

CPSC 636-600 Neural Networks

Spring 2008

Syllabus

NEWS: 1/16/08, 03:01PM (Wed)

- [1/16] [Linear algebra review \(by Eero Simoncelli\)](#)
- [1/16] [Matlab primer \(by Kermit Sigmon\)](#)
- [1/16] GNU Octave <http://www.octave.org> (compatible with Matlab)
- [1/15] [slide01.pdf](#) uploaded. Print and bring to the class.
- [LINKS] • [News archive](#) • [Grades](#) • [Codes](#) • [Lecture notes](#)

Read-Only Bulletin Board.: 1/15/08, 10:22AM (Tue)

Page last modified: 1/16/08, 03:03PM Wednesday.

[General Information](#) [Resources](#) [Weekly Schedule](#) [Lecture Notes](#) [Example Code](#) [Read-Only Board](#)

I. General Information

Instructor:

Dr. Yoonsuck Choe
 Email: [choe\(a\)tamu.edu](mailto:choe(a)tamu.edu)
 Office: HRBB 322B
 Phone: 979-845-5466
 Office hours: TR 11:30am-12:30pm.

TA:

There will be no TA for this class.
 Email:
 Office:
 Phone:
 Office hours:

Prerequisite/Restrictions:

Math 304 (linear algebra) and 308 (differential equations) or approval of instructor. (Actually, if you are mildly familiar with linear algebra and have taken calculus, you should be fine.)

Prior programming experience is not a prerequisite, but there will be programming assignments.

Lectures:

TR 12:45pm-2:00pm HRBB 126

Synopsis:

Basic concepts in neural computing; functional equivalence and convergence properties of neural network models; associative memory models; associative, competitive and adaptive resonance models of adaptation and learning; selective applications of neural networks to vision, speech, motor control and planning; neural network modeling environments.

Textbook:

Simon Haykin, *Neural Networks: A Comprehensive Foundation*, Second edition, Prentice-Hall, Upper Saddle River, NJ, 1999. ISBN 0-13-273350-1.

Matlab code for the examples in the text book: [Download the ZIP archive.](#)

Other books: see [slide01.pdf](#).

Computer Accounts and Usage:

1. Computer accounts: if you do not have a unix account, ask for one on the CS web page.

Topics to be covered:

See the [Weekly Schedule](#) section for more details.

Grading:

1. Exams: 40% (midterm: 20%, final: 20%)
2. Assignments: 60% (5 written+programming assignments, 12% each)

Grading will be on the absolute scale. The cutoff for an 'A' will be 90% of total score, 80% for a 'B', 70% for a 'C', 60% for a 'D', and below 60% for an 'F'.

If you are absent without any prior notification to the instructor, your class participation score will be set to 0% at the very first occurrence, except for unforeseen emergencies.

Academic Integrity Statement:

AGGIE HONOR CODE: An Aggie does not lie, cheat, or steal or tolerate those who do.

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.

For additional information please visit: <http://www.tamu.edu/aggiehonor/>

Local Course Policy:

- All work should be done **individually** and **on your own** unless otherwise allowed by the instructor.
- Discussion is only allowed immediately before, during, or immediately after the class, or during the instructor's office hours.
- If you find solutions to homeworks or programming assignments on the web (or in a book, etc.), you may (or may not) use it. Please check with the instructor.

Students with Disabilities:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Cain Hall or call 845-1637.

II. Resources

1. [Linear algebra review \(by Eero Simoncelli\)](#)
2. [Matlab primer \(by Kermit Sigmon\)](#)
3. GNU Octave <http://www.octave.org> (compatible with Matlab)
4. [My general resources page](#)
5. [625/689 Reading List](#)

III. Weekly Schedule and Class Notes

- **Lecture notes (in PDF format):** all notes will be uploaded in this directory.
- It is **your responsibility** to download, print, and bring the notes to the class. Notes will be available 24 hours before each class.
- See the **2008 TAMU Calendar** for breaks, etc.
- When reading the chapters, you do not have to memorize everything.
- More detail will be available as we go along.

Week	Date	Topic	Reading	Assignments	Notices and Dues	Notes
1	1/15	Introduction	Chap 1			slide01.pdf
1	1/17	Introduction	Chap 1			slide01.pdf
2	1/22	Learning process	Chap 2			
2	1/24	Learning process	Chap 2			
3	1/29	Learning process	Chap 2			
3	1/31	Single-layer perceptrons	Chap 3			
4	2/5	Single-layer perceptrons	Chap 3			
4	2/7	Multi-layer perceptrions	Chap 4			
5	2/12	Multi-layer perceptrions	Chap 4			
5	2/14	Multi-layer perceptrions	Chap 4			
6	2/19	Radial-basis functions	Chap 5			
6	2/21	Radial-basis functions	Chap 5			
7	2/26	Committee machines	Chap 7			
7	2/28	Midterm exam				
8	3/4	No class (trip)		Make-up TBA		
8	3/7	Special topic				
9	3/11	Spring Break	No class			
9	3/14	Spring Break	No class			
10	3/18	Support-vector machines	Chap 6			
10	3/21	Support-vector machines	Chap 6			
11	3/25	Principal component analysis	Chap 8			
11	3/28	Principal component analysis	Chap 8			
12	4/1	Self-organizing maps	Chap 9		Q-drop 4/1	
12	4/4	Self-organizing maps	Chap 9			
13	4/8	Information-theoretic models	Chap 10			
13	4/11	Early final exam				
14	4/15	Information-theoretic models	Chap 10			
14	4/18	Information-theoretic models	Chap 10			
15	4/22	Neurodynamic programming	Chap 12			

15 4/25 Neurodynamic programming Chap 12

16 4/29 Neurodynamics Chap 14

Last day of class 4/29

\$Id: index.php,v 1.4.1.8 2006/08/22 22:01:11 choe Exp \$