Jian Gao

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Personal Information

Birth	DATE: May 28, 1989 ◇ GENDER: Male	◇ NATIONALITY: P.R. China

Address · CompleX Lab, Web Sciences Center, School of Computer Science and Engineering, UESTC
Xiyuan Ave No.2006, West Hi-Tech Zone, Chengdu 611731, P.R. China

Education

2012–Present — **University of Electronic Science and Technology of China** Chengdu, China
PhD 14' (Master 12') student in *Computer Science*. CompleX Lab, Web Sciences Center
Advisor: Prof. Tao Zhou

2008–2012 — **University of Electronic Science and Technology of China** Chengdu, China
B.Sc in *Information and Computing Science*. School of Mathematical Sciences
GPA: 88.6/100 (3.88/4)

Research Interests

Network Sci · Network Models, Percolation Transition, Spreading Processes, Ranking Methods
Data Anal · Social Media, Co-authorship, Industry, Economic and Employee Data Analysis

Selected Projects

2015–Present — Modeling Local Industry Structure and Economic Complexity of China UESTC
2014–2015 — Information Spreading and Percolation on Spatial Social Networks UESTC & SWJT
2013–2014 — User Reputation Evaluation and Robust Online Ranking Methods UESTC

Selected Publications

[1] **Jian Gao**, Tao Zhou, *et al*. Symbiosis and monopoly of the local industry structure in China. Oct 2015. (In preparation)

[2] **Jian Gao** and Tao Zhou. Evaluating user reputation in online rating systems via an iterative group-based ranking method. arXiv:1509.00594, 2015. (Under review)

[3] **Jian Gao**, Tao Zhou, and Yanqing Hu. Bootstrap percolation on spatial networks. *Nature Scientific Reports*, 5:14662, 2015.

[4] **Jian Gao**, Yu-Wei Dong, Ming-Shing Shang, Shi-Min Cai, and Tao Zhou. Group-based ranking method for online rating systems with spamming attacks. *Europhysics Letters*, 110: 28003, 2015.

[5] Jian Yuan, Qian-Ming Zhang, **Jian Gao**, Linyan Zhang, Xue-Song Wan, Xiao-Jun Yu, and Tao Zhou. Promotion and resignation in employee networks. *Physica A*, 2015. (In press)

Selected Awards

2014 — Best Poster Award in the 2nd Conference on Complexity Science (Top 3)
Chinese Complexity Science Research Council

2012 — Outstanding Winner in 2012 Interdisciplinary Contest in Modeling (0.3%)
COMAP, sponsored by SIAM, NSA and INFORMS

2011 — Outstanding Student of the University, the highest honor, UESTC (0.2%)

Selected Experience

2015–Present — Research Assistant to Prof. Tao Zhou. Big Data Research Center, UESTC Chengdu, China
2014–2015 — Research Intern. Hire Big Data and Business Big Data (Chengdu) LTD. Chengdu, China

Skills

Programming · MATLAB (practical), Python (basic) ◇ Visualization: OriginLab, Gephi, D3, AI
Language · English (fluent), Chinese (native) ◇ Typesetting: LaTeX, MS Office

Jian Gao

Gender: Male **Birth:** May 28, 1989 **Nationality:** P.R. China

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CONTACT INFORMATION

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CompleX Lab, Web Sciences Center
Univ. of Elec. Sci. & Tech. of China
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Skype: gaojianuestc

RESEARCH INTERESTS

Network Science: Network Models, Percolation, Networked Spreading Processes
Data Analysis: Social Media, Co-authorship, Economy and Industry Data Analysis
Recommender Systems: Recommendation Algorithms, Online Ranking Methods

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EDUCATION

Univ. of Elec. Sci. & Tech. of China (UESTC) Chengdu, China
Ph.D. Student *in Computer Science* Sep. 2014 - Present
Web Sciences Center, School of Computer Science & Engineering
Adviser: Prof. Tao Zhou

Univ. of Elec. Sci. & Tech. of China (UESTC) Chengdu, China
Master Student *in Computer Science* Sep. 2012 - Jul. 2014
Web Sciences Center, School of Computer Science & Engineering
Adviser: Prof. Tao Zhou

Univ. of Elec. Sci. & Tech. of China (UESTC) Chengdu, China
Bachelor of Science *in Mathematics, Highest honors* Sep. 2008 - Jul. 2012
School of Mathematical Sciences
GPA: **88.6**/100 (**3.88**/4)

RESEARCH EXPERIENCE

Research Assistant Sep. 2013 - Present
CompleX Lab, Web Sciences Center, UESTC

Advised by Prof. Tao Zhou and Dr. Yanqing Hu

Did research on online social networks, percolation on spatial networks, vertex similarity, co-authorship network, economy and company data analysis.

Research Assistant Nov. 2011 - Aug. 2013
Web Sciences Center, UESTC

Advised by Prof. Tao Zhou and Prof. Ming-Sheng Shang

Worked on missing value imputation, ranking problem in online rating systems, and evolution of recommender systems.

Research Assistant Sep. 2010 - Oct. 2011
School of Mathematical Sciences, UESTC

Advised by Assoc. Prof. Ming-Qi Li

Did research on modeling the evolution of microbial population in a wine cellar and evaluating scholarship in universities, published two journal papers in Chinese.

BOOK CHAPTERS

Jian Gao, Linyan Zhang, Qian-Ming Zhang and Tao Zhou. Big Data Human Resources: Performance Analysis and Promotion/Resignation in Employee Networks, in *Social Physics: Social Governance*. Beijing: Science Press, 2014. (In Chinese)

REFEREED PUBLICATIONS

In Progress

[1] **Jian Gao**, Tao Zhou, *et al*. Symbiosis and monopoly of the local industry structure in China. October, 2015. (In preparation)

[2] **Jian Gao**, Tao Zhou, Yi-Ding Liu, Hai-Xing Dai and Dan Yang. Modeling local economy complexity via company data analysis. October, 2015. (In preparation)

[3] Qing Wang, **Jian Gao**, Tao Zhou, *et al*. Critical size of ego communication networks. October, 2015. (In preparation)

Pre-print

[1] Ling-Jiao Chen, Zi-Ke Zhang, Jin-Hu Liu, **Jian Gao** (corresponding author), and Tao Zhou. A novel similarity index for better personalized recommendation. arXiv:1510.02348, 2015. (Under review)

[2] **Jian Gao** (corresponding author) and Tao Zhou. Evaluating user reputation in online rating systems via an iterative group-based ranking method. arXiv:1509.00594, 2015. (Under review)

Journal Papers

[1] Jian Yuan, Qian-Ming Zhang, **Jian Gao**, Linyan Zhang, Xue-Song Wan, Xiao-Jun Yu, and Tao Zhou. Promotion and resignation in employee networks. ***Physica A***, arXiv:1502.04184, 2015. (In press)

[2] **Jian Gao**, Tao Zhou, and Yanqing Hu. Bootstrap percolation on spatial networks. ***Scientific Reports***, 2015, 5:14662.

[3] **Jian Gao**, Yu-Wei Dong, Ming-Shing Shang, Shi-Min Cai, and Tao Zhou. Group-based ranking method for online rating systems with spamming attacks. ***Europhysics Letters***, 2015, 110: 28003.

[4] Linyan Zhang, **Jian Gao**, Xiang Hong, and Tao Zhou. Human Resource Management Based on Big Data. ***Big Data Research***, 2015, 1: 2015012. (In Chinese)

[5] Dan-Dan Zhao, An Zeng, Ming-Sheng Shang, and **Jian Gao**. Long-term effects of recommendation on the evolution of online systems. ***Chinese Physics Letters***, 2013, 30(11): 8901.

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

[7] **Jian Gao**, and Xi-Nan Zhang. Comprehensive scholarship evaluation model in colleges and universities. ***Journal of Chongqing Technology and Business University (Nat Sci Ed)***. 2012, 29(1): 36-41. (In Chinese)

PATENT

CN Patent: CN 201410638173
Filed: Nov 13, 2014
Title: Method for Detecting Malicious Users in Online Social Media System.
Owners: Ming-Sheng Shang, Shi-Min Cai, **Jian Gao**, and Yu-Wei Dong.

FUNDING

[1] **Co-PI**. Performance and behavior trend predication of employees in the context of big data. National Social Science Foundation of China (Grand No. 15CGL029). Co-PI with Dr. Jia Yuan (Chengdu Institute of Public Administration), RMB 200,000, May 2015-Present.

[2] **Investigator**. Interdisciplinary research of statistical physics and information science. National Natural Science Foundation of China (Grand No. 11222543), directed by Prof. Tao Zhou, RMB 1,000,000, June 2014-Present.

[3] **Investigator**. Study of information recommendation in dynamic evolution online system. National Natural Science Foundation of China (Grand No. 61370150), directed by Prof. Mingsheng Shang. RMB 750,000, January 2014-December 2014.

[4] **Investigator**. Percolation theory and cascading failure behavior on coupled complex networks based on actual structure. National Natural Science Foundation of China (Grand No. 61203156), directed by Dr. Yanqing Hu (Southwest Jiaotong University), RMB 250,000, September 2013-September 2014.

[5] **Investigator**. Integration study of social network and spreading dynamics. National Natural Science Foundation of China (Grand No. 91324002), directed by Prof. Mingsheng Shang, RMB 150,000, October 2013-April 2014.

[6] **PI**. Modeling of population structure of microbes in cellar. Science and Technology Innovation Fund Project of UESTC, RMB 3,000, January 2011-December 2011.

TEACHING EXPERIENCE

Teaching Assistant   Sep. 2013 - Jan. 2014
School of Mathematical Sciences, UESTC
Course: Calculus   Instructor: Assoc. Prof. Yong Zhang

Teaching Assistant   Sep. 2012 - Jan. 2013
School of Mathematical Sciences, UESTC
Course: Mathematical Modeling   Instructor: Lecturer Hongfei Du

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WORKING EXPERIENCE

Research Intern   Jun. 2015 - Aug. 2015
Business Big Data LTD., Chengdu, China
Position: Data Analyst

Research Intern   Jan. 2014 - Jan. 2015
Hire Big Data LTD., Chengdu, China
Position: Senior Algorithms Engineer

Management Intern   Sep. 2010 - Jun. 2012
Department of Student Affair, School of Mathematical Sciences, UESTC
Position: Assistant Counselor

SCHOLARSHIP

Tang Lixin Scholarship (0.2%), UESTC	2013-Present
Entrance Scholarship (twice) (10%), UESTC	2012&2014
Second-class Graduate Scholarship (15%), UESTC	2013-2014
National Inspiration Scholarship (5%), Ministry of Education of China	2011-2012
Single Award of People's Scholarship (twice) (5%), UESTC	2009-2011
First-class People's Scholarship (10%), UESTC	2010-2011
National Inspiration Scholarship (5%), Ministry of Education of China	2009-2010

ACADEMIC AWARDS	**Best Poster Award** in the 2nd Conference on Complexity Science (5%) *Chinese Complexity Science Research Council*	2014
	Outstanding Winner in 2012 Interdisciplinary Contest in Modeling (0.3%) *COMAP, sponsored by SIAM, MAA, NSA and INFORMS*	2012
	Second-class Award in Asia-Pacific Mathematical Contest in Modeling (4.5%) *MATHOR Network, sponsored by APMMW*	2011
	National Second-class Award in Contemporary Undergraduate MCM (5%) *CSIAM, sponsored by COMAP, MathWorks Inc and IBM Inc*	2010
	First-class Award in Mathematical Contest in Modeling (1.8%) *UESTC, sponsored by School of Continuing Education*	2010

HONOURS	Outstanding Staff Award of the year, Hire Big Data, LTD	2015
	Deserving Candidate and Outstanding Team of CAS Summer School on Systems Science, China Academic of Science (CAS)	2013
	Outstanding Student of the University (0.2%, highest honor), UESTC	2012
	Outstanding Graduates Awards of the University (5%), UESTC	2012
	Outstanding Individual on Work-study, the only in our school (1%), UESTC	2011
	Excellent Individual in Social Practice of the University (5%), UESTC	2011

CONTRIBUTED TALKS	Quantifying Local Industry Structure in China. *Symposium on Complexity Science in SWUST, Mianyang, China*	Oct. 2015
	Group-based ranking method for online rating systems. *Seminar of CompleX Lab, Web Sciences Center, UESTC, Chengdu, China*	Mar. 2015
	Bootstrap percolation on spatial networks. *The 10th Chinese Conference on Complex Networks, National University of Defense Technology, Changsha, China*	Oct. 2014
	Bootstrap percolation on Kleinberg's network. *The 2nd Conference on Complexity Science (Academic Conference), Wenzhou University, Wenzhou, China*	Jul. 2014
	Collective behavior and intervention of crowd. *The CAS Summer School- School of Systems Science. CAS, Beijing, China*	Oct. 2013
	A two-stage-ranking algorithm based on interval clustering. *Winter School on Networks and Complexity, UESTC, Chengdu, China*	Jan. 2013

ACADEMIC ACTIVITIES	The Symposium on Complexity Science in SWUST, Mianyang, China	Oct. 2015
	The Statistical Physics and Complex Systems Conference, Lanzhou, China	Jul. 2015
	The Inter-discipline Association for Complex Economy, Yantai, China	Jun. 2015
	The Seminar on Frontier Issues of Complex Networks, Shenzhen, China	Jan. 2015
	The 10th Chinese Conference on Complex Networks, Changsha, China	Oct. 2014
	The 2nd Academic Conference on Complexity Science, Wenzhou, China	Jul. 2014

Last updated: October 27, 2015

The 9th Chinese Conference on Complex Networks, Hangzhou, China   Oct. 2013

EXTRA ACADEMIC ACTIVITIES

Member of Volunteer Groups of UESTC   Sep. 2014 - Present
The volunteer groups focus on accompanying and caring of autistic children.

Member of Innovation Study and Share (ISS) Club   Nov. 2013 - Present
The club is under Tang Lixin Education Development Foundation in UESTC.

Instructor of Association Mathematical Modeling (AMM)   Oct. 2011 - Jun. 2014
The AMM is a student association in UESTC.

Leader of Work-Study Team in the School   Sep. 2010 - Jun. 2012
The program is built by Student Financial Aid Center in UESTC.

Vice Minister and Journalist of Propaganda Department   Sep. 2008 - Jun. 2009
Student Union, School of Mathematical Sciences, UESTC.

SKILLS

Programming: MATLAB (practical experiences), Python

Visualization: OriginLab, Gephi, D3.js, Adobe Illustrator

Typesetting: LaTeX, MS Office

Language: Chinese (native), English (fluent)

HOBBY

Soccer, Badminton, Skiing, Skating

REFERENCE

Tao Zhou, PhD

Professor

Director, Web Sciences Center
University of Electronic Science and Technology of China

Director, Big Data Research Center
University of Electronic Science and Technology of China

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