

Computer Science Department
CIS 5930: Advanced Topics in Data Management
Fall 2008

Instructor: Prof. Feifei Li, *lifeifei@cs.fsu.edu*, <http://www.cs.fsu.edu/~lifeifei>, phone 850-645-2356.

Office Hours: Mon 1:00pm-2:00pm and Wed 1:00pm-2:00pm in Love 269, or by appointment (the best way to reach me is via email.)

Course Description: This course introduces the latest research results from the data management and database research. We will focus on I/O efficient data structures and algorithms first and expand our discussion to indexing for multidimensional data, such as the popular R-tree and kd-Tree. Next, streaming data will be discussed with its model and related algorithms. Then probabilistic data management will be introduced. We will focus on the ranking and aggregate query processing over uncertain data. Finally, we will touch the issue of security and privacy in data management as well.

An undergraduate computer science background is required for this class. General knowledge on statistics and probability theory is necessary. Student expects to learn an overview of various topics in data management and database research, especially on the issue of scalability, efficiency and data models. A course project, done individually, will be implemented as well as a term paper of the student's interest.

We will introduce some related research tools that are required for this class as well, examples include how to use LaTeX, XFig, and other plotting tools to produce the EPS figures.

Course Objectives: To obtain an overview of data management and database research. Specifically, understand the fundamental design principles in I/O efficient data structures and algorithms; understand R-tree and kd-tree; understand the streaming data model and requirements on streaming algorithms; understand the uncertain data management and related query processing techniques.

Prerequisites: An undergraduate computer science background is required for this class. General knowledge on statistics and probability theory is necessary. Programming in C and/or C++ is expected.

Class Home Page: <http://www.cs.fsu.edu/~lifeifei/cis5930/>

All class assignments, schedules, and lecture notes can be found on this page. Please check this website at least once or twice a week for important updates.

Time and Place: Tuesday, Thursday: 3:35pm - 4:50pm in Love 0103.

Recommended Readings: Randomized Algorithms, by Rajeev Motwani and Prabhakar Raghavan, Cambridge University Press, 1995. ISBN: 0521474655.

Collaboration/Academic Honesty All course participants must adhere to the academic honor code of FSU which is available in the student handbook. All instances of academic **dishonesty** will be reported to the university. Every student must write his/her own homework/code. Showing your code or homework solutions to others is a violation of academic honesty. It is your responsibility to ensure that others cannot access your code or homework solutions. Consulting related textbooks, papers and information available on Internet for your coding assignment and homework is fine. However, copying a large portion of such information will be considered as academic dishonesty. If you borrow a small piece of any such information, please acknowledge that in your assignment. Please see the following web site for a complete explanation of the Academic Honor Code:

www.fsu.edu/Books/Student-Handbook/codes/honor.html.

Students with Disabilities Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center:

www.fsu.edu/~staffair/dean/StudentDisability/

(2) bring a letter to the instructor indicating the need for accommodation and what type.

Important Dates: Final Exam: Thursday, 12/11/08, 7:30-9:30 am, in class. Last day to drop the class without receiving a grade is 10/10/08. (Please verify this with registrar!)

Grading Policy: The course grade will break down as follows.

Written Assignments	20%
Project	30%
Term Paper	20%
Final Exam	30%

And your final grade will be assigned as follows.

90-100	A	80-84	B+	65-69	B-	55-59	D
85-89	A-	70-79	B	60-64	C	50-54	E
0-49	F						

Course Policy

1. You are allowed to discuss written assignments, however, any such discussion must be clearly acknowledge on the submitted solution. Your solution should be stapled together and neatly prepared.
2. The course project will be done individually. No inter-team collaboration is allowed.
3. You are bound to attend all lectures unless notifying the instructor in advance with reasonable excuses.
4. Usually, written assignment is due one week after it is out.

Late Policy – Make up exams: Late assignments will not ordinarily be accepted. If, for some compelling reason, you cannot hand in an assignment on time, please contact me as far in advance as possible. If a written assignment is due at the beginning of a class, you should hand it in at the *beginning* of the class. No credit will be given to late programming projects. No make-up exams (except under extremely unusual circumstances).