Lecture meeting time: Tuesday, Thursday 4:00 pm-5:15 pm
Classroom: 5313 Sennott Square (SENSQ)

<table>
<thead>
<tr>
<th>Instructor:</th>
<th>Milos Hauskrecht</th>
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<tr>
<td>Office:</td>
<td>5329 Sennott Square Building</td>
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<tr>
<td>Office Hours:</td>
<td>By appointment</td>
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<td>Phone:</td>
<td>(412) 624–8845</td>
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<td>Email:</td>
<td><a href="mailto:milos@cs.pitt.edu">milos@cs.pitt.edu</a></td>
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<td>Course Web page:</td>
<td><a href="http://www.cs.pitt.edu/~milos/courses/cs3750/">http://www.cs.pitt.edu/~milos/courses/cs3750/</a></td>
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Course Description:

The goal of the field of machine learning is to build and study computer systems that can learn from data and that are capable to adapt to their environments. Machine learning techniques have been successfully applied to a variety of learning tasks in a broad range of areas, including, for example, text classification, gene discovery, financial forecasting, credit card fraud detection, collaborative filtering, design of adaptive web agents and others. The objective of the Advanced Machine Learning course is to expand on the material covered in the introductory Machine Learning course (CS2750), and focus on advanced Machine learning topics. The topics covered will include: active and transfer learning, non-parametric graph-based methods, methods for outlier detection, learning from crowds, multi-dimensional classification, as well as probabilistic models and techniques, such as conditional Markov random fields, or Monte Carlo and variational inference methods. The course will consist of a mix of lectures, paper presentations and discussions. Students will be evaluated based on their participation in discussions, paper presentations and the term projects.

Prerequisites: graduate level Machine Learning (CS 2750 or its equivalent), or the permission of the instructor.

Readings:

The readings for the course will consist of:

- Books:

- Selected conference papers and journal articles

Most of the remaining readings for the course will be distributed in electronic form, but some of them are available only in the hardcopy form.

Requirements:
Every student is expected to prepare a presentation for a selected topic in the course of the semester and lead the discussion on that topic.

**Projects/exams:**

There are no homework assignments and exams in this course. However, students are expected to write a one-page abstract for assigned readings and submit it at the beginning of every lecture. In addition, there are two course projects. First project will be assigned and due in the middle of the semester. The final project (due at the end of the semester) a student can choose the topic from a set of preselected areas. If you want to investigate/propose a new topic (problem) you will need to submit a short (one page) proposal for the purpose of approval and feedback. The project must have a distinctive and non-trivial learning or adaptive component.

**Policy on Cheating**

All the work in this course should be done independently. Cheating and any other anti-intellectual behavior, including giving your work to someone else, will be dealt with severely. If you feel you may have violated the rules speak to us as soon as possible.

Please make sure you read, understand and abide by the Academic Integrity Code for the Faculty and College of Arts and Sciences ([http://www.fcas.pitt.edu/academicintegrity.html](http://www.fcas.pitt.edu/academicintegrity.html)).

**Students With Disabilities**

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and Disability Resources and Services, 216 William Pitt Union, (412) 648-7890/(412) 383-7355 (TTY), as early as possible in the term. DRS will verify your disability and determine reasonable accommodations for this course.