

## ISyE 6783 A&Q – Financial Data Analysis

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1. web page: [www.isye.gatech.edu/~jclu](http://www.isye.gatech.edu/~jclu) (ISyE/Math 6783; StatFinance ; reference)
  2. Instructor: Professor J.-C. Lu
  3. Class Time: 6:10 – 8:00 pm T, Th
  4. Location: SEIEE 3-306 at Shanghai Jiao Tong University's MinHang Campus
  5. Textbook: Statistics and Finance: An Introduction by David Ruppert, Springer Verlag, ISBN: 0387202706  
Reference: Lai and Xing (2008), *Statistical Models and Methods for Financial Markets*  
David Luenberger, *Investment Science*  
Rene A. Carmona, *Statistical Analysis of Financial Data in S-Plus*
  6. Office Hours: TBA
  7. Office: TBA
  8. E-mail: [jclu@isye.gatech.edu](mailto:jclu@isye.gatech.edu) (preferred channel of communication)
  9. Telephone number: TBA
  10. Teaching Assistant: TBA
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Note #1: I will review basic statistics in the beginning of the semester.

Note #2: Ruppert's book focuses more on statistics data analysis and has a lot of SAS programming examples. This is excellent for the M.S. level students to gain hands-on experience.

Note #3: Class notes will be posted in the class web page. Students are responsible to locate appropriate statistical software, e.g., R in the public domain (<http://www.r-project.org/>), to use for class exercises.

**Honor Codes:** Please be aware of the Georgia Tech honor codes <http://www.honor.gatech.edu/>. Distance learning students please check <http://www.dlpe.gatech.edu/> for additional information.

**Grade Distribution:** Exam #1 (25%), Exam #2 (30%), Exam #3 (25%) and Homework (20%)  
**Homework might include computer assignment. Exam(s) could include take-home exam problems.**

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### **Topics:**

0. Basics
1. Linear regression
2. Multivariate analysis & maximum likelihood
3. Applications in portfolio theory and investment models
4. Parameter estimation & statistical approaches
5. Financial time series models, GARCH
6. Dynamic models of asset returns and their volatilities
7. Nonparametric regression & option pricing theory
8. Advanced multivariate and time series methods in financial econometrics
9. Interest rate markets
10. Statistical trading strategies
11. Statistical methods in risk management