CSCI 425 Data Mining  
Syllabus Fall 2020

Instructor  
Xi Chen  
xichen@pugetsound.edu  
Thompson Hall 600

Office Hours  
WF 3:45 - 5:00 pm, Zoom

Place & Time  
Tuesday & Thursday 9:40AM - 11:00AM, Online Mode, Zoom

Zoom  
You can join Zoom via one of these options:  
1. Click https://pugetsound-edu.zoom.us/j/98971853217?pwd=Zzl6bVg2OFliVGxraG8rTmhQTmlXUT09 to join.  
2. Copy and paste this address to a web browser:  
https://pugetsound-edu.zoom.us/j/98971853217?pwd=Zzl6bVg2OFliVGxraG8rTmhQTmlXUT09  
3. Use Meeting ID: 989 7185 3217 and Passcode: 020858 to join the meeting through an App.

Course Website  
http://mathcs.pugetsound.edu/~xichen/cs425f20.html

Course Description  
In this course, we will look at advanced data structures and the corresponding algorithms used to implement and manipulate them. We will also look at the mathematical analysis and behavior of algorithms. Such a study will allow us to understand what an algorithm (and ultimately a computer) can and cannot do, and how to distinguish between two or more algorithms that solve the same task.

We will use Python for homework assignments. No prior experience in Python is expected. Fortunately, learning Python is quite simple and it provides a rich library of common data structures that you can leverage for many programming tasks.

Required Textbook  
Introduction to Data Mining, by Pang-Ning Tan, etc.

Course Outline  
The general topics we will cover this semester (although in no particular order) include:

- Data: types, quality, preprocessing, similarity.
- Classification
- Association Analysis
Clustering Analysis
Regression Analysis
PCA
SVM

Homework
We will have regular homework assignments. These assignments will not be weighted equally. You are welcome to work together in designing a solution to a homework problem, but all answers and programming code should be your own work. Please list all students you worked with on each assignment.

Exams
The midterm and final exams will be distributed as take-home exams. They will involve some programming. Exams are open-textbook and notes, but you may not consult other books, the Internet, or people other than your instructor.

Late Policy
Each homework assignment will have a particular weight and due date. It is expected that you complete all assignments and turn in all necessary information upon the due date. My policy will be to deduct 5% for each day that an assignment is turned in late (weekends count as one day.) Such a policy is intended to encourage you to plan accordingly and reward those who do.

Grading
Your grade will be assigned according to the following percentages:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>93+ up</td>
<td>A</td>
</tr>
<tr>
<td>90.92.9 up</td>
<td>A–</td>
</tr>
<tr>
<td>88.89.9 up</td>
<td>B+</td>
</tr>
<tr>
<td>83.87.9 up</td>
<td>B</td>
</tr>
<tr>
<td>80.82.9 up</td>
<td>B–</td>
</tr>
<tr>
<td>78.79.9 up</td>
<td>C+</td>
</tr>
<tr>
<td>73.77.9 up</td>
<td>C</td>
</tr>
<tr>
<td>70.72.9 up</td>
<td>C–</td>
</tr>
<tr>
<td>65.69.9 up</td>
<td>D+</td>
</tr>
<tr>
<td>60.64.9 up</td>
<td>D</td>
</tr>
<tr>
<td>55.59.9 up</td>
<td>D–</td>
</tr>
<tr>
<td>0.54.9 up</td>
<td>F</td>
</tr>
</tbody>
</table>

Your course grade will be determined according to the following policy:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework assignments</td>
<td>70%</td>
</tr>
<tr>
<td>Take-home midterm exam</td>
<td>15%</td>
</tr>
<tr>
<td>Take-home final exam</td>
<td>15%</td>
</tr>
</tbody>
</table>

*** The instructor reserves the right to alter the above grading scheme.

Academic Honesty
Cheating is not tolerated. A first cheating offense will earn a grade of zero on the assignment or exam, and a second offense will receive a failing grade for the course.
Communication
This syllabus outlines course policies, and of course such policies can either be modified. But things work best when there is an open, two-way communication between both you and me. If you are having issues with the class, an assignment, etc. please talk to me. I value frank and open communication far more than any written policy.

Academic Accommodations
If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Peggy Perno, Director of the Office of Accessibility and Accommodations, 105 Howarth, 253.879.3395. She will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Classroom Emergency Response Guidance
Please review university emergency preparedness, response procedures and a training video posted at http://www.pugetsound.edu/emergency/. There is a link on the university home page. Familiarize yourself with hall exit doors and the designated gathering area for your class and laboratory buildings.

If building evacuation becomes necessary (e.g. earthquake), meet your instructor at the designated gathering area so she/he can account for your presence. Then wait for further instructions. Do not return to the building or classroom until advised by a university emergency response representative.

If confronted by an act of violence, be prepared to make quick decisions to protect your safety. Flee the area by running away from the source of danger if you can safely do so. If this is not possible, shelter in place by securing classroom or lab doors and windows, closing blinds, and turning off room lights. Lie on the floor out of sight and away from windows and doors. Place cell phones or pagers on vibrate so that you can receive messages quietly. Wait for further instructions.

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