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Kechen Zhuang

Education

Nanjing University of Science & Technology, China

B.S., Computer Science & Technology, Sep, 2006 - Jun, 2010

Ph.D. student, Computer Science & Technology, Sep, 2010 - present

Visiting Scholar at University of Washington (Seattle), Jan, 2013 - Oct, 2013

Research Interests

Information diffusion mining, modeling and prediction,
User influence analysis,
Large scale dynamic network and data analysis,
Data intensive/cloud enables computing,
Wireless sensor network and wireless security.

Research and Work Projects

Online Social network data analysis and information diffusion research (2012-Present)

Analyze the large amount of data from Sina Weibo based on Hadoop, Cascading and Spark, major on relationship network and the information cascades dynamics. And also develop networks from the data and capture the critical network properties by parallel computing, to find how the structure of network affects the information dynamically spread on it. The research includes: (1)User influence measurement, (2)Event detection and prediction, (3)Information cascades modeling, (4)Information diffusion prediction.

Human mobility patterns and anomaly detection (2013)

Based on large scale anonymous Los Angeles city mobile phone anonymous user dataset, which contains imprecise geographic information, analyzed the human mobility pattern under different scales, propose several anomaly detection measurements, and found out that the urban area people have regular weekly mobility pattern under stable circumstances, the pattern is highly predictable.

Wireless sensor network security (Oct, 2011 - May, 2012)

Simulate the worm propagation and the immune control in the WSN, based on a Castalia WSN simulator. Purpose an emergency response mechanism which spreading anti-worm in the WSN to curb the spread of the worm/virus. The mechanism was simulated in a large WSN environment and function effectively.

Complex network invulnerability and key node research (Sep, 2010 - Apr, 2011)

Complex network invulnerability and measurement method research, a complex network experiment and visualization software programing with Java, and implanted with variety of measure algorithms and key node discovery algorithms.

Security information transmission services software (Mar, 2010 - Jun, 2010)

Security computer network IPv4 to IPv6 NAT windows sockets library program, with NDIS IPv4 and IPv6 packets capture and analysis software programing.

Papers

Kechen Zhuang, Haibo Shen, Hong Zhang. User Spread Influence Measurement in Microblog. *Multimedia Tools and Applications*, 2016, online print.

Kechen Zhuang, Fawang Han, Haibo Shen, Hong Zhang. A Time-Aware Information Cascade Model based on Survival Analysis. *IET Communications*, 2016, under review.

Kechen Zhuang, Kun Zhang, Hong Zhang. Event-related Burst Analysis and Time Prediction on Microblog Data. *Journal of Computational and Theoretical Nanoscience*, 2016, 13(1): 783-788.

Kechen Zhuang, Fawang Han, Haibo Shen, Kun Zhang, Hong Zhang. Information diffusion temporal dynamic prediction in microblog system based on user influence learning. *International Journal of Hybrid Information Technology*, 2016, 9(6): 327-336.

Shen Haibo, Kechen Zhuang, Hong Zhang. A grid trust evaluation method for wireless sensor networks based on similarity measure theory. *Journal of Computational Information Systems*, 2015, 11(8):2963-2970.

Kechen Zhuang, Kun Zhang, Hong Zhang. Large Scale Information Diffusion Analysis and Simulation with a Map-Reduce Solution. *Journal of Computational Information Systems*, 2015, 11(1): 277-284.

Haibo Shen, Haitao Jiang, Kechen Zhuang, Hong Zhang. Artificial Immunity-based Trust Detection Method for Wireless Sensor Networks. *Journal of Nanjing University of Science and Technology (Chinese)*, 2014, 38(3): 318-324.

Kechen Zhuang, Hong Zhang, Kun Zhang, Haitao Jiang. Analysis of Spreading Dynamics of Virus in Wireless Sensor Networks. *Computer Science (Chinese)*, 2013, 40(3): 187-191.

Kechen Zhuang, Hong Zhang, Kun Zhang. Simulation-Based Analysis of Worm Propagation in Wireless Sensor Network. *The 4th International Conference on Multimedia Information Networking and Security (MINES 2012)*, 2012, 847-851.

Tao Guo, Kun Zhang, Wenjuan Guo, Kechen Zhuang, Dinglong He, Peipei Li. Improved Method of Weighted Complex Networks Clustering. *Computer Science (Chinese)*, 2012, (S1): 99-102.

Kun Zhang, Gexin Tan, Kechen Zhuang, Rongsheng Zhao. Research Review on Invulnerability Measure of Complex Network. *Computer Era (Chinese)*, 2012, (5): 4-7.

Awards

Outstanding graduates of NUST (Jun 2010)

The second class scholar of NUST (2007-2010)

Computer skills

Python, Hadoop, Spark, Java, C/C++, Shell, etc.

English proficiency

College English Test-6 qualified,

Good at verbal and written communication skills.