CS 795 (Fall 2009) Biological Data Mining

Syllabus

Class Information
Instructor: Huzefa Rangwala, Room #4423 EB, rangwala@cs.gmu.edu

Class
Time & Location: New Arts Building, L008 (AB): Tuesday 7:20-10:00 pm

Text Book: None Needed. In this class we will read several papers on a bunch of interesting topics related to applying machine learning in bioinformatics, and systems biology.

Teaching Assistant: None

Office Hours: Instructor: Tue 4-5 pm, EB 4423

About the Course

Course Description
CS 795 (Machine Learning in Bioinformatics/Biological Data Mining) is a seminar-based class where students learn about the state-of-the-art machine learning methods and their applications in bioinformatics & computational biology. The course will cover important concepts in supervised, unsupervised, and semi-supervised learning and then zoom to specific problems in biology. The material will be covered using a series of research papers published in reputed journals. Example applications include: fold recognition, secondary structure prediction, genome annotation, network inference, protein-protein interaction, and metagenomics.

Course Prerequisites
Ability to program and use several available machine learning tools. Needed Biology will be covered in class. CS students; it is required that you have taken one machine learning, data mining, artificial intelligence, or my biological sequence analysis course before. BiNF students it is required that you have taken either the Bioinformatics Method, or Biological Sequence Analysis class before. Talk to the instructor if in doubt.

**Course Format**

50% lectures, 50% paper and classroom discussion. Homework assignments will require some programming. There will be no exams in this class.

**Tentative Class Topics**


**Grading**

- Paper Reading and Critiquing (30%)
- Paper Presentation (20%)
- Assignments (20%)
- Final Project (30%)

**Grade Distribution**

Grading will be done a curve. Only the top 25% of the class will be eligible for a A.

**Policies:**

**Attendance**

Attendance is not compulsory but highly recommended for doing well in the class. This class has lots of active learning exercises, and they will be a lot of fun.

**Assignment Submission**

Please ensure that the assignments are submitted on-time. No late submissions.

**Make-Up Exams & Incompletes**

Make up exams and incompletes will not be given for this class.
Academic Honesty and GMU Honor Code

Please visit the University's Academic Honesty Page and GMU Honor Code.

Disability Statement

If you have a documented learning disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with the Office of Disability Services (SUB 1, Rm. 222; 993-2474; www.gmu.edu/student/dsc) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

** Please note syllabus is subject to change to aid student learning **

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