Objectives

In recent years the repertoire of artificial intelligence (AI) techniques has evolved and expanded. In addition to the classical symbolic domains, such as knowledge discovery and uncertainty techniques, many newer fields have emerged. This course introduces major topics in the newer AI fields such as neural networks, genetic algorithms (or evolutionary computing), and fuzzy logic. These techniques have extensively been applied in industrial, governmental and commercial domains. The fundamentals and application principles of these topics will be discussed in an easily understandable fashion by the author of the new edition of the textbook.

Partial List of Contents  (The order of topics may be changed. Some topics may be skipped or added.)

Neural Networks
   Fundamentals
   Backpropagation models
   Associative memory and Hopfield networks
   Hopfield-Tank model
   Kohonen model
   Simulated annealing and Boltzmann machines

Genetic Algorithms
   Fundamentals of genetic algorithms
   Schemata

Fuzzy Systems
   Fuzzy sets, logic and algorithms
   Fuzzy control
Make-up for Exams

Make-ups will be given in cases of serious need only, and only when the instructor is notified in advance. In such cases, the instructor should again be contacted within a few days for arrangements. Written verification of any claim is required.

Programming Assignments

Submit a hardcopy of your program listing and output, and any other items required for each assignment (an assignment submitted without program output automatically gets zero credit). Note that developing solutions and debugging programs are your individual responsibility. Each member of a group effort will receive a substantial penalty.

Write the following format on the right top corner on the first page. Programs are not returned.

<table>
<thead>
<tr>
<th>John Doe</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCI 4830 Assignment #3</td>
</tr>
<tr>
<td>Submission Time:</td>
</tr>
<tr>
<td>8:30 a.m. 7/15/2009</td>
</tr>
</tbody>
</table>

Notes on late programs.

1. 0.5 points will be deducted every day (except Saturdays, Sundays, and Holidays) for all late programs. Late programs may be turned in during class or into instructor's office. Submission time will be based on when programs are turned in rather than by the time the programs are executed.

2. Occasionally students have difficulties in meeting due dates because of specific reasons (sickness, travel assignments, religious events, and so on). To compensate such possible difficulties, up to 2 points (i.e., 4-day equivalent) will be added for only one late program for every student during the semester. This adjustment does not apply negative points for incorrect programs.

3. No programs are accepted after one week. The last day that programs (which are not more than one week late) may be submitted is August 4, Wednesday.

Final Grades

The total points of the following will be curved.

- Programming Assignments (16%)
- Quizzes (Points originally given may be rescaled.) (9%)
- Midterm Exam (July 22, Wed) (35%)
- Final Exam (August 6, Thu) (40%)

Exams and quizzes are closed books and notes, and no calculator. Quizzes are not announced and there will be no make-ups. At the end of the semester, one quiz with the lowest point will be dropped. The quizzes may be peer-graded during class sessions. Note that questions concerning future exams, quizzes and assignments should be made only during class so that all students benefit equally from the answers. Points for assignments may vary depending on the quality of the work.

Last Day to Drop July 20, 2009
The University of Colorado requests inclusion of the following policies on syllabi.

CU Policy for Students with Disabilities

If you qualify for accommodations because of a disability, please submit a letter to me from Disability Services in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities. Contact: 303-492-8671, Willard 322, or http://www.Colorado.EDU/disabilityservices.

If you have a temporary medical condition or injury, see guidelines at http://www.colorado.edu/disabilityservices/go.cgi?select=temporary.html

CU Discrimination and Harassment Policy

The University of Colorado at Boulder policy on Discrimination and Harassment on Amorous Relationships apply to all students, staff and faculty. Any student, staff or faculty member who believes s/he has been the subject of sexual harassment or discrimination or harassment based upon race, color, national origin, sex, age, disability, creed, religion, sexual orientation, or veteran status should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Judicial Affairs at 303-492-5550. Information about the ODH, the above referenced policies and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at: http://www.colorado.edu/odh.

CU Religious Observance Policy

Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please notify the instructor of anticipated conflicts as early in the semester as possible so that there is adequate time to make necessary arrangements. See policy details at http://www.colorado.edu/policies/fac relig.html.

CU Classroom Behavior Policy

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. See policies at http://www.colorado.edu/policies/classbehavior.html and at http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student code.

CU Honor Code

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-725-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at http://www.colorado.edu/policies/honor.html and at http://www.colorado.edu/academics/honorcode.