中山大學
SUN YAT-SEN UNIVERSITY

HYPERCOMP
Hyperspectral Computing Laboratory

Multivariate Statistics Analysis:

多元统计分析

Course introduction

Jun Li（李军）
School of Geography and Planning
Sun Yat-Sen University, Guangzhou, China
Mobile: 13922375250; Office: D307
E-mail: lijun48@mail.sysu.edu.cn; Webpage: http://www.lx.it.pt/~jun/

Statistics in the news

How IBM built Watson, its *Jeopardy*-playing supercomputer by Dawn Kawamoto DailyFinance 02/08/2011

Learning from its mistakes According to David Ferrucci (PI of Watson DeepQA technology for IBM Research), Watson's software is wired for more that handling natural language processing.

"It's machine learning allows the computer to become smarter as it tries to answer questions — and to learn as it gets them right or wrong."

For Today's Graduate, Just One Word: Statistics

By STEVE LOHR
Published: August 5, 2009

MOUNTAIN VIEW, Calif. — At Harvard, Carrie Grimes majored in anthropology and archaeology and ventured to places like Honduras, where she studied Mayan settlement patterns by mapping where artifacts were found. But she was drawn to what she calls "all the computer and math stuff" that was part of the job.

SIGN IN TO RECOMMEND
SIGN IN TO E-MAIL
PRINT
REPRINTS
SHARE
ARTICLE TOOLS SPONSORED BY
Adam
NOW PLAYING IN SELECT THEATERS

Enlarge This Image

Thor Swift for The New York Times

Carrie Grimes, senior staff engineer at Google, uses statistical analysis of data to help improve the company's search engine.

"People think of field archaeology as Indiana Jones, but much of what you really do is data analysis," she said.

Now Ms. Grimes does a different kind of digging. She works at Google, where she uses statistical analysis of mounds of data to come up with ways to improve its search engine.

Ms. Grimes is an Internet-age statistician, one of many who are changing the image of the profession as a place for dronish number nerds. They are finding themselves increasingly in demand — and even cool.

"I keep saying that the sexy job in the next 10 years will be statisticians," said Hal Varian, chief economist at Google. "And I'm not kidding."

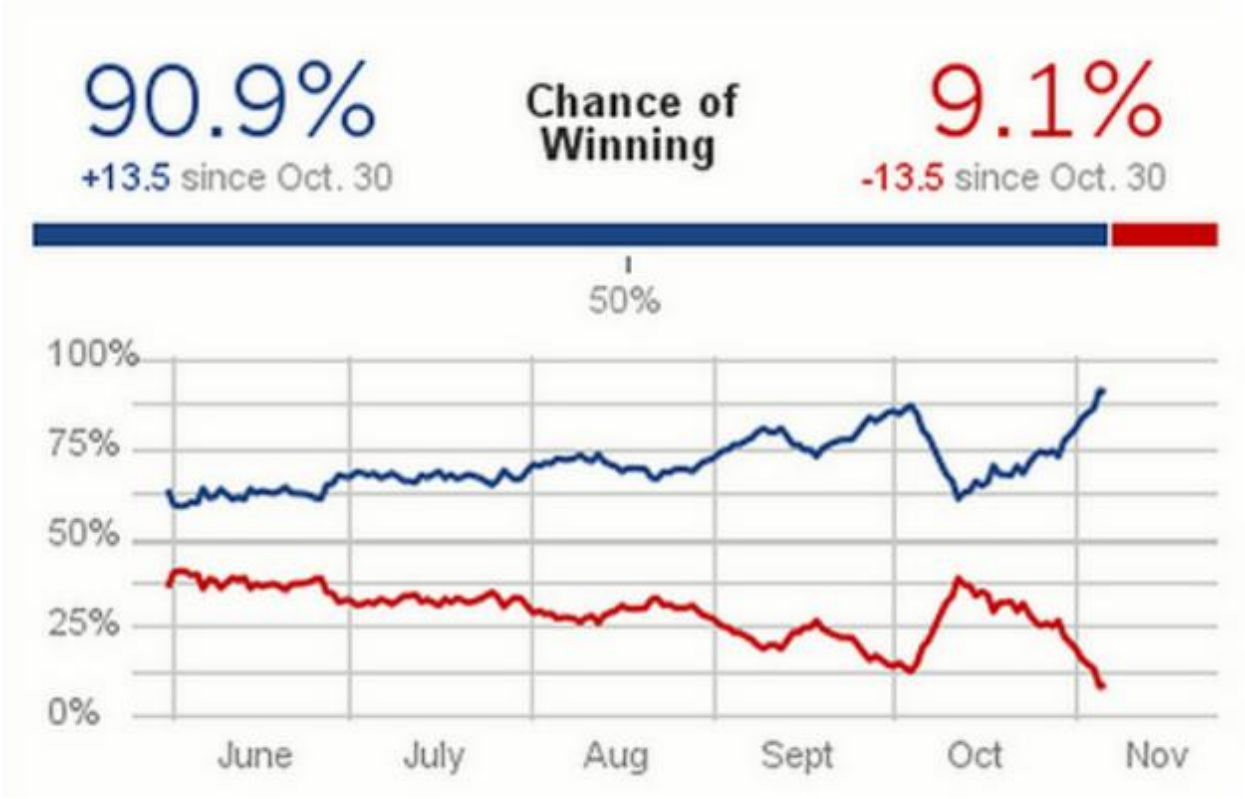
Multimedia

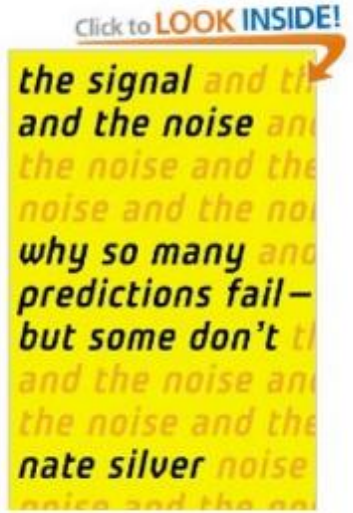
Quote of the Day, New York Times, August 5, 2009

"I keep saying that the sexy job in the next 10 years will be statisticians. And I'm not kidding." — HAL VARIAN, chief economist at Google.

FiveThirtyEight

Nate Silver's Political Calculus





- 国土资源与环境系
- 水资源与环境系
- 遥感与地理信息工程系
- 实验中心
- 按职称分
  - 教授
  - 副教授
  - 讲师
  - 特聘教授
  - 客座教授
  - 兼职、访问教授
  - "长江学者奖励计划...
- 按字母分

李军
教授

系 所：遥感与地理信息工程系
办公电话：
手机号码：
E-mail: lijun48@mail.sysu.edu.cn
详细地址：

Links

暂无数据

个人详细介绍：

个人主页，google学术

一、研究方向：高光谱图像分类、分割，混合像元分解，LiDAR，Inverse Problem

二、学历背景

· 2007.9-2011.6 电气与计算机工程, University of Lisbon，博士

· 2004.9-2007.6 摄影测量与遥感，北京大学，硕士

· 2000.9-2004.6 地理信息系统，湖南师范大学，本科

三、工作经历

· 2014.01- 中山大学教授，博士生导师（青年千人）

· 2011.06-2013.12 西班牙University of Extremadura，博士后

四、学术论文

1. Z. Xue, J. Li, L. Cheng, and P. Du. SpectralSpatial Classification of Hyperspectral Image via Morphological Component Analysis Based Image Separation. IEEE TGRS, accepted, 2014

Welcome to Jun Li's home page

I am a Professor (download my CV) in School of Geography and Planning, Sun Yat-Sen University, China

E-mail: jun@lx.it.pt; lijun48@mail.sysu.edu.cn

My Google Scholar Site is available HERE

My Web Site in Sun Yat-Sen University is available HERE

Research Interests Publications Codes

- News and Upcoming Events

---Where Are You? IT Newsletter

---TALK by Jon Atli Benediktsson: Morphological and Attribute Profiles for Classification of Hyperspectral Remote Sensing Imagery

---International Workshop on Multi-Sensor Data Fusion for Remote Sensing Image Analysis, Guangzhou, China, September 9-11, 2014 (Download Presentations!)

---The Chinese Conference on Pattern Recognition (CCPR), Changsha, China, November 17-19, 2014

jun li

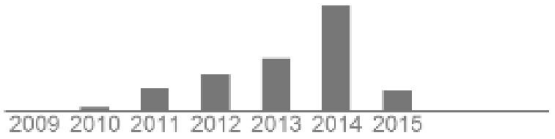
Sun Yat-Sen University
hyperspectral analysis
Verified email at mail.sysu.edu.cn - Homepage

Follow

Google Scholar

Get my own profile

Citation indices	All	Since 2010
Citations	615	606
h-index	10	10
i10-index	11	10



Title 1–20	Cited by	Year
Minimum volume simplex analysis: A fast algorithm to unmix hyperspectral data J Li, JM Bioucas-Dias Geoscience and Remote Sensing Symposium, 2008. IGARSS 2008. IEEE ...	135	2008
Semisupervised hyperspectral image segmentation using multinomial logistic regression with active learning J Li, JM Bioucas-Dias, A Plaza Geoscience and Remote Sensing, IEEE Transactions on 48 (11), 4085-4098	113	2010
Hyperspectral image segmentation using a new Bayesian approach with active learning J Li, JM Bioucas-Dias, A Plaza Geoscience and Remote Sensing, IEEE Transactions on, 1-14	101	2011
Spectral–Spatial Hyperspectral Image Segmentation Using Subspace Multinomial Logistic Regression and Markov Random Fields J Li, JM Bioucas-Dias, A Plaza Geoscience and Remote Sensing, IEEE Transactions on 50 (3), 809-832	97	2013

Co-authors View all...

José M. Bioucas Dias

Antonio Plaza

Jón Atli Benediktsson

Gamba Paolo

Course introduction(课程介绍)

- This course focuses on Multivariate Statistics Analysis(多元统计分析) **with the following aspects**:

  1)Statistics learning (统计学习)

  2)Estimation (估计)

  3)Logistic regression (逻辑回归)

  4)Discriminative analysis (判别分析)

  5)Clustering (聚类)

  6)Factor analysis (因子分析)

Course schedule （课程安排）

The course will last for a total of **17 weeks**.

The duration **of each topic will be around 2-3 weeks**.

Final exam will be in the last week（最后一周考试）.

Course schedule（课程安排）

Time	Content
2015.03.09 Lecture 0&1	1. Introduction to the course(课程介绍、提问) 2. Introduction to Statistics Analysis (统计分析介绍)
2015.03.16 2015.03.30 2015.04.06 Lecture 2	Statistic Learning（统计学习）
2015.04.13 2015.04.20 Lecture 3	Estimation（估计）
2015.04.27 2015.05.04 2015.05.11 Lecture 4	Logistic regression (逻辑回归)

Course schedule（课程安排）

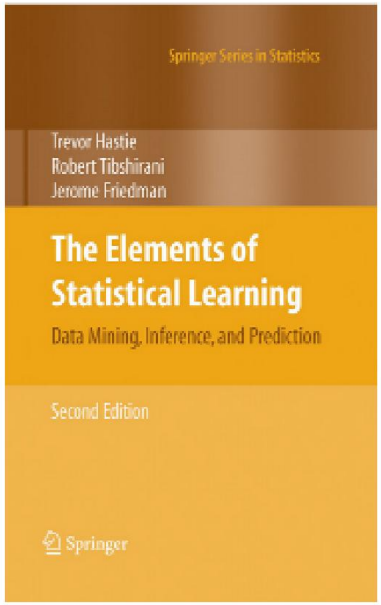
Time	Content
2015.05.18 2015.05.25 2015.06.01 Lecture 5	Discriminative Analysis (判别分析)
2015.06.08 2015.06.15 Lecture 6	Clustering(聚类分析)
2015.06.22 Lecture 7	Factor Analysis(因子分析)
2015.06.29	Conclusion of the Course (课程总结)
2015.07.06	**Exam(开卷考试)**

Course material and code download(参考文献)

THE ELEMENTS OF STATISTICAL LEARNING

Trevor Hastie, Robert Tibshirani, and Jerome Friedman

- About this book
- How to order
- Table of contents
- Data
- Errata
- R Functions
- Complements
- Short course: Statistical Learning and Data Mining
- Information for instructors



The Elements of Statistical Learning:

Data Mining, Inference, and Prediction.

Second Edition

February 2009

Trevor Hastie

Robert Tibshirani

Jerome Friedman

What's new in the 2nd edition?

Acknowledgement（致谢）

We would like to acknowledge Professors R. Trevor Hastie and Rob Tibshirani from Stanford University（斯坦福大学）for sharing their slides entitled with the course of ‘An Introduction to Statistical Learning with Applications in R’, vedios and documents, some of which are cited in this course.

Course grades （成绩）

Exam A (85%): 考试

Discussion & Attendence (15%): 上课讨论，出勤

Optional

Presentation(20mins, 25%):

学期开始时选题，后半学期报告（ 20分钟左右）

HYPERCOMP
Hyperspectral Computing Laboratory

Questions?

Jun Li（李军）
School of Geography and Planning
Sun Yat-Sen University, Guangzhou, China
Mobile: 13922375250; Office: D307
E-mail: lijun48@mail.sysu.edu.cn; Webpage: http://www.lx.it.pt/~jun/