Fangjian Guo

Personal Information

Name	Richard (Fangjian) Guo
Website	richardkwo.net
GitHub	github.com/richardkwo
Email	richardkwo@gmail.com
Tel	(919) 599-8219
Address	Department of Computer Science, Duke University
	LSRC Building, 308 Research Dr
	Campus Box 90129
	Durham NC 27708-0129

Education

2013 – present **Duke University**, Durham, NC, USA.
PhD student in the Department of Computer Science
GPA: **3.95**/4.00

2009 – 2013 **University of Electronic Science and Technology of China**, Chengdu, P.R.China.
B.Eng. in computer science and technology
Graduation with the highest distinction
GPA: **3.89**/4.00   Ranking: **1**/110

Research Interests

Machine learning, nonparametric Bayes, scalable Bayesian inference, stochastic processes and dynamic models. Modeling and understanding how human beings connect, interact and behave.

Research Experience

April 2014 – present **Bayesian Modeling of Human Conversations**,
advised by Prof. Katherine Heller, collaborated with Hanna Wallach and Charles Blundell.
Duke University

Modeling human conversations, especially in terms of its interpersonal influence and word usage, with Bayesian statistical models and stochastic processes.

◇ Derived and implemented the inference scheme with MCMC.
◇ Tested model with human conversation data.

Dec 2013 – Jan 2014 **Modeling and Calibrating Ratings across Categories**,
advised by Prof. David Dunson.
Duke University

In online rating systems, users tend to rate items with different internal standards across categories. By modeling such categorical dependence, ratings can be calibrated accordingly to remove the unfair bias and increase the diversity of recommendation systems.

◇ Proposed a Bayesian probit model to characterize the categorical dependence allowing for overlapping categories.
◇ Applied model to movie rating data.

Dec 2012 – Feb 2013	**Growth Trajectories and Causal Mechanisms of Evolution for Social Networks**, *advised by Prof. Jonathan Zhu.* Web Mining Lab, City University of Hong Kong ◇ Proposed a branching-process model to explain the dynamics of network growth.
Aug 2012 – May 2013	**The Memory Constraints of Power-law Series prevalent in Human Dynamics**, *advised by Prof. Tao Zhou.* Web Sciences Center, School of Computer Science and Engineering, UESTC ◇ Proposed a statistical model to explain the positive memory of human behaviors.

Graduate Coursework

Fall 2014	◇ STA 711: Probability & Measure Theory ◇ CPS 527: Computer Vision ◇ ECE 590: Graphical Models and Inference
Spring 2014	◇ CPS 590: Advanced Machine Learning ◇ STA 960: Statistical Stochastic Processes ◇ STA 732: Statistical Inference
Fall 2013	◇ STA 601: Bayesian and Modern Statistics ◇ STA 561: Machine Learning ◇ CPS 530: Design and Analysis of Algorithms

Teaching

Spring 2014	TA, CPS 270: Introduction to Artificial Intelligence (undergraduate)
Fall 2014	TA & Recitation Leader, STA 561: Probabilistic Machine Learning (graduate)

Honors and Awards

2013 - 2014	**Duke Graduate Fellowship**
2012	**Outstanding Winner** in 2012 Mathematical/Interdisciplinary Contest in Modeling (17 out of 5,024 teams, 0.3%). COMAP, sponsored by SIAM, NSA and INFORMS
2012	**Outstanding Student** of the University (10 out of 4,500 undergraduates, 0.2%). University of Electronic Science and Technology of China

Skills

Programming	C/C++, Python, MATLAB, R
Typesetting	LaTeX
Language	English (fluent), Chinese (native)

Publications

[1] **Fangjian Guo**, Zimo Yang, and Tao Zhou. Predicting link directions via a recursive subgraph-based ranking. *Physica A*, 392(16), 2013.

[2] **Fangjian Guo**, Jiang Su, and Jian Gao. Finding conspirators in the network via machine learning. *The UMAP Journal*, 33(3), 2012. **(Outstanding Winner paper for MCM/ICM 2012)**

[3] **Fangjian Guo** and Tao Zhou. Memory constraints of power-law series. (in preparation).

[4] **Fangjian Guo** and David Dunson. Modeling and calibrating ratings across categories. (in preparation).

[5] **Fangjian Guo**, Katherine Heller, Charles Blundell and Hanna Wallach. The Bayesian Echo Chamber. (in preparation).