

CSCI 9999 Computational Intelligence

Fall 2009

Syllabus

Instructor: Wang Liang
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Office Tel: (706) 000-0911
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Textbook: *Computational Intelligence - Concepts to Implementations* by Eberhart & Shi

References:

1. *Introduction to Genetic Algorithms* by Melanie Mitchell
2. *Handbook of Genetic Algorithms* by Davis
3. *Machine Learning* by Tom Mitchell

Course Description: In this course we will study the techniques of computational intelligence, especially evolutionary computation and neural networks. We will begin with introductory discussions of how the techniques function in solving problems in the real world. Then we will move on to the hybrid of multiple techniques and how to choose the appropriate techniques for the problems that you want to solve. Topics that will be covered in this course are as follows:

1. Fundamentals of evolutionary computation techniques.
2. Design and analysis of Genetic Algorithms.
3. Design and analysis of Particle Swarm Optimization.
4. Fundamentals of neural networks.
5. Advanced neural network architectures.
6. Applications of evolutionary computation techniques.

Some programming is required in this course. The programming projects will be done in whatever programming language you like.

Grading

Assignments	55% (homework, reports, projects, and presentations)
Midterm Exam	20% (around Oct. 02, 2009)
Final Exam	25% (around Dec. 11, 2009)

Disability

If there is any student who feels s/he may need an accommodation based on the impact of a disability, please contact me privately to discuss your specific needs.

Policies

Each student is expected to do his/her own work. Any evidence of academic dishonesty will not be tolerated, and will be subject to disciplinary action. Students are expected to familiarize themselves with the academic honesty policy of the Department of Computer Science (attached)

and the University of Georgia as stated in the following document:
http://www.uga.edu/honesty/ahpd/culture_honesty.htm

**Computer Science
Departmental Policy Statement
Academic Honesty**

The Computer Science Department recognizes honesty and integrity as necessary to the academic function of the University. Therefore all students are reminded that the CS faculty requires compliance with the conduct regulations found in the University of Georgia Student Handbook. Academic honesty means that any work you submit is your own work.

Common forms of academic dishonesty against which students should guard are:

1. Copying from another student's test paper or laboratory report, or allowing another student to copy from you;
2. Fabricating data (computer, statistical) for an assignment;
3. Helping another student to write a laboratory report or computer software code that the student will present as his own work, or accepting such help and presenting the work as your own;
4. Turning in material from a public source such as a book or the Internet as your own work.

Three steps to help prevent academic dishonesty are:

1. Familiarize yourself with the regulations.
2. If you have any doubt about what constitutes academic dishonesty, ask your instructor or a staff member at the Office of Judicial Programs.
3. Refuse to assist students who want to cheat.

All faculty, staff and students are encouraged to report all suspected cases of academic dishonesty. All cases of suspected academic dishonesty (cheating) will be referred to the Office of Judicial Programs. Penalties imposed by the Office of Judicial Programs may include a failing grade in the course and a notation on the student's transcript. Repeated violations are punishable by expulsion from the University. For further information please refer to the UGA Code of Conduct, available at the URL below.

<http://www.uga.edu/deanofstudents/judicial/downloads/conduct0304.doc>