especially if you skip the chapters on POMDPs and the more esoteric SLAM algorithms).

The course is fine without, and there is plenty materials on the Web that fill the gaps in terms of math. We'll point some of them out as we go.

Background Material on Statistics

Prof. Thrun teaches a free introductory course on Udacity called Statistics 101. This covers some of the earlier material in the course. For example, Lessons 8-9 covers probability and Lessons 10-11 cover Bayes Rule.

Note that in order to view Statistics 101, you need to sign-in with a separate (free) Udacity account — you can't access it from your GT OMS log-in. For security reasons, we have to keep the GT course experience completely separate from the rest of the Udacity site.

If you prefer written material, Think Bayes is available online. It has some great examples and seems very approachable.

Office Hours

Professor Thrun will hold Office Hours through Google Hangouts on Air about once every two weeks. Students will be notified of the Office Hour schedule on Piazza. Office Hours will be streamed live, recorded as a public video, and automatically uploaded to YouTube for anyone to access (public videos).

If you do not wish to participate, or are unable to participate, in the Hangout, you may submit your questions in advance on Piazza in the Office Hours Questions section.

Academic Honesty

All Georgia Tech students are expected to uphold the Georgia Tech Academic Honor Code.

Support

Feel free to email the course staff if you have any questions about the course. However, please use Piazza for questions that other students will also want the answer to!

Minimum Technical Requirements

Minimum requirements for optimal student experience on Udacity:

- Browser and connection speed: An up-to-date version of Chrome or Firefox is strongly recommended. We also support Internet Explorer 9 and the desktop versions of Internet Explorer 10 and above (not the metro versions). 2+ Mbps recommended; at minimum 0.768 Mbps download speed

- Operating system: PC: Windows XP or higher with latest updates installed Mac: OS X 10.6 or higher with latest updates installed Linux: Any recent distribution that has the supported browsers installed

Georgia Tech Computing Guide

Georgia Tech's Office of Student Computer Ownership issues the following Minimum Hardware Requirements to incoming undergraduates. We recommend that you meet or exceed these guidelines to ensure you have sufficient computing power to complete all course work and assignments.

This page was last edited on 2014/01/21 22:54:44.