

Rui Zhu

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EDUCATION

- Ph.D.*, Geography
University of California, Santa Barbara (UCSB), Santa Barbara, CA October 2014 - Present
- Specialization: GIScience, Spatial Statistics and GeoSpatial Semantics
 - (Co)Advisors: Krzysztof Janowicz and Phaedon Kyriakidis
- M.A.*, Statistics
University of California, Santa Barbara, Santa Barbara, CA October 2014 - Present
- Specialization: Applied Statistics
- M.S.*, Information Sciences
University of Pittsburgh (PITT), Pittsburgh, PA August 2012 - December 2013
- Specialization: Geoinformatics
 - Advisor: Hassan Karimi
- B.S.*, Management
Shanxi University of Finance and Economics, Taiyuan, China September 2009 - June 2012
- Specialization: Information Management and Information Systems

REASERCH INTERESTS

- *Spatial Statistics (Ph.D. thesis topic)*: higher-order spatial interaction models; multiple-point (geo)statistics; geographic field analysis; spatial point pattern analysis; contextual classification; spatial simulation.
- *GeoSpatial Semantics*: spatial signatures; ontology alignment; topic modeling; semantic enrichment.

REASERCH AND PROJECTS

- Research Assistant - Funded by DOT* August 2016 - April 2017
STKO Lab & UCONNNECT, UCSB (Dr. Krzysztof Janowicz & Dr. Kostas Goulias)
- Modeling long distance travel pattern in the California household travel survey (CHTS)
 - Augmented place attractiveness indicators from social media using topic modeling.
- Core Member - Funded by NSF* May 2016 - July 2017
National Socio-Environmental Synthesis Center (Graduate Pursuit)
- Built a annual-county level data panel (30 years covering main US) for quantifying and analyzing the drought;
 - Modeled the effect of drought on yield, GDP, ecological and agricultural plant health, and population dynamics using restricted cubic splines.
- Research Assistant - Funded by IOS Press* March 2016 - June 2016
STKO Lab, UCSB (Dr. Krzysztof Janowicz)
- Designed and implemented an interface for visualizing and editing linked data of academic publications.

Research Assistant - Funded by NSF July 2015 - September 2015
STKO Lab, UCSB (Drs. Krzysztof Janowicz and John W.I.Lee)

- Digitized the data of Tribute Lists, Athenian;
- Researched on the relations among tributes in Athenian Empire from 478-404 BC.

Research Assistant September 2013 - February 2014
Spatial Research Group, PITT (Dr. Stephen Hirtle)

- Researched on dynamic visualization of social network from an aesthetic perspective;
- Analyzed the pattern of trending venues in Foursquare.

Research Assistant January 2013 - April 2014
Geoinformatics Laboratory, PITT (Dr. Hassan Karimi)

- Studied on automatic landmark generation for human navigation using supervised learning methods;
- Involved in designing, implementing and debugging the Personalized Accessibility Map;
- Investigated on pedestrian navigation, especially for visually impaired and wheel chair users, and implemented the Pedestrian Navigation Services.

Course Project April 2013 - June 2013
CS2750: Machine Learning, PITT (Dr. Rebecca Hwa)

- Conducted research on predicting the states of human brains (i.e. rests; graphics and numbers) using machine learning algorithms.

TEACHING

Teaching Assistant Spring 2017
GEOG 176C: GIS Applications, UCSB
Instructor: Dr.Krzysztof Janowicz

Teaching Assistant Winter 2016
GEOG 178/258: Conceptual Modeling and Programming for the Geo-Sciences, UCSB
Instructor: Dr.Krzysztof Janowicz

Teaching Assistant Fall 2015, Fall 2014
GEOG 176A: Introduction to GIS, UCSB
Instructor: Dr.Werner Kuhn

Teaching Assistant Summer 2015
GEOG 176A: Introduction to GIS, UCSB
Instructor: Yingjie Hu

Teaching Assistant Spring 2015
GEOG 172: Intermediate Geographical Data Analysis, UCSB
Instructor: Dr.Phaedon Kyriakidis

Teaching Assistant Winter 2015
GEOG 3A: Ocean and Atmosphere, UCSB
Instructor: Dr.Tommy Dickey

PUBLICATIONS

Peer-reviewed Journal Articles

- **Zhu, R.**, Hu, Y., Janowicz, K., & McKenzie, G., (2016). Spatial Signature for Geographic Feature Types: Examining Gazetteer Ontologies using Spatial Statistics. *Transactions in GIS*, 20(3), 333-355.
- **Zhu, R.**, & Karimi, H. A. (2014). Automatic Selection of Landmarks for Navigation Guidance. *Transactions in GIS*, 19(2), 247-261.

- Karimi, H. A., Jiang, M., & **Zhu, R.** (2013). Pedestrian navigation services: challenges and current trends. *Geomatica*, 67(4), 259-271

Peer-reviewed Conference Articles

- **Zhu, R.**, Kyriakidis, P., and Janowicz, K. (2017). Beyond Pairs: Generalizing the Geo-dipole for Quantifying Spatial Patterns in Geographic Fields. *AGILE 2017 Conference on Geographic Information Science (BEST PAPER AWARD)*.
- Janowicz, K., Hu, Y., McKenzie, G., Gao, S., Regalia, B., Mai, G., **Zhu, R.**, Adams, B., & Taylor, K. (2016). Moon landing or safari? a study of systematic errors and their causes in geographic Linked Data, *In: Proceedings of the 9th International Conference on Geographic Information Science (GIScience 2016)*, Sep. 27-30, Montreal, Canada.
- **Zhu, R.**, Janowicz, K., Yan, B., and Hu, Y.(2016). Which Kobani? A Case Study on the Role of Spatial Statistics and Semantics for Coreference Resolution Across Gazetteers. *GIScience 2016 Short Paper Proceedings. Ninth International Conference on Geographic Information Science*. Montreal, Canada.
- Gao, S., **Zhu, R.**, and Mai, G. (2016). Identifying Local Spatiotemporal Autocorrelation Patterns of Taxi Pick-ups and Drop-offs. *GIScience 2016 Short Paper Proceedings. Ninth International Conference on Geographic Information Science*. Montreal, Canada.

PROFESSIONAL PRESENTATIONS

- Oral presentation: Quantifying the Attractiveness of Destinations for Modeling Long Distance Travel Patterns, *in NSF Mobility Science Workshop*, May 11-12, 2017, Columbus, Ohio, USA.
- Oral presentation: From the Geo-dipole to the Geo-multipole: A Framework of Applying Multiple-Point (Geo)Statistics for Geographic Field Analysis, *in 2017 Annual Meeting of AAG*, April 5-9, 2017, Boston, Massachusetts, USA.
- Lightning talk: IChing and Geography, *at 2017 Spatial@UCSB Lightning Talks*, February 28, 2017, Santa Barbara, California, USA.
- Poster presentation: Which Kobani? A Case Study on the Role of Spatial Statistics and Semantics for Coreference Resolution Across Gazetteers, *in the Ninth International Conference in Geographic Information Science*, September 27- September 30, 2016, Montreal, Canada.
- Oral presentation: Understanding the semantics of places in gazetteers via spatial analysis, *in 2016 Annual Meeting of AAG*, March 29- April 4, 2016, San Francisco, California, USA.
- Oral presentation: Spatial signatures for geographic feature types: Examining gazetteer ontologies using spatial statistics, *in 2016 Esri User Conference: GIScience Frontier Research Session*, June 27-July 1, 2016, San Diego, California, USA.
- Poster presentation: Spatial signatures for geographic feature types: Examining gazetteer ontologies using spatial statistics, *in The 12th Semantic Web Summer School*, July 17-July 23, 2016, Bertinoro, Italy.

INDUSTRIAL EXPERIENCE

Internship

February 2012 - June 2012

Beijing LIBOVITO Environmental Technology Co.Ltd

- Took charge of data preprocessing for analyzing and predicting air quality using AURORA system;
- Organized and participated in the workshop of "AURORA Environmental Air Quality Intelligent Monitoring System" in Yangzhou City, China (This workshop is co-organized with VITO, a research institution in Belgium)

MEMBERSHIPS AND SERVICES

<i>Organizer of the Session of Uncertainties in Spatial Patterns at AAG2017</i>	April 7, 2017
<i>Member of the International Association of Mathematical Geosciences (IAMG)</i>	2016 - Present
<i>Member of the Association of American Geographers (AAG)</i>	2014 - Present
<i>Reviewer for Professional Geography</i>	2016 - Present
<i>Reviewer for Transactions in GIS</i>	2013 - Present
<i>Volunteer for SPATIAL 2015, Center for Spatial Studies, UCSB</i>	December 9-11, 2015
<i>Event Committee at Geography Department, UCSB</i>	2015 - Present
<i>Coffee Committee at Geography Department, UCSB</i>	2014 - 2015
<i>Outreach Committee at Geography Department, UCSB</i>	2014 - 2015

TRAVEL GRANTS

<i>NSF travel grant for Workshop on Analyzing Movement and Mobility Within Geographic Context, May 2017</i>	
<i>NSF travel grants for Graduate Pursuits at National Socio-Environmental Synthesis Center (SESYNC), August 2016, January 2017, April 2017</i>	
<i>Jack Dangermond travel grant for AAG, 2017 winter</i>	
<i>Jack Dangermond travel grant for GIScience 2016, 2016 Fall</i>	
<i>Jack Dangermond travel grant for AAG, 2016 winter</i>	
<i>Jack Dangermond travel grant for Semantic Web Summer School, 2016 Summer</i>	

HONORS

<i>Best Paper Award</i>	May, 2017
<i>20th International Conference on Geo-Information Science (AGILE 2017), Wageningen, Netherlands</i>	
<i>Scholarships for Excellent Students</i>	Fall 2011, Spring 2011
<i>Shanxi University of Finance and Economics, Taiyuan, China</i>	
<i>First Prize in Shanxi Division and National Excellent Award, the Second National College Student Electronic Commerce Competition</i>	November, 2011
<i>Xi'an Jiaotong University</i>	
<i>Excellent Team Award, the Eleventh Enterprise Simulation Competition</i>	March, 2011
<i>Guanghua School of Management, Peking University</i>	
<i>Second Prize, National College Student Mathematical Modeling Competition</i>	September, 2010
<i>Shanxi Division, China</i>	
<i>Outstanding Student Leader</i>	May, 2010
<i>Shanxi University of Finance and Economics, Taiyuan, China</i>	