

# Junjun Yin, Ph.D

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## Contact information

Room 3101, National Center for  
Supercomputing Applications  
University of Illinois at Urbana-Champaign  
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## Current Position

*Postdoctoral Research Associate*

CyberGIS Center for Advanced Digital and Spatial Studies  
Department of Geography and Geographic Information Science  
National Center for Supercomputing Applications (NCSA)  
University of Illinois at Urbana-Champaign, IL, USA

## Research Interests

Spatial Analysis; Location Based Social Media Big Data Analytics; (Geo) Visual-Analytics;  
Urban Complexity and Human Mobility; Geo-Computing and Spatial Interaction (High  
performance, Web and Mobile GIS)

## Education

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| 2009 - 2013 | <i>Ph.D</i> in Spatial Information Science, Dublin Institute of Technology, Ireland<br><i>Advisors: Dr. James D. Carswell (Dublin Institute of Technology), Dr. Michela Bertolotto (University College Dublin)</i> |
| 2006 - 2009 | <i>MSc</i> in Geomatics, University of Gävle, Sweden<br><i>Advisor: Dr. Bin Jiang (University of Gävle)</i>  |
| 2002 - 2006 | <i>BSc</i> in Electronic Engineering, University of Electronic Science and Technology of China   |

## Academic Experience

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| 2016-now  | Lecturer, University of Illinois at Urbana-Champaign, USA                        |
| 2014-now  | Postdoctoral research associate, University of Illinois at Urbana-Champaign, USA |
| 2013-2014 | Senior demonstrator, Dublin Institute of Technology, Ireland                     |
| 2007-2008 | Research assistant, Hong Kong Polytechnic University, Hong Kong SAR, China       |

## Publications

### WORK IN PROGRESS

- 2016 Gao, Y., Wang, S. Padmanabhan, A., **Yin, J.** and Guo, C. Mapping Spatiotemporal Patterns of Events Using Social Media: A Case Study of Influenza Trends. *submitted to International Journal of Geographical Information Science (in revision)*

### PEER REVIEWED JOURNALS

- 2016 **Yin, J.**, Soliman, A., Yin, D. and Wang, S. (2016). Delineate urban boundaries in Great Britain from the network of large scale Twitter user spatial interactions *International Journal of Geographical Information Science*. (Accepted, forthcoming)
- 2016 **Yin, J.** and Du, Z. (2016). Exploring Multi-Scale Spatiotemporal Twitter User Mobility Patterns with a Visual-Analytics Approach *ISPRS International Journal of Geo-Information*, 5(10):187.
- 2016 Jiang, B., Ma, D., **Yin, J.** and Sandberg, M. (2016). Spatial Distribution of Tweet Numbers and Densities in Cities. *Geographical Analysis*, DOI: 10.1111/gean.12096
- 2015 Jiang, B., **Yin, J.** and Liu, Q. (2015). Zipf's Law for All the Natural Cities around the World. *International Journal of Geographical Information Science*, 29(3), pp. 498-522
- 2014 Jiang, B. and **Yin, J.** (2014). Ht-Index to Quantify the Fractal or Scaling Structure of Geographic Features. *Annals of the Association of American Geographers*, pp. 1–12
- 2013 **Yin, J.** and Carswell, J.D. (2013). Spatial Search Techniques for Mobile 3D Queries in Sensor Web Environments. *ISPRS International Journal of Geo-Information* 2(1): pp.135-154
- 2010 Carswell, J. D., **Yin, J.** and Gardiner, K. (2010). 3DQ: Threat Dome Visibility Querying on Mobile Devices *GIM International*, 24(8)
- 2010 Carswell, J.D., Gardiner, K. and **Yin, J.** (2010). Mobile Visibility Querying for LBS. *Transactions in GIS*, 14(6): pp. 791-809, Wiley online library
- 2009 Jiang, B., **Yin, J.** and Zhao, S. (2009). Characterizing the human mobility pattern in a large street network. *Physical Review E*, 80(2), 021136
- 2008 Jiang, B., Zhao, S. and **Yin, J.** (2008). Self-organized natural roads for predicting traffic flow: a sensitivity study. *Journal of statistical mechanics: Theory and experiment*, Po7008, IOP Publishing

### PEER REVIEWED CONFERENCES AND LECTURE NOTES

- 2016 **Yin, J.**, Lu, B., Yin, D. and Wang, S. (2016). A scalable visual-analytics approach for studying mobility networks: Revealing hierarchical structures in taxi mobility flows of New York, *The Third International Conference on CyberGIS and Geospatial Data Science*, July 26–28, 2016, Urbana, Illinois (Accepted)
- 2016 **Yin, J.**, Gao, Y. and Wang, S. (2016). Urban Sensing from Volunteered Citizen Participation using Mobile Devices. In *Seeing Cities through Big Data: Research, Methods and Applications in Urban Informatics*, Springer (forthcoming)
- 2015 Soliman, A., **Yin, J.**, Soltani, K., Padmanabhan, A., and Wang, S. (2015). Where Chicagoans tweet the most: Semantic analysis of preferential return locations of Twitter users, *1st*

*International Workshop on Smart Cities and Urban Analytics 2015, 23rd ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*

- 2014 **Yin, J.** and Wang, S. (2014). Understanding the Evolvments of Natural Cities from Night-time Light Images: A CyberGIS-Enhanced Approach to Large Scale Geospatial Data Analysis, *The Second International Conference on CyberGIS and Geodesign*, August 19-21, 2014, Redlands, California
- 2014 **Yin, J.**, Gao, Y. and Wang, S. (2014). CyberGIS Enabled Urban Sensing from Volunteered Citizen Participation using Mobile Devices. *Workshop on Big Data and Urban Informatics 2014*
- 2013 Truong-Hong, L., Thi, T.T.P, **Yin, J.** and Carswell, J.D. (2013). Detailed 3D building models for Google Earth integration. In *Proceedings of the 13th International Conference on Computational Science and Its Applications (ICCSA 2013)*, Ho Chi Minh City, Vietnam: Springer(\*Best paper award)
- 2013 Thi, T.T.P, Truong-Hong, L., **Yin, J.** and Carswell, J.D. (2013). Exploring Spatial Business Data: A ROA based eCampus application. In *Proceedings of the 11th International conference on Web and Wireless Geographical Information Systems*, Banff, AB: Springer Berlin Heidelberg, pp. 164-179
- 2012 **Yin, J.** and Carswell, J.D. (2012). Effects of Variations in 3D Spatial Search Techniques on Mobile Query Speed vs Accuracy. *Web and Wireless Geographical Information Systems*, Naples, Italy. (\*Best paper award)
- 2012 Carswell, J.D. and **Yin, J.** (2012). Mobile Spatial Interaction in the Future Internet of Things. In *Proceedings of the 20th International Conference on Geoinformatics (GEOINFORMATICS)*, 2012, pp. 1-6
- 2012 **Yin, J.** and Carswell, J.D. (2012). MobiSpatial: Open-source for Mobile Spatial Interaction. *SAC, 12 Proceedings of the 27th Annual ACM Symposium on Applied Computing*, pp. 572-573
- 2012 **Yin, J.** and Carswell, J.D. (2011). Touch2Query enabled mobile devices: A case study using OpenStreetMap and iPhone. *Web and Wireless Geographical Information Systems*, pp. 203-218, Springer
- 2009 Gardiner, K., **Yin, J.** and Carswell, J.D. (2009). EgoViz: A mobile based spatial interaction system. *Web and Wireless Geographical Information Systems*, pp. 135-152, Springer

#### BOOKS

- 2009 **Yin, J.** (2009), *The Topological Patterns of Urban Street Networks: Exploring the topological patterns of urban street networks from analytical and visual perspectives*, VDM: Germany, ISBN: 3639161734

#### TALKS AND PRESENTATIONS

- 2016 **Yin, J.** and Wang, S. (2016). Mining Mobility Patterns From Semantic Twitter User Trajectories. The Association of American Geographers Annual Meeting, March 29 – April 2, 2016, San Francisco, California, USA
- 2015 **Yin, J.** and Wang, S. (2015). Finding community structures of UK cities based on large-scale Twitter user mobility patterns, *Association of American Geographers Annual Meeting, Chicago, 2015*, April 21-25, 2015, Chicago, Illinois, USA

2011 **Yin, J.** (2011), Web-service based Mobile Geospatial Application Development using Python, *PyCon 2011*, Dublin, Oct 8-9

## Teaching Experience as Instructor

2016 - GEOG 479: Advanced Topics in GIS – CyberGIS, Spring, 2016, *course*, Department of Geography and Geographic Information Science, UIUC

2015 - Parallel Databases, *workshop/short course*, CyberGIS Center, UIUC

2015 - Interactive Visualization of Large-scale Movement Data using Apache Spark, *Summer school series*, CyberGIS Center, UIUC

2015 - Introducing the CyberGIS Toolkit in high performance computing environment, *workshop/short course*, CyberGIS Center, UIUC

2015 - Taming with geospatial Big Data with Hadoop, *workshop/short course*, CyberGIS Center, UIUC

2014 - Getting to know CyberGIS, *workshop/short course*, CyberGIS Center, UIUC

2014 - now Education and outreach at the CyberGIS Commons, *secretary*, University of Illinois at Urbana-Champaign, 2014 - now

2013 Programming in C, *senior demonstrator/assistant lecture*, Dublin Institute of Technology, 2013 - 2014

2013 Object oriented programing for game development, *senior demonstrator/assistant lecture*, Dublin Institute of Technology, 2013 - 2014

2013 User interface design and GUI programing with Java, *senior demonstrator/assistant lecture*, Dublin Institute of Technology, 2013 - 2014

## Honors and awards

2016 *Microsoft Azure Data Science Research Award*: Microsoft Azure for Research

2013 *Fiosraigh Head of School Research Award*: for excellence in research, Dublin Institute of Technology

2013 *EU Future Internet Award*: for excellence in Future Internet research

2009 *PhD scholarship from Science Foundation Ireland (SFI)*: StratAG PhD scholarship

2006 *Outstanding Graduate Student Award*: University of Electronic Science and Technology of China

2006 *Best Undergraduate Dissertation Award*: Department of Electronic Engineering, University of Electronic Science and Technology of China

2005 *National Undergraduate Electronic Design Contest: Second prize*: Embedded system for Multi-channel and frequency wave generating, (Team: Yu Chen, Junjun Yin and Xia Yu)

## Service to the Profession

### PROGRAM COMMITTEES

Session Chair for Big Movement Data for Geospatial Analytics on Urban Interactions, Symposium on Human Dynamics in Smart and Connected Communities, 2017 AAG Annual Meeting, Boston, Massachusetts, April 5 - April 9, 2017

Session Chair for Understanding Urban Dynamics Based on Movement Big Data, 2016  
AAG Annual Meeting, San Francisco, California, March 29 - April 2, 2016  
Program committee member for International Conference on Location-based Social Media  
Data, Athens, Georgia, USA, March 5-7, 2015

#### REVIEWER FOR JOURNALS

Reviewer for *International Journal of Geographical Information Science (IJGIS)* (2010, 2014, 2015, 2016)  
Reviewer for *Computers, Environment and Urban Systems (CEUS)* (2009, 2010, 2013, 2014, 2015, 2016)  
Reviewer for *Geographical Analysis*(2016)  
Reviewer for *Journal of Geographical Systems*(2016)  
Reviewer for *Demography*(2016)  
Reviewer for *Environment and Planning B: Planning and Design* (2016)  
Reviewer for *Science China* (2015)  
Reviewer for *PLOS One* (2013, 2015)  
Reviewer for *Cities* (2014)  
Reviewer for *ISPRS International Journal of Geo-Information*(2013, 2014, 2015)  
Reviewer for *Journal of Location Based Services* (2013)

#### REVIEWER FOR CONFERENCES

Reviewer for GIScience 2014, 2016  
Reviewer for UbiComp 2016

### Referees

#### **Dr. Shaowen Wang**

Professor and Centennial Scholar  
CyberGIS Center for Advanced Digital and Spatial Studies  
CyberInfrastructure and Geospatial Information Laboratory  
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#### **Dr. James D. Carswell**

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Head of Spatial Information Technologies Research  
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