

Junjun Yin, Ph.D

Contact information

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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 Mobilities; Geo-Computing and Spatial Interaction (High
performance, Web and Mobile GIS)

Education

- 2009 - 2013 *Ph.D* in Spatial Information Science, Dublin Institute of Technology, Ireland
Dissertation: Mobile 2D and 3D Spatial Query Techniques for the Geospatial Web
Advisors: Dr. James D. Carswell (Dublin Institute of Technology), Dr. Michela Bertolotto (University College Dublin)
- 2006 - 2009 *MSc* in Geomatics, University of Gävle, Sweden
Dissertation: The topological patterns of urban street networks: Exploring the topological patterns of urban street networks from analytical and visual perspectives
Advisor: Dr. Bin Jiang (University of Gävle)
- 2002 - 2006 *BSc* in Electronic Engineering, University of Electronic Science and Technology of China

Academic experience

- 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 **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 **submitted, in revision to International Journal of Geographical Information Science**
- 2016 **Yin, J.** (2016). Exploring multi-level spatiotemporal Twitter user mobility patterns with a scalable visual-analytic framework **submitted to Cartography and Geographic Information Science (CaGIS)**
- 2016 Soliman, A*, **Yin, J.***, Soltani, K., Padmanabhan, A., and Wang, S. (2016). Semantic integration of geo-located Twitter with authoritative landuse maps. **submitted to PLOS One**, *equal contribution

JOURNALS

- 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

INTERNATIONAL 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 Jeong, M., **Yin, J.**, Sullivan, C. and Wang, S. (2016). Robust statistical approaches to enhance spatial autocorrelation, *The Ninth International Conference on Geographic Informa-*

tion Science (GIScience 16), Montreal, Canada. (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)
- 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 Evolutions 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 112nd 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 programming for game development, *senior demonstrator/assistant lecture*, Dublin Institute of Technology, 2013 - 2014
- 2013 User interface design and GUI programming with Java, *senior demonstrator/assistant lecture*, Dublin Institute of Technology, 2013 - 2014

Skills

Programing languages:Java, Python, Objective-C, Matlab, R, JavaScript
High performance computing: Apache Hadoop, Apache Spark, MongoDB
Mobile and Web development: iOS and Android, Cesium 3D Globe, D3.js
Spatial databases: PostGIS, Oracle Spatial, SpatiaLite

Service to the profession

PROGRAM COMMITTEES

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 *Journal of Geographical Systems* (2016)
Reviewer for *Science China* (2015)
Reviewer for *PLOS One* (2013, 2015)
Reviewer for *Computers, Environment and Urban Systems (CEUS)* (2009, 2010, 2013, 2014, 2015, 2016)
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 14 2014

Honors and awards

Fiosraigh Head of School Research Award: for excellence in research, Dublin Institute of Technology
EU Future Internet Award: for excellence in Future Internet research
PhD scholarship from Science Foundation Ireland (SFI): StratAG PhD scholarship
Outstanding Graduate Student Award: University of Electronic Science and Technology of China
Best Undergraduate Dissertation Award: Department of Electronic Engineering, University of Electronic Science and Technology of China
National Undergraduate Electronic Design Contest: Second prize: Embedded system for Multi-channel and frequency wave generating, (Team: Yu Chen, Junjun Yin and Xia Yu)

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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