

# CURRICULUM VITAE

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## EDUCATION

- Ph.D. Geography, The University of Tennessee, Knoxville, TN, USA, 2015  
Advisor: Shih-Lung Shaw  
Dissertation: *Mobility and Activity Space: Understanding Human Dynamics From Mobile Phone Location Data*
- M.S. Geographic Information Science, Wuhan University, Wuhan, China, 2011  
Advisor: Qingquan Li
- B.S. Remote Sensing and Photogrammetry, Wuhan University, Wuhan, China, 2009

## RESEARCH INTERESTS

Urban Informatics, Geographic Information Science (GIScience), GIS for Transportation, Spatiotemporal Data Mining, Human Mobility

## PROFESSIONAL POSITIONS

- 2017 - Present Assistant Professor, Department of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University
- 2016 - 2017 Joint Postdoctoral Associate, MIT SENSEable City Laboratory, Cambridge, MA, USA  
Singapore-MIT Alliance for Research and Technology (SMART), Singapore.
- 2013 - 2015 Research Intern/Assistant, Oak Ridge National Laboratory (ORNL), Oak Ridge, TN, USA

## RESEARCH

### A. Publications

- 2018 Liu, X., **Xu, Y.** and Ye, X. Outlook and Next Steps: Integrating social network and spatial analyses for urban research in the new data environment. In *Cities as Spatial and Social Networks*, Springer (Forthcoming).
- 2018 Zhang, X., **Xu, Y.**, Tu, W. and Ratti, C. Do different datasets tell the same story about urban mobility — A comparative study of public transit and taxi usage. *Journal of Transport Geography*, 70, pp.78-90.
- 2018 Zhu, J., **Xu, Y.**, Fang, Z., Shaw, S.L. and Liu, X. Geographic Prevalence and Mix of Regional Cuisines in Chinese Cities. *ISPRS International Journal of Geo-Information*, 7(5), p.183.

- 2018 **Xu, Y.**, Belyi, A., Bojic, I. and Ratti, C. Human mobility and socioeconomic status: Analysis of Singapore and Boston. *Computers, Environment and Urban Systems*. (In press).
- 2018 **Xu, Y.**, Shaw, S-L., Lu, F., Chen, J. and Li, Q. Uncovering the Relationships Between Phone Communication Activities and Spatiotemporal Distribution of Mobile Phone Users. In *Human Dynamics Research in Smart and Connected Communities*, pp. 41-65, Springer, Cham.
- 2017 Tu, W., Cao, J., Yue, Y., Shaw, S.L., Zhou, M., Wang, Z., Chang, X., **Xu, Y.** and Li, Q., 2017. Coupling mobile phone and social media data: a new approach to understanding urban functions and diurnal patterns. *International Journal of Geographical Information Science*, 31(12), 2331-2358..
- 2017 Fang, Z., Yang, X., **Xu, Y.**, Shaw, S.L. and Yin, L., 2017. Spatiotemporal model for assessing the stability of urban human convergence and divergence patterns. *International Journal of Geographical Information Science*, 31(11), 2119-2141.
- 2017 **Xu, Y.**, Belyi, A., Bojic, I. and Ratti, C. How Friends Share Urban Space: An Exploratory Spatiotemporal Analysis Using Mobile Phone Data. *Transactions in GIS*, 21(3), pp.468-487.
- 2017 **Xu, Y.**, Wang, D., Janjusic, T., Wu, W., Pei, Y. and Yao, Z., 2017. A Web-based Visual Analytic Framework for Understanding Large-scale Environmental Models: A Use Case for The Community Land Model. *Procedia Computer Science*, 108, pp.1731-1740.
- 2017 **Xu, Y.**, Wang, D., Iverson, C., Walker, A. and Warren, J. Building a Virtual Ecosystem Dynamic Model for Root Research. *Environmental Modelling & Software*, 89(C), 97-105.
- 2016 Yang, X., Fang, Z., **Xu, Y.**, Shaw, S-L., Zhao, Z., Yin, L., Zhang, T. and Lin Y. Understanding Spatiotemporal Patterns of Human Convergence and Divergence Using Mobile Phone Location Data. *ISPRS International Journal of Geo-Information*, 5(10), 177.
- 2016 **Xu, Y.**, Shaw, S-L., Fang, Z. and Yin, L. Estimating Potential Demand of Bicycle Trips from Mobile Phone Data — An Anchor Point Based Approach. *ISPRS International Journal of Geo-Information*, 5(8), 131.
- 2016 He, H., Wang, D., **Xu, Y.** and Tan, J. Data synthesis in the Community Land Model for ecosystem simulation. *Journal of Computational Science*, 13, 83-95.
- 2016 **Xu, Y.**, Shaw, S-L., Zhao, Z., Yin, L., Lu, F., Chen, J., Fang, Z. and Li, Q. Another Tale of Two Cities — Understanding Human Activity Space Using Actively Tracked Cellphone Location Data. *Annals of the American Association of Geographers*, 106(2), 489-502.
- 2016 Zhao, Z., Shaw, S-L., **Xu, Y.**, Lu, F., Chen, J. and Yin, L. Understanding the Bias of Call Detail Records in Human Mobility Research. *International Journal of Geographical Information Science*, 30(9), 1738-1762.
- 2015 **Xu, Y.**, Shaw, S-L., Zhao, Z., Yin, L., Fang, Z. and Li, Q. Understanding aggregate human mobility patterns using passive mobile phone location data: a home-based approach. *Transportation*, 42(4), 625-646.
- 2015 **Xu, Y.**, Shaw, S-L., Yin, L. and Zhao, Z. Understanding Individual Daily Activity Spaces Based on Large Scale Mobile Phone Location Data. *Proceedings of The 13<sup>th</sup> International Conference on GeoComputation*. Dallas, Texas, USA. pp. 256-261.
- 2014 Wang, D., **Xu, Y.**, Thornton, P., King, A., Steed, C., Gu, L. and Schuchart, J. A functional test platform for the Community Land Model. *Environmental Modelling & Software*, 55, 25-31.
- 2014 **Xu, Y.**, Wang, D., Janjusic, T. and Xu, X. A Web-based Visual Analytic System for Understanding the Structure of Community Land Model. *Proceedings of The 13<sup>th</sup> International Conference on Software Engineering Research and Practice*. Las Vegas, NV. USA. pp. 3-9.

- 2014 Wang, D., Schuchart, T., Janjusic, T., Winkler, F., **Xu, Y.** and Kartsaklis. Toward Better Understanding of the Community Land Model within the Earth System Modeling Framework. *Procedia Computer Science*, 29, 1515-1524.
- 2014 Wang, D. and **Xu, Y.** Software Engineering for Scientific Application: Effort Report on The Community Land Model within the Earth System Modeling Framework. *Proceedings of The 7<sup>th</sup> International Congress on Environmental Modelling and Software*. San Diego, CA, USA.
- 2012 **Xu, Y.**, Shaw, S-L., Chen, J., Li, Q., Fang, Z. and Li, Y. Uncover Repeated Spatiotemporal Behavioral Patterns Embedded in GPS-based Taxi Tracking Data. *Proceedings of The 7<sup>th</sup> International Conference on Geographic Information Science* (Extended abstract). Columbus, OH, USA.
- 2011 **Xu, Y.**, Li, Q. and Tang, L. Road Damage Detection from Remote Sensing Imagery Based on Road Network Vector Data. *Bulletin of Surveying and Mapping*, 4, 14-16 (in Chinese).

## B. Grants and Contracts

- 2019 - 2022 “Coupling Mobile Phone and Socioeconomic Datasets: A New Approach to Quantifying Dynamic Social Segregation in A Hybrid Physical-Virtual Space”, funded by the Research Grant Council (RGC) of Hong Kong, Early Career Scheme (PI, HK\$ 886,800).
- 2018 - 2021 “Big Data as A Testbed for Urban Theories”, Start-up Fund of Hong Kong Polytechnic University (PI, HK\$ 800,000).

## C. Presentations Delivered at Professional Conferences

- 2018 “Human Mobility and Socioeconomic Status: Analysis of Singapore and Boston”, presentation at The 2018 Annual Meeting of the American Association of Geographers. New Orleans, USA, April 10-14.
- 2017 “How Friends Share Urban Space – Evidence From Mobile Phone Data”, presentation at The 2017 Esri User Conference. San Diego, CA, USA, July 10-14.
- 2017 “How Friends Share Urban Space – An Exploratory Spatiotemporal Analysis Using Mobile Phone Data”, presentation at The 2017 Annual Meeting of the American Association of Geographers. Boston, USA, April 5-9.
- 2016 “Comparing Home Detection Methods Through Multi-Source Geo-Social Data”, Future Urban Mobility Symposium 2016, National University of Singapore, Singapore, July 25-26 (Poster Presentation).
- 2015 “Understanding Individual Daily Activity Spaces Based on Large Scale Mobile Phone Location Data”, presentation at the GeoComputation 2015 Conference, Dallas, Texas, USA, May 20-23.
- 2014 “Understand Individual and Aggregate Human Mobility Patterns from Mobile Phone Location Data — A Case Study in Shenzhen, China”, presentation at The 2014 Annual Meeting of the Association of American Geographers, Tampa, Florida, USA, April 8-12.
- 2014 “A Web-based Visual Analytic System for Understanding the Structure of Community Land Model”, presentation at The 2014 International Conference on Software Engineering Research and Practice, Las Vegas, NV, USA, July 21-24.
- 2013 “Exploring spatiotemporal changes of user generated content from Flickr data”, presentation at The 2014 Annual Meeting of the Association of American Geographers, Los Angeles, CA, USA, April 9-13.
- 2012 “Uncover Repeated Spatiotemporal Behavioral Patterns Embedded in GPS-based Taxi Tracking Data”, presentation at The 2012 International Conference on Geographic Information Science, Columbus, OH, USA, September 18-21.

## D. Invited Talks and Guest Presentations

2018/06	Invited talk at Sinagpore-MIT Alliance for Research and Technology (SMART), Singapore ( <i>“Quantifying Urban Dynamics Using Large-Scale Mobility Datasets”</i> ).
2018/03	Invited speech at the Workshop on Urban and Transport Analytics, Hong Kong Baptist University ( <i>“Urban Analytics – A Mobile Phone Data Perspective”</i> ).
2018/01	Invited seminar talk at the Institute of Space & Earth Information Science, Chinese University of Hong Kong ( <i>“Urban Sensing – A Mobile Phone Data Perspective”</i> ).
2017/11	Invited speech at 2017 中国地理信息科学理论与方法学术年会 ( <i>“Sensing Urban and Social Dynamics Using Large-Scale Mobile Phone Data”</i> ).
2017/06	Invited keynote speech at 2017 EmTech Hong Kong Conference ( <i>“SENSEable Cities”</i> ).
2016/10	Invited seminar talk at Sinagpore-MIT Alliance for Research and Technology (SMART), Singapore ( <i>“How Friends Share Urban Space: Evidence from Mobile Phone Data”</i> ).
2016/06	Invited presentation at School of Remote Sensing and Information Engineering, Wuhan University, Wuhan, China ( <i>“Mobility and Activity Space: Understanding Human Dynamics from Mobile Phone Location Data”</i> ).
2016/04	Invited presentation at the 3 <sup>rd</sup> Wuhan University International Forum for Interdisciplinary Sciences and Engineering, Wuhan, China ( <i>“Mobility and Activity Space: Understanding Human Dynamics from Mobile Phone Location Data”</i> ).

## HONORS AND AWARDS

2015	Exceptional Professional Accomplishment Award, <i>Department of Geography, The University of Tennessee, Knoxville.</i>
2015	NSF Travel Award For the <i>13<sup>th</sup> International Conference of GeoComputation</i>
2015/2014	Graduate Student Publication Award, <i>Department of Geography, The University of Tennessee, Knoxville.</i>
2011	Outstanding Graduate Student, <i>Wuhan University, China</i>
	Second-class Scholarship for Graduate Student, <i>Wuhan University, China</i>
2007/2006	First-class Undergraduate Scholarship, <i>Wuhan University, China</i>

## TEACHING

### A. University Courses Offered

#### The Hong Kong Polytechnic University (2017 – present)

LSGI 3431A	System Customization and Development
LSGI 3243A	Geospatial Database

## SERVICE

### A. Reviewer of Manuscripts for the Following Journals

Annals of the American Association of Geographers  
Applied Geography  
Computers, Environment and Urban Systems

Ecosystem Services  
IEEE Transactions on Systems, Man, and Cybernetics: Systems  
International Journal of Applied Earth Observations and Geoinformation  
International Journal of Geographical Information Science  
Journal of Geographical Systems  
Transactions in GIS  
Transportmetrica A: Transport Science

## **B. Organizer/Chair for Conference Sessions and Workshops**

- 2018 Chair, Co-Organizer, Symposium on New Horizons in Human Dynamics Research: Spatial-Social Networks in GIS (I), Annual Conference of American Association of Geographers, New Orleans, USA, April 10-14.
- 2018 Co-Organizer, Symposium on New Horizons in Human Dynamic Research: Time-Geography – a way of thinking, Annual Conference of American Association of Geographers, New Orleans, USA, April 10-14.

## **C. Service to the University**

Deputy program leader for MSc, Department of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University, 2018 – present;  
Department program exchange officer, Department of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University, 2018 – present;