



## 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 Ph.D. student at University of Washington (Seattle), Jan, 2013 - Oct, 2013

### Research Interests

Information diffusion analysis, model and predict.  
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 micro-blog (a china version twitter) based on Hadoop and Hama, 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.

Human mobility patterns and anomaly detection (2013)  
Based on large scale anonymous Los Angeles city mobile phone users data set, 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.

## **Publications**

Zhuang Kechen, Zhang Hong, Zhang Kun, Jiang Haitao, Analysis of Spreading Dynamics of Virus in Wireless Sensor Networks, *Computer Science(in Chinese)*, 2012

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

## **Awards**

Outstanding graduates of NUST (Jun 2010)

The second class scholar of NUST (2007-2010)

## **Computer skills**

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

## **English proficiency**

College English Test-6 qualified

Good at verbal and written communication skills