

Yi Du

Computer Network Information Center, Chinese Academy of Sciences

Phone:+86-15810134970

Email: duyi@cnic.cn

Homepage: <http://yiducn.github.io/>

Personal Information

Gender: Male

Date of Graduate: July, 2013

Address: 4# Building, South 4th Street Zhong Guan Cun. Beijing, P.R.China. 100190

Backgrounds

- | | | |
|-----------------|--|----------------|
| 2015.12~Now | Department of Big Data Technology and Application Development, Computer Network Information Center | Beijing, China |
| | • Job Title: <u>Associate Professor</u> | |
| | • Research Interest: <u>Data Mining, Visual Analytics</u> | |
| 2015.09~2016.09 | School of Electrical and Computer Engineering, Purdue University | USA |
| | • Job Title: <u>Visiting Scholar</u> | |
| | • Research Interest: <u>Spatio-temporal Visualization, Visual Analytics</u> | |
| 2013.09~2015.12 | Scientific Data Center, Computer Network Information Center, CAS | Beijing, China |
| | • Job Title: <u>Assistant Professor</u> | |
| | • Research Interest: <u>Data Processing, Data Visualization, HCI</u> | |
| 2008.09~2013.09 | Institute of Software Chinese Academy of Sciences | Beijing, China |
| | • Major: Computer Applied Technology <u>Doctoral Degree</u> | |
| | • Research Interest: <u>Human Computer Interaction(HCI), Information Visualization</u> | |
| 2004.08-2008.07 | Shandong University | Jinan |
| | • Major: Software Engineering Bachelor's Degree | |

Abilities

- Master the design and development of **data science system**, including data collecting, wrangling, analyzing, mining, visualizing and interacting.
- Master analyzing and mining of **large-scale spatio-temporal data**.
- Experiences in coding with **Java, JavaScript**. Familiar with Python and C++.
- Experiences in **MongoDB, DB2**. Familiar with MS SQLServer and Oracle.
- Experiences in traditional **data mining and machine learning algorithms**. Familiar with Hadoop, Titan, Kylin, etc.

Highlights

- Participated in an **open source** project Gephi, contributed several plugins with over 3000 lines of code.
- An analytics platform named **DVIZ**, in which I played the leading role, gained several prizes in China.
- The youngest associate professor and master advisor at CNIC, CAS until now.
- “Best Employee Award” (3%) for two years (2014-2016).
- **IBM certificated expert** on DB2 Administrator and XML Technology.

Selected Publications & Papers

- [1] Lei Ren, Yongchang Wei, Jin Cui, **Yi Du**, A Sliding Window based Multi-stage Clustering and Probabilistic Forecasting Approach for Large Multivariate Time Series Data, *Journal of Statistical Computation and Simulation (GSCS)*,2017. (SCI)
- [2] Wenjuan Cui, Pengfei Wang, Xin Chen, **Yi Du**, Danhuai Guo, Yuanchun Zhou, Jianhui Li, An Algorithm for Event Detection Based on Social Media Data, *Neurocomputing*,2017. (SCI)
- [3] **Yi Du**, Cuixia Ma, Chao Wu, Xiaowei Xu, Yike Guo, Yuanchun Zhou, Jianhui Li, A Visual Analytics Approach for Station-based Air Quality Data, *Sensors (Big Data and Cloud Computing for Sensor Networks)*,17(1), 30, 2017. (SCI)
- [4] **Yi Du**, Danhuai Guo, Xin Chen, Lei Ren, Guozhong Dai, DVIZ: A Model-driven Visualization System, *Journal of Software*, vol. 27, no. 5, pp. 1199-1211, 2016
- [5] **Yi Du**, Qianyu Liu, Yuanchun Zhou, Jianhui Li, DVIZ: A Model-driven Visualization Generation System (Poster), in *IEEE Symposium on Visual Analytics Science and Technology (VAST) 2015*, Chicago, USA, 2015.
- [6] Danhuai Guo, **Yi Du**,A Visualization Platform for Spatio-Temporal Data: a Data Intensive Computation Framework, in the *23rd International conference on Geoinformatics 2015*, Wuhan, China, 2015. (To appear)
- [7] **Yi Du**, Feng Tian,Guozhong Dai, A Development Approach Based on Extensible User Interface Description Language, *Journal of Software*, vol. 26, no. 7, pp. 1772-1784, 2015.
- [8] **Yi Du**, Danhuai Guo, Yuanchun Zhou,Jianhui Li, A Data Processing and Visualization Platform for Large-scale Spatio-temporal Data, *Journal of Computer Research and Development*, vol. 51, no. s2, pp. 10-17, 2015.
- [9] Lei Ren, **Yi Du**, Guozhong Dai, Human-Computer Interaction Based on Semantic Focus+Context For Big Data Visualization in Small Interface, *Chinese Journal of Computers*, 2015.
- [10] Lei Ren,**Yi Du**, A Sketch+Fisheye Interface for Visual Analytics of Large Time-Series (Poster), in *IEEE Symposium on Visual Analytics Science and Technology (VAST) 2014*, Paris, France, 2014, pp. 265-266.
- [11] Lei Ren, **Yi Du**, Shuai Ma,XiaoLong Zhang, Visual Analytics Towards Big Data, *Journal of Software*, vol. 25, no. 19, pp. 1909-1936, 2013.
- [12] Lei Ren, Jin Cui, **Yi Du**, Guozhong Dai, Multilevel Interaction Model For Hierarchical Tasks In Information Visualization, in *The 6th International Symposium on Visual Information Communication and Interaction (VINCI 2013)* Tianjin, China, 2013, pp. 11-16.
- [13] Yingying Jiang, Feng Tian, Guang Li, Xiaolong (Luke) Zhang, **Yi Du**, Guozhong Dai,Hongan Wang, SpeechTouch: Precise Cursor Positioning on Touch Screen Mobiles, in *15th International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI 2013)*, Munich, 2013.
- [14] **Yi Du**, Feng Tian, Cuixia Ma,Guozhong Dai, A User Interface Generation Framework Based on Multi-scale Description Method, *Chinese Journal of Computers*, vol. 36, no. 11, pp. 2179-2190, 2013.
- [15] **Yi Du**, Lei Ren, DaisyVA:An Intelligent Interactive Visualization Platform for Visual Analysis of Multi-Facet Information, *Journal of Computer-Aided Design & Computer Graphics*, vol. 25, no. 8, pp. 1177-1182, 2013.
- [16] **Yi Du**, Changzhi Deng, Feng Tian,Guozhong Dai, Extensible user interface description language, *Journal of Software*, vol. 24, no. 5, pp. 1127-1142, 2013.
- [17] **Yi Du**, Fei Lv, Feng Tian, Wenjun Hou, Cuixia Ma,Guozhong Dai, Sketch-Based interface for creation and visual representation of hyper videos, *Journal of Software*, vol. 24, no. Suppl.(2), pp. 32-41, 2013.
- [18] **Yi Du**, Feng Tian, Guozhong Dai, Feng Wang,Hongan Wang, A User Model Based on Mobile Environment, *Journal of Software*, vol. 22, pp. 120-128, 2011.
- [19] **Yi Du**, Cuixia Ma, Dongxing Teng,Guozhong Dai, CONCEPT-SKETCH: A Tool for Cooperative Visual Analytics, *International Journal of Advanced Intelligence (IJAI)*, vol. 3, no. 1, pp. 95-113, 2011.

Patents

- A spatio-temporal lead/lag correlation visualization method. **Yi Du**, Yuanchun Zhou, Jianhui Li. App. No. 201610694753.6
- A visualization method on spatio-temporal lead/lag correlation based on Theme River. **Yi Du**, Yuanchun Zhou, Jianhui Li. App. No. 201610640243.0
- A spatio-temporal lead/lag correlation calculation method based on meteorological data. **Yi Du**, Wenjuan Cui, Yuanchun Zhou, Jianhui Li. App. No.2016104650296
- A spatial clustering method based on time series correlation. **Yi Du**, Wenjuan Cui, Fei Lv, Yuanchun Zhou, Jianhui Li. App. No. 201610404636.1
- A dispatch method of spatio-temporal data service based on access heat. Danhuai Guo, **Yi Du**, Yuanchun Zhou, Jianhui Li. App. No. 2014108485284
- A visualization development method and platform based on web environment. **Yi Du**, Danhuai Guo, Yuanchun Zhou, Jianhui Li. App. No. 2014108493971
- A interactive spatial scene search method. Danhuai Guo, **Yi Du**, Yuanchun Zhou, Jianhui Li. App. No. 201310682924X

Selected Research Projects

- **Study on the method of interactive spatio-temporal data visualization based on Overview+Detail**
Knowledge Innovation Program of Chinese Academy of Sciences (leader, 2015-2016)
- **Study on the method of model driven mass space-time data visualization development**
National Natural Science Foundation of China (leader,2015-2017)
- Research and application of comprehensive evaluation over cities
Science and Technology Service Network Initiative (STS) (project participant)
- Virtual management technology and system of domain specific cloud computing
Informatization project of CAS (project participant)
- Research on services of large spatio-temporal data faced to emergency
National Natural Science Foundation of China (project participant)
- Research on Metaphor-based Interactive Learning Environment for Children
National Natural Science Foundation of China (project participant)
- Personal information management research for more equipment
National Natural Science Foundation of China (project participant)

Software Corprights

- Spatio-temporal visual analytics system of epidemic disease. Reg. No. :2015SRBJ0246
- Online visualization system based on taxi data. Reg. No. :2015SRBJ0205
- Satallite visualization system based on Ila.. Reg. No. :2014SRBJ0295

Social Activities

- Member of CCF、ACM and ACM SIGCHI CHINA Chapter
- Reviewer of Journal of Computer Application (In Chinese)
- PC member of ISMC 2016 (The 2016 International Simulation Multi-Conference)
- Reviewer of Challenge of Visual Analytics at ChinaVis 2016
- Member of Gephi Open Research Network

Project Experiences

2017.01-now	Management and Service Platform of Big NSFC Knowledge Data Hadoop, Ambari, Titan, GraphX, Apache Nifi, Apache Kylin Based on the long-collected data from NSFC (National Scientific Foundation of China), the platform re-organize researcher, achievement and project into a BigGraph model. Then, network analyzing and mining algorithms are used to get knowledge behind data.	
2016.10-2017.01	Optimization of Alarm System about Navigation Mark Most of current alarm systems of navigation marks use rules and patterns to find abnormal events. This project used data mining algorithm to optimization the alarm system.	Python, Random Forest
2015.09-2016.09	Correlation visual analytics system of large spatio-temporal data The system can help domain experts and analysts find potential cause and effect between multiple spatial regions and temporal scopes.	Java, JavaScript
2014.08-2015.09	Data visualization platform (DVIZ) (http://www.dviz.cn/dviz) This is a visualization platform, similar to ManyEyes, but has more functions. This platform supports more than 9 data format, including 5 file and 4 database. Furthermore, it supports create one visualization with two or more charts, changes of one chart can affect the changes of other charts.	Java, ECharts, D3.js
2014.06-2014.08	Radiation-hardened orbit design demonstration system	Java, WorldWind SDK
2014.03-2014.07	Visualization system of a food factory	ECharts, Java, MongoDB
2014.02-2014.03	H7N9 avian influenza data visualization system (http://www.dviz.cn/h7n9)	D3.js
2013.10-2014.01	The taxi GPS data processing and visualization system The dataset contains 4 billion items of taxi GPS. In this project, we used several techniques to optimize MongoDB and R, so that the system could deal with such dataset in seconds.	Java, MongoDB, OpenLayers
2013.07-2013.10	Orbit Data Visualization System	Java, WorldWind SDK
2011.01-2012.12	Research on User Interface Description Language under mobile environment	C, Java
2010.06-2012.01	Pen Based Operating Platform (PBOP)	C
2010.07-2010.10	Direct Social Network Importer of Gephi This is a sub project of Google Summer of Code 2010. It is a graph visualization software, and can import, visualize and export graph. My responsibility: Design and implement five data export plugins. These plugins can export data from twitter, Facebook and NYT, and convert these data into gephi format.	Java, Netbeans RCP
2009.06-2010.03	Information Visualization Toolkit: DaisyViz	Java, Eclipse RCP