

Qunying Huang

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1. BACKGROUND

1.1 EDUCATION AND POSTDOCTORAL TRAINING

- Ph.D., 2011. Earth Systems and Geoinformation Sciences, George Mason University, Fairfax, VA
- M.S., 2007. Cartography and Geographical Information Science, Peking University, China
- B.S., 2004. Survey and Mapping Engineering, Central South University, China

1.2 RESEARCH INTERESTS

- Spatial big data analytics and mining
- Social media/network
- Cloud computing, distributed computing, and high performance computing
- Remote Sensing
- Spatial mobile programming
- Spatial web service, architecture and portal
- Natural hazards
- Human mobility

1.3 RESEARCH AND TEACHING EXPERIENCE

- 7/2019-present: Associate Professor, UW-Madison, WI
- 9/2013-6/2019: Assistant Professor, UW-Madison, WI
- 9/2012-8/2013: Instructor/Research Associate, GMU, VA
- 10/2011-7/2012: Research Scientist, USGS Eastern Geographic Science Center, Reston, VA
- 8/2011-8/2012: Post-Doctoral Research Fellow, GGS, GMU, VA
- 8/2007-8/2011: Graduate Research and Teaching Assistant, GGS, GMU, VA
- 6/2004-7/2007: Graduate Research Assistant, Institute of Remote Sensing and Geographic Information Sciences, Peking University, China

1.4 SELECTED HONORS AND AWARDS

- 2020: Vilas Associates Award
- 2016: Madison Teaching and Learning Excellence (MTLE) Faculty Fellow
- 2015: Best paper award 1st International Symposium on Spatiotemporal Computing (ISSC)
- 2014: Next Generation of Hazards & Disasters Researchers, National Science Foundation
- 2014: CyberGIS Fellow, NCSA, University of Illinois at Urbana-Champaign IL
- 2012: Outstanding Graduate Student, GMU
- 2011: Summer Student Best Paper Travel Award, UCGIS

- 2010: AAG CISG Student Best Paper Award
- 2004: Graduated with Honor
- 2004: Best Undergraduate thesis

2. RESEARCH

2.1 GRANTS

- 1) 2019: CoPe EAGER: Collaborative Research: A GeoAI Data-Fusion Framework for Real-Time Assessment of Flood Damage and Transportation Resilience by Integrating Complex Sensor Datasets, National Science Foundation, 1/1/2020 - 1/1/2022, \$299,000. PI: Qunying Huang
- 2) 2019: Contextualized Daily Prediction of Lapse Risk in Opioid Use Disorder by Digital Phenotyping, National Institute of Health, 8/1/2019 - 6/30/2024, \$3,416,728 (Co-I). PI: Dr. John Curtin
- 1) 2017: Risk-based Assessment and MANagement (RAMAN) Online Visualization Tools for Health of Bluff, Beach, and Nearshore Environments on Wisconsin's Coast, NOAA Sea Grant, 02/01/2019 - 02/01/2021, \$142,000 (Co-I). PIs: Dr. Chin Wu
- 2) 2017: A 3D Visualization System for Human Mobility Study Using Online Footprints, Wisconsin Alumni Research Foundation (WARF), 04/01/2018 - 06/30/2019, \$39,270. PI: Qunying Huang
- 3) 2016: EPIGRIDS: Electric Power Infrastructure and Grid Representation in Interoperable Data Sets, Department of Energy, 08/10/2016 - 11/09/2019, \$1,476,000 (Co-I). PI: Dr. Christopher L. DeMarco
- 4) 2016: Resource Demand Estimation for Effective Disaster Response Using Crowdsourcing Data, WARF, 09/01/2017 - 09/01/2018, \$46,765. PI: Qunying Huang
- 5) 2015: Evaluation of Big Data Containers for Popular Storage, Retrieval, and Computation Primitives in Earth Science Analysis, NASA, 06/01/2015 - 06/01/2017, \$50,000. PI: Qunying Huang
- 6) 2015: Developing an Intelligent System for Disaster Situational Awareness Based on Social Media, WARF, 07/01/2015 - 06/30/2016, \$31,979. PI: Qunying Huang
- 7) 2014: Developing a Cloud-enabled Interactive Mapping System for Wisconsin Economic Development Corporation (WEDC), WEDC, 06/01/2014 - 06/01/2015, \$10,000 (Co-I). PI: Dr. Howard Veregin
- 8) 2012: ESIP Testbed: Cloud Cost Model, Federation of Earth Science Information Partners (ESIP), 09/01/2012 - 08/30/2013, \$5000. PI: Qunying Huang
- 9) 2011: Cloud Enable GEOSS Clearinghouse, Microsoft, 06/01/2011 - 05/30/2012, \$100,000 (Co-I). PI: Dr. Chaowei Yang
- 10) 2010: Geospatial Cloud Processing, ESIP student funding, 09/01/2010 - 08/30/2011, \$3000. PI: Qunying Huang
- 11) 2009: GeoCloud Initiative, Federal Geographic Data Committee (FGDC), 09/01/2009- 08/30/2010, \$30,000 (Co-I). PI: Dr. Chaowei Yang

2.2 PUBLICATIONS

2.2.1 Books

- 1) Yang C., Yu M., **Huang Q.**, etc., 2016. Introduction to Programming and GIS Algorithms with Python and ArcGIS, *CRC Press/Taylor & Francis*, 328p. ISBN: 978-1466510081.
- 2) Yang C., **Huang Q.**, 2013. Spatial Cloud Computing: A Practical Approach, *CRC Press/Taylor & Francis*, 304p. ISBN: 978-1466593169.

- 3) **Huang Q.**, 2012. Adaptive Nested Models and Cloud Computing for Scientific Simulation: A Case Study Using Dust Storm Forecasting, *LAP LAMBERT Academic Publishing*, 120p. ISBN: 978-3659154775.

2.2.2 Journal Editorship

- 1) Kar B., Ye X., Li Z., **Huang Q.**, 2020. Special Issue on Scaling, Spatio-Temporal Modeling, and Crisis Informatics, *ISPRS International Journal of Geo-Information*.
- 2) Li Z., Tang W., **Huang Q.**, Shook E., Guan Q., 2018. Special Issue on Big Data Computing for Geospatial Applications, *ISPRS International Journal of Geo-Information*.
- 3) Li Z., **Huang Q.**, Emrich C., 2017. Special Issue on Social Sensing and Big Data Computing for Disaster Management, *International Journal of Digital Earth*. Taylor & Francis.
- 4) Ye X., **Huang Q.**, Li W., 2015. Special Issue on Integrating Big Social Data, Computing, and Modeling for a Synthesized Spatial Social Science, *Cartography and Geographic Information Science*. Taylor & Francis.

2.2.3 Papers in Preparation

*Underlined names are student advisees.

- 1) Wu M., Huang Q., 2019. Human Movement Patterns of Different Racial-Ethnic and Economic Groups in U.S. Top 50 Cities: What Can Social Media Tell Us about Segregation? PlusONE.
- 2) Guo C., **Huang Q.**, 2019. Spatiotemporal and Sentiment Pattern of Evacuation Behaviors during Natural Hazards. *Cartography and Geographic Information Science*.
- 3) Scheele C., **Huang Q.**, Yu M., 2019. Spatial text mining: An Enhanced Text Mining Framework for Extracting Disaster Relevant Social Media Data. *IEEE Access*
- 4) **Huang Q.**, Liu X., 2019. From Where Do Tweets Originate? – Spatial Data Mining of User Location. *Computers, Environment and Urban Systems (CEUS)*

2.2.4 Peer-Reviewed Journal Articles

- 1) Liu X., Huang Q., Gao S. and Xia J., 2020. Activity knowledge discovery: Detecting collective and individual activities with digital footprints and open source geographic data. *Computers, Environment and Urban Systems*, 85, p.101551. DOI: 10.1016/j.compenvurbsys.2020.101551.
- 2) Vongkusolkij J. and **Huang Q.**, 2020. Situational awareness extraction: a comprehensive review of social media data classification during natural hazards. *Annals of GIS*, DOI: 10.1080/19475683.2020.1817146
- 3) Shen B., Xu X., Li J., Plaza A., and **Huang Q.**, 2020. Unfolding Spatial-Temporal Patterns of Taxi Trip based on an Improved Network Kernel Density Estimation. *ISPRS International Journal of Geo-Information*, 9(11), 683.
- 4) Li Z., Tang W., **Huang Q.**, Shook E. and Guan Q., 2020. Introduction to Big Data Computing for Geospatial Applications. *International Journal of Geo-Information*, 9(8): 487.
- 5) Yu M., Bambacus M., Cervone G., Clarke K., Duffy D., **Huang Q.**, Li J., Li W., Li Z., Liu Q. and Resch B., 2020. Spatiotemporal event detection: a review. *International Journal of Digital Earth*, 13(10): 1186 - 1211.
- 6) Peng B., Meng Z., **Huang Q.**, Wang C., 2019. Patch Similarity Convolutional Neural Network for Urban Flood Extent Mapping Using Bi-Temporal Satellite Multispectral Imagery. *International Journal of Remote Sensing*, 11(21), 2492. DOI: 0.3390/rs11212492.

- 7) Yu M., **Huang Q.**, Scheele C., Han Q., Yang C., 2019. Deep Learning for Real-Time Social Media Text Classification for Situation Awareness - Using Hurricanes Sandy and Harvey as Case Studies. *International Journal of Digital Earth*, 12(11): 1230-1247. DOI: 10.1080/17538947.2019.1574316.
- 8) Gao S., Rao, J., Liu, X., Kang, Y., **Huang Q.**, and App J., 2019. Exploring the Effectiveness of Geomasking Techniques for Protecting the Geoprivacy of Twitter Users. *Journal of Spatial Information Science*, 2019 (19): 105-129.
- 9) Li Z., **Huang Q.**, Jiang Y., Hu F., 2019. SOVAS: A Scalable Online Visual Analytic System for Big Climate Data Analysis. *International Journal of Geographical Information Science*, 34(6): 1188-1209.
- 10) Liu X., **Huang Q.**, Gao S., 2019. Exploring the Uncertainty of Activity Zone Detection Using Digital Footprints with Multi-Scaled DBSCAN. *International Journal of Geographical Information Science*, 33(6):1196-223. DOI: 10.1080/13658816.2018.1563301.
- 11) Vincent K., Roth R. E, Moore S. A., **Huang Q.**, Lally N., Sack C., Nost E., and Rosenfeld H., 2018. Improving Spatial Decision Making Using Interactive Maps: An Empirical Study on Interface and Decision Complexity in the North American Hazardous Waste Trade. *Environment and Planning B*, 2018: 2399808318764122.
- 12) Cao K., **Huang Q.**, 2018. Geo-Sensor for Potential Prediction of Earthquakes: Can Earthquake Be Predicted By Abnormal Animal Phenomena? *Annals of GIS*, 24(2): 125-138.
- 13) **Huang Q.**, Li J., Li Z., 2018. A Hybrid Cloud Platform Based on Multi-sourced Computing and Model Resources for Geosciences. *International Journal of Digital Earth*. 11(12): 1184 - 1204.
- 14) **Huang Q.**, Cervone G., and Zhang G., 2017. A Cloud-enabled Automatic Disaster Analysis System of Multi-sourced Data Streams: An Example Synthesizing Social Media, Remote Sensing and Wikipedia Data. *Computers, Environment and Urban Systems*, 66: 23-37.
- 15) **Huang Q.**, 2017. Mining Online Footprints to Predict User's Next Location. *International Journal of Geographic Information Science*, 31(3): 523-541.
- 16) Wong D., **Huang Q.**, 2017. "Vote with Their Feet": Delineating the Sphere of Influence Using Social Media Data. *International Journal of Geo-Information*, 2017, 6 (11), 325. Doi: 10.3390/ijgi6110325.
- 17) Li Z., **Huang Q.**, Carbone G.J., Hu F., 2017. A High Performance Query Analytical Framework for Supporting Data-Intensive Climate Studies. *Computers, Environment and Urban Systems*, 62: 210-221.
- 18) Yang C., **Huang Q.**, Li Z., Liu K., Hu F., 2017. Big Data and Cloud Computing: Innovation Opportunities and Challenges. *International Journal of Digital Earth*, 10: 13-53.
- 19) Zhang G., Zhu AX., **Huang Q.**, 2017. A GPU-Accelerated Adaptive Kernel Density Estimation Approach for Efficient Point Pattern Analysis on Spatial Big Data. *International Journal of Geographical Information Science*, 31(10): 2068-2097.
- 20) Li R., Feng W., Wu H., **Huang Q.**, 2017. A Replication Strategy for a Distributed High-Speed Caching System Based on Spatiotemporal Access Patterns of Geospatial Data. *Computers, Environment and Urban Systems*, 61: 163-171.
- 21) **Huang Q.**, Wong D., 2016. Activity Patterns, Socioeconomic Status and Urban Spatial Structure: What Can Social Media Data Tell Us? *International Journal of Geographic Information Science*, 30(9): 1873-1898.
- 22) Zhang G., **Huang Q.**, Zhu A.X., Keel J. H., 2016. Enabling Point Pattern Analysis on Spatial Big Data Using Cloud Computing: Optimizing and Accelerating Ripley's K Function. *International Journal of Geographical Information Science*, 30 (11): 2230-2252.
- 23) Ye X., **Huang Q.**, Li W., 2016. Integrating Big Social Data, Computing and Modeling for Spatial Social Science. *Cartography and Geographic Information Science*, 43(5): 377-378.

- 24) Cervone G., Sava E., **Huang Q.**, Schnebele E., Harrison J., Waters N., 2016. Using Twitter for Tasking Remote-Sensing Data Collection and Damage Assessment: 2013 Boulder Flood Case Study. *International Journal of Remote Sensing*, 37(1): 100-124.
- 25) Wang C., Pavlowsky R.T., **Huang Q.**, C. Chang, 2016. Channel Bar Area Extraction for a Mining-Contaminated River Using High-Spatial Multispectral Remote Sensing Imagery. *GIScience and Remote Sensing*, 53(3): 283-302.
- 26) Zhang T., Li J., Liu Q., **Huang Q.**, 2016. A Cloud-Enabled Remote Visualization Tool for Time-Varying Climate Data Analytics. *Environmental Modeling & Software*, 75: 513-518.
- 27) Gui Z., Yu M., Yang C., Jiang Y., Chen S., Xia J., **Huang Q.**, Liu K., Li Z., Hassan M., Jin B., 2016. Developing Subdomain Allocation Algorithms Based on Spatial and Communicational Constraints to Accelerate Dust Storm Simulation. *PLoS ONE*, 11(4): e0152250. doi:10.1371/journal.pone.0152250.
- 28) **Huang Q.**, Wong D., 2015. Modeling and Visualizing Regular Human Mobility Patterns with Uncertainty: An Example Using Twitter Data. *Annals of the Association of American Geographers*, 105(6): 1179-1197.
- 29) **Huang Q.**, Xiao Y., 2015. Geographic Situational Awareness: Mining Tweets for Disaster Preparedness, Emergency Response, Impact, and Recovery. *International Journal of Geo-Information*, 4(3): 1549-1568.
- 30) Xiao Y., **Huang Q.**, Wu K., 2015. Understanding Social Media Data for Disaster Management. *Natural Hazards*, 79(3):1663-1679.
- 31) **Huang Q.**, Xu C., 2014. A Data-Driven Framework for Archiving and Exploring Social Media Data, *Annals of GIS*, 20(4): 265-277.
- 32) Li Z., Yang C., **Huang Q.**, Liu K., Sun M., Xia J., et al., 2014. Building Model as a Service to Support Geosciences. *Computers, Environment and Urban Systems*. DOI: 10.1016/j.compenvurbsys.2014.06.004.
- 33) Xia J., Yang C., Liu K., Gui Z., Li Z., **Huang Q.**, Li, R., 2014. Adopting Cloud Computing to Optimize Spatial Web Portals for Better Performance to Support Digital Earth and Other Global Geospatial Initiatives. *International Journal of Digital Earth*, 8(6): 451-475.
- 34) Gui Z., Yang C., Xia J., **Huang Q.** et al., 2014. A Service Brokering and Recommendation Mechanism for Better Selecting Cloud Services. *PLoS ONE*, 9(8): e105297. doi: 10.1371/journal.pone.0105297.
- 35) **Huang Q.**, Yang C., Liu K., Xia J., Xu C., Li J., Gui Z., Sun M., Li Z., 2013. Evaluating Open Source Cloud Computing Solutions for Geosciences. *Computers & Geosciences*, 59(9): 41-52.
- 36) **Huang Q.**, Yang C., Benedict K., Chen, S., Rezgui A., Xie J., 2013. Utilize Cloud Computing to Support Dust Storm Forecasting. *International Journal of Digital Earth*, 6(4): 338-355.
- 37) **Huang Q.**, Yang C., Benedict K., Rezgui A., Xie J., Xia J., Chen, S., 2013. Using Adaptively Coupled Models and High-performance Computing for Enabling the Computability of Dust Storm Forecasting. *International Journal of Geographic Information Science*, 27(4): 765-784.
- 38) Li J., Jiang Y., Yang C., **Huang Q.**, Rice M., 2013. Visualizing 3D/4D Environmental Data Using Many-Core Graphics Processing Units (GPUs) and Multi-Core Central Processing Units (CPUs). *Computers & Geosciences*, 59 (2013): 78-89.
- 39) Sun M., Li J., Yang C., Schmidt G.A., Bambacus M., Cahalan R., **Huang Q.**, Xu C., Noble E.U., Li Z., 2012. A Web-based Geovisual Analytical Tool for Spatiotemporal Climate Data. *Future Internet*, 4(4): 1069-1085.
- 40) **Huang Q.**, Yang C., 2011. Optimizing Grid Configuration to Support Geospatial Processing – An Example with DEM Interpolation. *Computer & Geosciences*, and 37(2): 165-176.

- 41) Yang C., Wu H., **Huang Q.**, Li Z., Li J., 2011. Spatial Computing for Supporting Physical Sciences. *Proceedings of National Academy of Sciences*, 108(14):5498-5503.
- 42) Yang C., Goodchild M., **Huang Q.**, Nebert D., Raskin R., Bambacus M., Xu Y., Fay D., 2011. Spatial Cloud Computing – How Can Geospatial Sciences Use and Help to Shape Cloud Computing. *International Journal of Digital Earth*, 4(4): 305-329.
- 43) Xie J., Yang C., Zhou B., **Huang Q.**, 2010. High Performance Computing for the Simulation of Dust Storms. *Computers, Environment, and Urban Systems*, 34(4): 278-290.
- 44) **Huang Q.**, Mao S., Li M., Ru P., 2006. The Safety Assurance System for Coalmine Based on the Three-tiers B/S Architecture. *Coal Engineering*, 2006(11): 10-14. (Chinese)
- 45) Zhao P., Mao S., **Huang Q.**, Cheng L., 2007. Design on Intelligent Decision Support System for Mining and Excavation Connection in Mine. *Coal Science and Technology*, 2007(03): 55-60. (Chinese)

2.2.5 Refereed Conference Papers

- 1) Rao J., Gao S., Kang Y., and **Huang Q.**, 2020. LSTM-TrajGAN: A Deep Learning Approach to Trajectory Privacy Protection. In *Proceedings of the 11th International Conference on Geographic Information Science (GIScience 2021)*, pp. 1-16. (Accepted)
- 2) Peng B., Liu X., Meng Z., and **Huang Q.**, 2019. Urban Flood Mapping with Residual Patch Similarity Learning. In *Proceedings of the 3rd ACM SIGSPATIAL International Workshop on AI for Geographic Knowledge Discovery (GeoAI 2019)*, Nov 5-8, Chicago, IL, USA, p.40-47. DOI:<https://doi.org/10.1145/3356471.3365235>.
- 3) Meng Z., Peng B., **Huang Q.**, 2019. Flood Depth Estimation from Open Images. In *Proceedings of the 2nd ACM SIGSPATIAL International Workshop on Advances on Resilient and Intelligent Cities*, ACM SIGSPATIAL 2019, Nov 5-8, Chicago, IL, USA.
- 4) Zhou Z., Xie X., **Huang Q.**, 2018. Enhancing the Impression on Cities: Mining Relations of Attractions with Geo-tagged Photos. In *proceedings of the 2018 IEEE Cloud and Big Data Computings*, Guangzhou, China, October 7-11, 2018, pg. 1-7.
- 5) Gao S., **Huang Q.**, 2018. Exploring the Effectiveness of Geomasking Techniques for Protecting the Geoprivacy of Twitter Users. In *proceedings of the Location Privacy & Security Workshop*, GIScience 2018, Aug 28-31, 2018, Melbourne, Australia, pg. 1-8.
- 6) Liu X., **Huang Q.**, Li Z., Wu M., 2017. The Impact of MTUP: Explore Online Trajectories for Human Mobility Studies. In *Proceedings of the 1st Workshop on Prediction of Human Mobility*, ACM SIGSPATIAL 2017, Nov 7-10, Redondo Beach, CA, USA, pg.1-9.
- 7) **Huang Q.**, Li Z., Li J., Chang C., 2016. Mining Frequent Trajectory Patterns from Online Footprints. In *Proceedings of the 7th International ACM SIGSPATIAL International Workshop on GeoStreaming (IWGS) 2016*, ACM SIGSPATIAL 2016, Oct 31-Nov 03, Burlingame, CA, USA, pg.1-8.
- 8) **Huang Q.**, Cervone G., Jing D., Chang C., 2015. DisasterMapper: A CyberGIS Framework for Disaster Management Using Social Media Data. In *Proceedings of the 4th International ACM SIGSPATIAL Workshop on Analytics for Big Geospatial Data (BigSpatial)*, ACM SIGSPATIAL 2015, Nov 1-3, Seattle, WA, pg.1-6.
- 9) Chang C., Ye Z., **Huang Q.**, Wang C. 2015. An Integrative Method for Mapping Urban Land Use Change Using Geo-sensor Data. In *Proceedings of the 1st International ACM SIGSPATIAL Workshop on Smart Cities and Urban Analytics*, ACM SIGSPATIAL 2015, Nov 1-3, Seattle, WA.
- 10) Hultquist C., Simpson M., Cervone G., **Huang Q.**, 2015. Using Nightlight Remote Sensing Imagery and Twitter Data to Study Power Outages. In *Proceedings of the 1st ACM SIGSPATIAL International Workshop on the Use of GIS in Emergency Management 2015*, ACM SIGSPATIAL 2015, Nov 1-3, Seattle, WA.

- 11) **Huang Q.**, Cao G., Wang C., 2014. From Where Do Tweets Originate? - A GIS Approach for User Location Inference. In *Proceedings of the 7th ACM SIGSPATIAL International Workshop on Location-Based Social Networks (LBSN '14)*, ACM SIGSPATIAL 2014, Nov 6-9, Dallas, TX, pg. 1-8.
- 12) Li Z., Yang C., Sun M., Li J., Xu C., **Huang Q.**, Liu K., 2013. A High Performance Web-Based System for Analyzing and Visualizing Spatiotemporal Data for Climate Studies. In *Proceedings of International Symposium on Web and Wireless Geographical Information Systems*, pp. 190-198. Springer, Berlin Heidelberg.
- 13) **Huang Q.**, Xia J., Yang C., Hassan M., Chen S., 2012. An Experimental Study of Open-Source Cloud Platforms for Dust Storm Forecasting. In *Proceedings of the ACM SIGSPATIAL 2012*, Nov 6-9, Redondo Beach, CA, pp.534-537.
- 14) Li J., Jiang Y., Yang C., **Huang Q.**, 2012. Visualizing 3D/4D Environmental Big Data Using Many-core Compute Unified Device Architecture (CUDA) and Multi-core Central Processing Unit (CPUs). In *Proceedings of the MAT4GIS workshop, the 7th GIScience International Conference*, Sep 18-21, 2012, Columbus, Ohio, USA.
- 15) **Huang Q.**, Yang C., Nebert D., Liu K., Wu H., 2010. Cloud Computing for Geosciences: Deployment of GEOSS Clearinghouse on Amazon's EC2. In *Proceedings of the International Workshop on High Performance and Distributed Geographic Information Systems*, ACM SIGSPATIAL 2010, San Jose, CA.

2.2.6 Refereed Book Chapters & Sections

- 1) **Huang Q.**, Li J., Zhang T., 2020. Domain Application of High Performance Computing in Earth Science: An Example of Dust Storm Modeling and Visualization. In Wu W., and Wang S., eds. *High Performance Computing for Geospatial Applications*, pp. 249-268. Cham: Springer International Publishing.
- 2) Ye X., Li W., **Huang Q.**, 2018. A Synthesized Urban Science in the Context of Big Data and Cyberinfrastructure. In Shen Z. and Li M., eds. *Big Data Support of Urban Planning and Management: The Experience in China*, pp. 435-448. Cham: Springer International Publishing.
- 3) **Huang Q.**, Cervone G., 2016. Usage of Social Media and Cloud Computing during Natural Hazards. In Vance T., Merati N., Yang C., and Yuan M., eds. *Cloud Computing for Ocean and Atmospheric Sciences*. Academic Press.
- 4) Li J., Liu K., **Huang Q.**, 2016. Utilizing Cloud Computing To Support Scalable Atmospheric Modeling: A Case Study of Cloud-Enabled ModelE. In Vance T., Merati N., Yang C., and Yuan M., eds. *Cloud Computing for Ocean and Atmospheric Sciences*. Academic Press.
- 5) Yang C., Sun M., Liu K., **Huang Q.**, Li Z., Gui Z., ... & Lostritto P., 2015. Contemporary Computing Technologies for Processing Big Spatiotemporal Data. In Kwan M.P, Richardson D., Wang D., and Zhou C., eds. *Space-Time Integration in Geography and GIScience*, pp. 327-351. Springer Netherlands.
- 6) **Huang Q.**, Li Z., Liu K., Xia J., Xu C., Jiang Y., Yu M., Yang C., 2014. Accelerating Geocomputation with Cloud Computing. In Shi X., Kindratenko V., and Yang C., eds. *Modern Accelerating Technologies for GIScience*. Springer.
- 7) Li J., Jiang Y., Yang C., **Huang Q.**, 2014. Utilizing GPU to Support Scientific Visualization in Geosciences. In Shi X., Kindratenko V., and Yang C., eds. *Modern Accelerating Technologies for GIScience*. Springer.
- 8) Yang C., Liu K., Nebert D., Li Z., Li W., Wu H., Li J., Sun M., Miao L., **Huang Q.**, Xu Y., Fay D., 2014. GEOSS Clearinghouse - Integrating Geospatial Resources to Support the Global Earth Observation System of Systems. In Karimi H.A., eds. *Big Data: Techniques and Technologies in Geoinformatics*. CRC Press.
- 9) **Huang Q.**, Xia J., Yu M., Benedict K., Bambacus M., 2013. Cloud-Enable Dust Storm Forecasting. In Yang C., Huang Q. eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.

- 10) **Huang Q.**, Xia J., Sun M., Liu K., Li J., Gui Z., Xu C., Yang C., 2013. How to Test the Readiness of Open Source Solutions. In Yang C., Huang Q., eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.
- 11) **Huang Q.**, Li Z., Liu K., Xia J., Jiang Y., Xu C., Yang C., 2013. Handling of Data, Computing, Concurrent and Spatiotemporal Intensities. In Yang C., Huang Q., eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.
- 12) Yang C., **Huang Q.**, 2013. Cloud Computing Concepts, Characteristics and Architecture. In Yang C., Huang Q., eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.
- 13) Li Z., **Huang Q.**, Gui Z., 2013. Enabling Technologies. In Yang C., Huang Q., eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.
- 14) Liu K., **Huang Q.**, Xia J., Li Z., Lostritto P., 2013. How to Use Cloud Computing. In Yang C., Huang Q., eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.
- 15) Liu K., **Huang Q.**, Xia J., 2013. Cloud-enabling Geoscience Applications. In: Yang C., Huang Q., eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.
- 16) Gui Z., Xia J., Zhou N., **Huang Q.**, 2013. How to choose cloud Computing: Towards a Cloud Computing Cost Model. In Yang C., Huang Q., eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.
- 17) Liu K., Nebert D., **Huang Q.**, Xia J., Li Z., 2013. Cloud-Enable GEOSS Clearinghouse. In Yang C., Huang Q., eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.
- 18) Li J., Li Z., **Huang Q.**, Sun M., Liu K., 2013. Cloud-Enabling Climate@Home. In Yang C., Huang Q., eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.
- 19) Xu C., Xia J., **Huang Q.**, Yu M., Bambacus M., 2013. Cloud services. In: Yang C., Huang Q., eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.
- 20) Yang C., Sun M., Xia J., Li J., Liu K., **Huang Q.**, Gui Z., 2013. How to Test the Readiness of Cloud Services. In: Yang C., Huang Q., eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.
- 21) Xu C., Gui Z., Li J., Liu K., **Huang Q.**, Bambacus M., 2013. Open Source Cloud Computing Solutions. In: Yang C., Huang Q., eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.
- 22) Nebert D., **Huang Q.**, 2013. GeoCloud Initiative. In Yang C., Huang Q., eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.
- 23) Yang C., **Huang Q.**, Gui Z., Li Z., Xu C., Jiang Y., Li J., 2013. Cloud Computing Research for Geosciences and Applications. In Yang C., Huang Q., eds. *Spatial Cloud Computing: A Practical Approach*, CRC Press/Taylor & Francis.
- 24) Yang C., Wu H., **Huang Q.**, Li Z., Li J., Li W., Miao L., Sun M., 2011. WebGIS Performance Issues and Solutions. In Li S., Dragicevic S., and Veenendaal B., eds. *Advances in Web-based GIS, Mapping Services and Applications*, pp.121-138. Taylor and Francis.
- 25) **Huang Q.**, Yang C., Li W., Wu H., Xie J., and Cao Y., 2010. Geoinformation Computing Platforms. In Yang C., Wong D., Miao Q., and Yang R., eds. *Advanced GeoInformation Science*, pp.79-126. CRC Press.

2.2.7 Semi-Refereed (Abstracts only) Conference Papers

- 1) Wong D., **Huang Q.**, 2016. Variability in Activity Zones Identification in the Modeling of Spatiotemporal Trajectories. In *International Conf. on Spatial Accuracy Assessment in Environmental Sciences 2016*, July 5-8, 2016, Montpellier, French.

- 2) Yu M., Yang C., **Huang Q.**, Gui Z., and Xia J., 2013. Utilizing high spatiotemporal resolution soil moisture for dust storm modeling. In *Second International Conference on Agro-Geoinformatics*, Aug 12-16, 2013, Fairfax, VA, pp. 176-181. IEEE.
- 3) Qu X., Sun M., Xu C., Li J., Liu K., Xia J., **Huang Q.**, Bambacus M., Xu Y., Fay D., Yang C. 2011. A Spatial Web Service Client based on Microsoft Bing Maps. In *The 19th International Conference on Geoinformatics*, June 24-26, 2011, Shanghai, China.
- 4) **Huang Q.**, Mao S., Jiang Y., Ru B., Li M., Dong P., 2009. Utilizing Particle System to Simulate Airflow of Laneway in Underground Mine Environment. In *The 17th International Conference on Geoinformatics*, Aug 12-14, 2009, pp.1-6, doi: 10.1109/GEOINFORMATICS.2009.5293434.
- 5) Li J., Wu. H., Yang C., Xie J., **Huang Q.**, 2009. Using Progressive Transmission of 3D/4D Geospatial Information over the Internet to Facilitate Geo-Visualization in world wind. In *The 17th International Conference on Geoinformatics*, Aug 12-14, 2009, art. no. 5293460.
- 6) Zhou Z., Zhou B., Li W., Griglak B., Caiseda C., **Huang Q.**, 2009. Evaluating Query Performance on Object-Relational Spatial Databases. In *The 2nd IEEE International Conference Computer Science and Information Technology*, 2009, pp.489-492, Qingdao, China.
- 7) Bambacus M., Yang C., Evans J., Li Z., Li W., **Huang Q.**, 2008. Sharing Earth Science Information to Support the Global Earth of Observing System of Systems (GEOSS), *International Geoscience and Remote Sensing Symposium (IGARSS)*, 1(1), art. no. 4778813, pp. I141-I144.
- 8) Xie J., Yang C., **Huang Q.**, Cao Y., Kafatos M., 2008. Utilizing Grid Computing to Support Near Real-Time Geospatial Applications, *International Geoscience and Remote Sensing Symposium (IGARSS)* 2(1), art. no. 4779239, pp. 1290-1293.

2.2.8 Encyclopedia

- 1) **Huang Q.**, 2020. Spatial Cloud Computing. In John P. Wilson, eds. *The Geographic Information Science & Technology Body of Knowledge* (1st Quarter 2018 Edition). DOI: 10.22224/gistbok/2020.1.2.
- 2) **Huang Q.**, 2019. Mobile GIS. In John P. Wilson, eds. *The Geographic Information Science & Technology Body of Knowledge* (1st Quarter 2018 Edition). DOI: 10.22224/gistbok/2020.1.2.
- 3) **Huang Q.**, 2018. Social Media Analytics. In John P. Wilson, eds. *The Geographic Information Science & Technology Body of Knowledge* (1st Quarter 2018 Edition). DOI:10.22224/gistbok/2018.1.10.
- 4) Wang C., **Huang Q.**, 2018. UAV Image Processing and Analysis for Disaster Management. In Phil Laplante, eds. *Encyclopedia of Image Processing*. Springer.
- 5) **Huang Q.**, 2016. MapReduce. In Shekhar S., Xiong Hui, eds. *Encyclopedia of GIS*. Springer.

2.2.9 Semi-Refereed (Abstracts only) Chapters & Sections

- 1) **Huang Q.**, Yang C., 2017. Chapter 3 Introduction to Python. In Yang C. and Huang Q., 2017, eds. *Introduction to Programming and GIS Algorithms with Python and ArcGIS*, CRC Press/Taylor & Francis, 328p. ISBN: 978-1466510081.
- 2) **Huang Q.**, Yang C., 2017. Chapter 4 Python Language Control Structure, File Input/Output and Exception Handling. In Yang C. and Huang Q., 2017, eds. *Introduction to Programming and GIS Algorithms with Python and ArcGIS*, CRC Press/Taylor & Francis, 328p. ISBN: 978-1466510081.
- 3) Yang C., **Huang Q.**, 2017. Chapter 5 Programming Thinking and Vector Data Visualization. In Yang C. and Huang Q., 2017, eds. *Introduction to Programming and GIS Algorithms with Python and ArcGIS*, CRC Press/Taylor & Francis, 328p. ISBN: 978-1466510081.

- 4) Yang C., **Huang Q.**, Liu K, 2017. Chapter 6 Shapefile Handling. In Yang C. and Huang Q., 2017, eds. *Introduction to Programming and GIS Algorithms with Python and ArcGIS*, CRC Press/Taylor & Francis, 328p. ISBN: 978-1466510081.
- 5) Liu K, Yang C., **Huang Q.**, 2017. Chapter 7 Python Programming Environment. In Yang C. and Huang Q., 2017, eds. *Introduction to Programming and GIS Algorithms with Python and ArcGIS*, CRC Press/Taylor & Francis, 328p. ISBN: 978-1466510081.
- 6) Li Z., Yang C., Sun M., **Huang Q.**, 2017. Chapter 8 Vector Data Algorithm. In Yang C. and Huang Q., 2017, eds. *Introduction to Programming and GIS Algorithms with Python and ArcGIS*, CRC Press/Taylor & Francis, 328p. ISBN: 978-1466510081.
- 7) Sun. M., **Huang Q.**, and Yang C., 2017. Chapter 9 Introduction to ArcGIS Programming. In Yang C. and Huang Q., eds. 2017, *Introduction to Programming and GIS Algorithms with Python and ArcGIS*, CRC Press/Taylor & Francis, 328p. ISBN: 978-1466510081.

2.3 SOFTWARE PROTOTYPE AND PATENT

- Yang C., Li J., Jiang Y., **Huang Q.**, 2011. Visualizing Volume Data of Atmospheric Particles in a Real 3D/4D/5D Fashion.

3. TEACHING

3.1 INSTRUCTOR OF RECORD

*At UW-Madison unless otherwise noted.

- GEOG 170, Our Digital Globe: An Overview of GIScience and its Technology, 2014 Fall, 2013 Fall, 2016 Spring, 2018 Spring, 2018 Fall, 2019 Spring
- GEOG 574, Spatial Database, 2014 Spring, 2015 Spring, 2017 Fall, 2018 Fall
- GEOG 576, Spatial Web and Mobile Programming, 2017 Spring
- GEOG 970, Seminar in Geographic Information Science, 2015 Spring
- GGS 650, Introduction to Programming and GIS Algorithms, 2012 Fall (GMU)

3.2 TEACHING ASSISTANT

- GEOG 563, Advanced Geographic Information System, 2008 Spring (GMU)
- GGS 650, Introduction to Programming and GIS Algorithms, 2011 Fall (GMU)
- GGS 772, Distributed GIS, 2012 Spring (GMU)

3.3 STUDENTS GRADUATED

Served as primary advisor

- Zidong Zhang, 8/2014 – 6/2016, Msc. Student of Geography, UW-Madison; Facebook
- Duanyang Jing, 8/2014 – 8/2016, Msc. Student of Geography, UW-Madison; University of Minnesota, Twin Cities
- Chris Jeffery Scheele, 8/2015 – 8/2017, Msc. Student of Geography, UW-Madison; Arity LLC.
- Xinyi Liu, 8/2016 - 8/2018, Msc. Student of Geography, UW-Madison
- Meiliu Wu, 8/2017 - 8/2019, Msc. Student of Geography, UW-Madison
- Jamp Vongkusolkiet, 8/2018 – 6/2020, Undergraduate, Nelson Institute, UW-Madison.
- Zonglin Meng, 9/2018 – 6/2020, Computer Science, UW-Madison.

Served as committee member

- Yuqin Jiang, 2019. *Quantifying Human Mobility Patterns during Disruptive Events: A Big Data Approach*. Ph.D. Student of Geography, University of South Carolina.
- Suzan Afacan, 2019. *Network Optimization Models for Interdependent Infrastructure Restoration*. Ph.D. Student of Industrial and Systems Engineering, UW-Madison.
- Sulong Zhou, 2019. *Machine Learning and Citizen Science Based Approach for Monitoring the Changing Environment*. Ph.D. Student of Environmental Science, Nelson Institute, UW-Madison.
- Guiming Zhang, 2018. *A representativeness directed approach to spatial bias mitigation in VGI for predictive mapping*. PhD, Student of Geography, UW-Madison.
- Merve Ozen, 2017. *Models to Improve Efficiency of Disaster Relief Operations*. Ph.D. Student of Industrial and Systems Engineering, UW-Madison.
- Kristen L. Vincent, 2017. *The Role of Cartographic Interface Complexity on Spatial Decision Making: A Case Study in the North American Hazardous Waste Trade*. Msc. Student of Geography, UW-Madison.
- Starr Moss, 2017. *The Relationship between Voting and Crime: A Neighborhood-Level Spatiotemporal Analysis*. Msc. Student of Geography, UW-Madison.
- Zihan Song, 2017. *Map-Based Visual Storytelling: an Assessment of Emerging Genres and Tropes*. Msc. Student of Geography, UW-Madison.
- Jeffrey S. Hatzel, 2017. *Spatial Characteristics of Intraspecific Variation in *Peromyscus maniculatus* based on DNA Barcodes and Environmental Data*. Msc. Student of Geography, UW-Madison.
- Scott Sherwin Farley, 2017. *A User-Centered Approach to Computing Optimization in Ecological Modeling Workflows*. Msc. Student of Geography, UW-Madison.
- Chaoyi Chang, 2016. *Using New Communication Technologies to Study Politics in Authoritarian China*. PhD, Student of Nelson Institute for Environmental Studies, UW-Madison.
- Robin C. Tolochko, 2016. *Contemporary Professional Practices in Interactive Web Map Design*. Msc. Student of Geography, UW-Madison.
- Yuying Chen, 2015. *Point Object Extraction from Scanned Topographic Maps*. Msc. Student of Geography, UW-Madison.
- Caroline Rose, 2015. *Mapping Technology in Wilderness Search and Rescue*. Msc. Student of Geography, UW-Madison.
- Timothy T. Kennedy, 2014. *Modeling the Multi-dimensional Factors of Parcelization and the Spatial Connection to Land-Use Change in Rural Wisconsin*. PhD. Student of Geography, UW-Madison.
- Erin Hamilton, 2014. *Client-Side versus Server-Side Geoprocessing: Benchmarking the Performance of Web Browsers Processing Geospatial Data Using Common GIS Operations*. Msc. Student of Geography, UW-Madison.

Served as advisor for GIS Certificate students

- Jonathan Fok, 2017. *Comparison of Food Access Areas in Urban Communities in the United States*.
- Beichen Tian, 2017. *Interactive Web Mapping for Pollinator Habitat Suitability Evaluation*.
- Cassie Jorgenson, 2016. *Fine-Scale temperature changes at U. S. Marine Protected Areas using 28 years of AVHRR Pathfinder SST data*.
- Chris Jeffery Scheele, 2015. *WxDelaycast: A Mobile Website for Commercial Aviation Delays by Weather Forecast*.
- Samuel Schumacher, 2014. *Implementing a high-resolution Geocoding system*.

3.4 CURRENT GRADUATE STUDENTS

- Jamp Vongkusolkiet, 8/20020 – present, Undergraduate, Nelson Institute, UW-Madison.

- Xinyi Liu, 8/2016 - present, Msc. Student of Geography, UW-Madison.
- Bo Peng, 8/2017 - present, Ph.D. Student of Geography, UW-Madison.
- Chenxiao (Atlas) Guo, 8/2017 - present, Ph.D. Student of Geography, UW-Madison.

4. SERVICE AND OUTREACH

4.1 DEPARTMENT SERVICE

- 2018: Alternative, UW–Madison Faculty Senate, Geography Representative
- 2017: Member, Professional MSc in GIS Professional Programs Committee
- 2015 - present: Member, UW–Madison Geography Undergraduate Affair Committee
- 2015 - 2017: Alternative, UW–Madison Faculty Senate, Geography Representative
- 2014: Primary, UW–Madison Faculty Senate, Geography Representative
- 2014: Member, Yi-Fu Geography Lecture Series Speakers Committee
- 2013: Member, Geocomputing Committee

4.2 EXTERNAL SERVICE

- 2015 - 2016, Past chair, Cyberinfrastructure Specialty Group (CISG), American Association of Geographers (AAG)
- 2014 - 2015, Chair, CISG, AAG
- 2013 - 2014, Vice chair, CISG, AAG
- 2011 - 2013, Board Director, CISG, AAG
- 2011 – present, Assistant Chair, Cloud Computing Cluster,
- 2009 - 2011, CISG, AAG
 - 11/2009 - 10/2010: Web Master
 - 11/2010 - 10/2011: Email List Manager
- 2009 - 2010, System Administrator, Chinese Professional in Geographic Information Systems
- 2009 - 2010, Web Master, Chinese-American Oceanic and Atmospheric Association

4.3 INVITED TALKS/CONFERENCE PRESENTATIONS

*The presenter is underlined.

- 1) Huang Q., 2020. Big Data and GeoAI for Natural Hazards. Geography colloquiums, UW Milwaukee, Oct 2, 2020. (Invited)
- 2) Huang Q., 2020. Fusing Multi-sourced Sensing Data and GeoAI for Disaster Management. 2020 AAG Annual Meeting, Denver, Colorado, April 6-10, 2020.
- 3) Huang Q., 2019. Opportunities, Challenges, and Applications of Big Data and GeoAI for Natural Hazards. The First Conference on Smart City between China and Netherlands, Beijing, China, Oct 28, 2020. (Invited)
- 4) Huang Q., 2019. Trajectory Analysis, Mining and Applications. Sun Yat-Sen University, GIS Lecture Series, Oct 7. (Invited)
- 5) Huang Q., 2019. Social Media Data Analytics, Mining, and Applications. Wuhan University, RS Institute Lecture Series, Sep 30, 2020. (Invited).
- 6) Huang Q., 2019. Using Social Media Data for Human Mobility Analysis. Peking University, the RS & GIS Lecture Series, Sep 15, 2020. (Invited).
- 7) Huang Q., 2019. Social Media: A New Data Source for Human Mobility Study. Hong Kong Polytechnic University, the LSGI Public Lecture Series, Aug 20, 2020. (Invited)

- 8) **Huang Q.**, 2019. Trajectory Mining and Analysis Based on Social Media Data. Shenzhen University, Summer Camp 2019, Aug 1, 2019. (Invited)
- 9) **Huang Q.**, 2019. Semantic Trajectory Mining From Geo-tagged Tweets. The 29th International Cartographic Conference (ICC2019), Tokio, Japan, July 15–20, 2019.
- 10) **Huang Q.**, 2019. Social Media Data Analytics for Natural Hazards. UW-Madison, Nelson Institute, the Climate, People, and Environment Program (CPEP) seminar series, Mar 26. (Invited)
- 11) **Huang Q.**, 2019. Social Media for Real-time Disaster Management. 2019 AAG Annual Meeting, Washington DC, April 3-7, 2019.
- 12) **Huang Q.**, 2019. Panel: Symposium on Human Dynamics Research in the Age of Smart/Intelligent Systems: Social Media Analytics Tool Development. 2019 AAG Annual Meeting, Washington DC, April 3-7, 2019. (Invited)
- 13) **Huang Q.**, 2019. Social Media for Real-time Disaster Management. 2019 AAG Annual Meeting, Washington DC, April 3-7, 2019.
- 14) **Huang Q.**, 2019. Semantic Trajectory Mining From Geo-tagged Tweets. 2019 International Cartographic Conference (ICC2019), Tokyo, Japan, July 15-20, 2019.
- 15) **Peng B.**, Liu X., Meng Z. and **Huang Q.**, 2019. Urban Flood Mapping with Residual Patch Similarity Learning. *The 3rd ACM SIGSPATIAL International Workshop on AI for Geographic Knowledge Discovery (GeoAI 2019)*, Nov 5-8, Chicago, IL, USA.
- 16) **Meng Z.**, Peng B., and **Huang Q.** 2019. Flood Depth Estimation from Web Images. The 2nd ACM SIGSPATIAL International Workshop on Advances on Resilient and Intelligent Cities, ACM SIGSPATIAL 2019, Nov 5-8, Chicago, IL, USA.
- 17) **Huang Q.**, 2018. "Social Sensing for Natural Hazards". UW-Madison, Nelson Institute, Environmental Sensing Technologies (EnvSt 971), Nov 9. (Invited)
- 18) **Huang Q.**, 2018. Spatial Text Mining: An Enhanced Text-Mining Framework for Disaster Relevant Social Media Data Classification. 2018 AAG Annual Meeting, New Orleans, LA, April 10-14, 2018.
- 19) **Huang Q.**, 2018. GI Science Education: Advancement in Teaching Spatial Databases. 2018 AAG Annual Meeting, New Orleans, LA, April 10-14, 2018. (Invited)
- 20) **Huang Q.**, Guo C., 2017. Public Sentiment and Movement Patterns during Natural Hazards. 2017 American Geophysical Union (AGU) Fall Meeting, New Orleans, LA, Dec 12-16, 2017.
- 21) **Huang Q.**, 2016. Social Media: An Emerging Data Source for Human Mobility Studies. The Penn State Department of Geography Coffee Hour Colloquium Series. University Park, PA, Feb 29. (Invited)
- 22) **Huang Q.**, Li Z., Li J., **Chang C.**, 2016. Mining Frequent Trajectory Patterns from Online Footprints. 7th International ACM SIGSPATIAL International Workshop on GeoStreaming (IWGS) 2016, ACM SIGSPATIAL 2016, October 31-November 03, Burlingame, CA, USA.
- 23) **Wong D.**, **Huang Q.**, 2016. Variability in Activity Zones Identification in the Modelling of Spatiotemporal Trajectories. International Conf. on Spatial Accuracy Assessment in Environmental Sciences 2016, 5 - 8 July 2016, Montpellier, French.
- 24) **Xu M.**, Hu F., Yu M., Scheele C., Liu K., **Huang Q.**, Yang C., Little M., 2016. Data Container Study for Handling Array-based Data Using Rasdaman, Hive, Spark, and MongoDB. 2016 AGU Fall Meeting, San Francisco, CA, Dec 12-16, 2016.
- 25) **Scheele C.**, **Huang Q.**, 2016. An Enhanced Text-Mining Framework for Extracting Disaster Relevant Data through Social Media and Remote Sensing Data Fusion. 2016 AGU Fall Meeting, San Francisco, CA, Dec 12-16, 2016.
- 26) **Huang Q.**, Scheele C., Yang C., Hu F., Yu M., Liu K., 2015. Rasdaman for Big Spatial Raster Data. 2015 AGU Fall Meeting, San Francisco, CA, Dec 14-18, 2016.
- 27) **Huang Q.**, Cervone, G., Jing, D., Chang, C., 2015. Disastermapper: A CyberGIS Framework for Disaster Management Using Social Media Data. ACM SIGSPATIAL International Workshop on Analytics for Big Geospatial Data 2015, November 2015, Seattle, WA, USA.

- 28) Cervone G., Sava, E., **Huang Q.**, 2015. A CyberGIS Framework for the Study of Environmental Hazards, CyberGIS Meeting, September 2015, Reston VA.
- 29) **Huang Q.**, 2015. Mining Spatiotemporal Social Media Data to Predict User's Next Location. The 1st International Workshop on Spatiotemporal Computing, July 13 – 15th, 2015, Fairfax, Virginia, USA.
- 30) Chang C., Z. Ye, **Huang Q.**, and Wang C. 2015. An Integrative Method for Mapping Urban Land Use Change Using Geo-sensor Data. 1st International ACM SIGSPATIAL Workshop on Smart Cities and Urban Analytics, ACM SIGSPATIAL 2015, Nov 1-3, Seattle, WA.
- 31) Hultquist C., Simpson M., Cervone G, **Huang Q.**, 2015. Using Nightlight Remote Sensing Imagery and Twitter Data to Study Power Outages. The 1st ACM SIGSPATIAL International Workshop on the Use of GIS in Emergency Management 2015 (EM-GIS 2015), ACM SIGSPATIAL 2015, Nov 1-3, Seattle, WA.
- 32) **Huang Q.**, 2015. Mining Tweets for Disaster Preparedness, Response, Impact and Recovery Analysis. 2015 AAG Annual Meeting, April 21 – 25, 2015, Chicago, Illinois, USA.
- 33) **Huang Q.**, 2015. DisasterTrack: A Geospatial System for Disaster Management Using Social Media. 2015 Geospatial Summit, March 26, 2015, Madison, WI.
- 34) **Huang Q.**, 2014. Cyberinfrastructure for Environmental Studies. *Weston Roundtable Series*, Nelson Institute, Oct 23. (Invited)
- 35) Li J., Zhang T., **Huang Q.**, Liu Q., 2014. A Lightweight Remote Parallel Visualization Platform for Interactive Massive Time-varying Climate Data Analysis. AGU Fall Meeting, San Francisco, CA, Dec 2014.
- 36) **Huang Q.**, Cao G., Wang C., 2014. From Where Do Tweets Originate? - A GIS Approach for User Location Inference. The 7th ACM SIGSPATIAL International Workshop on Location-Based Social Networks (LBSN '14), ACM SIGSPATIAL 2014, Nov 6-9, Dallas, TX.
- 37) **Huang Q.**, 2014. Accelerating Geocomputation with Cloud Computing. 2014 AAG Annual Meeting, Tampa, Florida.
- 38) Yu M., Yang C., **Huang Q.**, Gui Z., and Xia J., 2013. Utilizing High Spatiotemporal Resolution Soil Moisture for Dust Storm Modeling. In *Agro-Geoinformatics, 2013 Second International Conference on* (pp. 176-181). IEEE.
- 39) Jiang Y., Yang C., **Huang Q.**, Li J., Sun M., 2013. Distributed GPU Computing in GIScience. AGU Fall Meeting, San Francisco, CA, Dec 2013.
- 40) Nebert D.D., **Huang Q.**, Yang C., 2013. Cloud Computing For Geosciences--Geocloud for Standardized Geospatial Service Platforms. AGU Fall Meeting, San Francisco, CA, Dec 2013.
- 41) Gui Z., Yang C., Xia J., **Huang Q.**, Yu M., 2013. Accelerating Dust Storm Simulation by Balancing Task Allocation in Parallel Computing Environment. 2013 AGU Fall Meeting, San Francisco, CA, Dec 2013.
- 42) **Huang Q.**, Yang C., 2013. Using Mapreduce and Cloud Computing to Support Geospatial Processing. 2013 AAG Annual Meeting, Los Angeles, California, April 2013.
- 43) Sun M., Li J., Yang C., Schmidt G. A., Bambacus M., Cahalan R., **Huang Q.**, Xu C. and Noble E. U., 2012. A Web-based Geovisual Analytical System for Climate Studies. AGU Fall Meeting, San Francisco, CA, Dec 2012.
- 44) Yang C., **Huang Q.**, Xia J., Liu K., Li J., Xu C., Sun M., Bambacus M., Xu Y., Fay D., 2012. Uncover the Cloud for Geospatial Sciences and Applications to Adopt Cloud Computing. AGU Fall Meeting, San Francisco, CA, Dec 2012.
- 45) Li J., Jiang Y., Yang C., **Huang Q.**, 2012. Visualizing 3D/4D Environmental Big Data Using Many-core Compute Unified Device Architecture (CUDA) and Multi-core Central Processing Unit (CPUs). MAT4GIS workshop, The 7th GIScience International Conference, Columbus, Ohio, USA, Sept.18-21, 2012.
- 46) Li J., Jiang Y., Yang C., **Huang Q.**, 2012. Visualizing 3D/4D Environmental Big Data Using Many-core Compute Unified Device Architecture (CUDA) and Multi-core Central Processing Unit (CPUs). AGU Fall Meeting, San Francisco, CA, Dec 2012.

- 47) **Huang Q.**, Yang C., Benedict K., 2012. Utilizing Spatial Cloud Computing to Support Dust Storm Simulation. 2012 Annual Meeting, New York, New York, Feb 2012.
- 48) **Qu X.**, Sun M., Xu C., Li J., Liu K., Xia J., **Huang Q.**, Bambacus M., Xu Y., Fay D., Yang C. 2011. A Spatial Web Service Client based on Microsoft Bing Maps. The 19th International Conference on Geoinformatics, June 24-26, 2011, Shanghai, China.
- 49) **Yang C.**, Bambacus M., Freeman SM., **Huang Q.**, Li J., Sun M., Xu C., 2011. A Computing Infrastructure for Supporting Climate Studies. 2011 AGU Fall Meeting, San Francisco, CA, 13-17 December.
- 50) **Huang Q.**, Yang C., Benedict K., 2011. Utilizing High Performance Computing and Loosely-Coupled Nested Models to Enable the Computability of Dust Storm Forecasting. 2011 AGU Fall Meeting, San Francisco, CA, 13-17 December.
- 51) **Huang Q.**, Yang C., Benedict K., 2011. Utilize Model Interoperability and Cloud Computing to Support Dust Storm Simulation. 2011 Annual Meeting, Seattle, Washington, April 2011.
- 52) **Huang Q.**, Yang C., Nebert D., Liu K., Wu H., 2010. Cloud Computing for Geosciences: Deployment of GEOSS Clearinghouse on Amazon's EC2, Proceedings of the ACM SIGSPATIAL International Workshop on High Performance and Distributed Geographic Information Systems, San Jose, CA, pp.35-38.
- 53) **Huang Q.**, Yang C., Wu. H, Liu K., Li J., 2010. Cloud Computing for Earth Science, July 20-23, 2010, ESIP Federation Meeting, Knoxville, TN.
- 54) Liu K., Yang C., Wu. H, Li W., Li Z, Miao T., **Huang Q.**, 2010. Metadata in GEOSS Clearinghouse, July 20-23, 2010, ESIP Federation Meeting, Knoxville, TN.
- 55) **Yang C.**, Wu. H, Li W., Liu K., **Huang Q.**, 2010. GEOSS Clearinghouse based on GeoNetwork Open Source, July 20-23, 2010, ESIP Federation Meeting, Knoxville, TN.
- 56) **Huang Q.**, Yang C., Wu. H, Xie J., Li J., Li Z., Sun M., 2010. Cloud Computing for Earth Science – Parallelize and schedule spatial computing for WRF-NMM model. AAG 2010 Annual Meeting, Washington, DC Online Program 14-18 April, 2010-4-15. (Best student presentation, 2nd place).
- 57) **Liu K.**, Yang C., Wu H., **Huang Q.**, 2010. The GEOSS Clearinghouse based on GeoNetwork Opensource. AGU Fall Meeting, San Francisco, CA, 13-17 December.
- 58) **Huang Q.**, Yang C., Xie J., Wu. H, Li J., 2009. Utilizing Model Interoperability and High Performance Computing to Enhance Dust Storm Simulation. AGU 2009 Fall Meeting, San Francisco, CA, Dec 14-18, 2009-12-30.
- 59) **Huang Q.**, Mao S., Jiang Y., Ru B., Li M., Dong P., 2009. Utilizing Particle System to Simulate Airflow of Laneway in Underground Mine Environment. 17th International Conference on Geoinformatics, 2-14, Aug. 2009.
- 60) **Li J.**, Wu. H, Yang C., Xie J., **Huang Q.**, 2009. Using Progressive Transmission Of 3D/4D Geospatial Information over the Internet to Facilitate Geo-Visualization in world wind. 17th International Conference on Geoinformatics, Geoinformatics 2009.
- 61) **Zhou Z.**, Zhou B., Li W., Griglak B., Caiseda C., **Huang Q.**, 2009. Evaluating Query Performance on Object-Relational Spatial Databases. Computer Science and Information Technology, 2009, 2nd IEEE International Conference, pp.489-492, Qingdao, China.
- 62) **Li J.**, Yang C., Wu, H. **Huang Q.**, Wong D., 2009. Distributed Visualization of Dust Storm in Virtual Globes Virtual Globes. AGU 2009 Fall Meeting, San Francisco, CA, Dec 14-18, 2009.
- 63) **Xie J.**, Yang C., **Huang Q.**, Cao Y., Kafatos M., 2008. Utilizing Grid Computing To Support Near Real-Time Geospatial Applications. IGARSS 2008, Boston, Massachusetts, July 8, 2008.
- 64) **Li Z.**, Yang C., Li W., Li J., **Huang Q.**, Zhou X., 2008. Earth Information Exchange Portlets: sharing the geospatial resources for Earth science and applications in an interoperable fashion. AAG 2008 Annual Meeting, Boston, Massachusetts, April 15-19, 2008.

- 65) Bambacus M., Yang C., Evans J., Li Z., Li W., **Huang Q.**, 2008. Sharing Earth Science Information to Support the Global Earth of Observing System of Systems (GEOSS), International Geoscience and Remote Sensing Symposium (IGARSS).

4.4 CONFERENCES/SESSIONS/WORKSHOPS ORGANIZED

- 2020: Program Committee, the 2nd AI with Geographic Information Systems for Social Good Workshop, the 19th IEEE International Conference on Machine Learning and Applications, Nov 22-25, December 14-17, 2020, Miami, Florida, USA
- 2020: Program Committee, the 19th IEEE International Conference on Machine Learning and Applications, Nov 22-25, December 14-17, 2020, Miami, Florida, USA
- 2020: Program Committee, the 3rd ACM SIGSPATIAL Workshop on Advances In Resilient and Intelligent Cities (ARIC) 2020, ACM SIGSPATIAL 2020, Nov 3- Nov 6, Seattle, Washington, USA.
- 2020: Program Committee, the 2nd International Conference on Big-data Service and Intelligent Computation (BDSIC 2020), Dec 3- Dec 5, Xiamen, China.
- 2019: Program Committee, Annual meetings of Geoinformatics in Sustainable Ecosystem and Society (GSES) and Geospatial Artificial Intelligence for Urban Computing (GeoAI-UC), Nov 22-25, Guangzhou, Guangdong, China.
- 2019: Chair and Organizer, GeoAI and Deep Learning Symposium: Big data and GeoAI for Natural Hazards, 2019 AAG Annual Meeting, Washington, DC.
- 2019: Organizer, Symposium on Frontiers in Geospatial Data Science: Big Data Computing for Geospatial Applications, 2019 AAG Annual Meeting, Washington, DC.
- 2019: Organizer, Technologies and applications of Web-based GIS, 2019 AAG Annual Meeting, Washington, DC.
- 2019: Panelist, Social Sensing and Big Data Computing for Disaster Management, 2019 AAG Annual Meeting, Washington, DC.
- 2018: Program Committee, GIScience 2018, Aug 28-31, Melbourne, Australia.
- 2018: Program Committee, GEOProcessing 2018, Mar 25-29, Rome, Italy.
- 2018: Program Committee, Symposium on Artificial Intelligence and Deep Learning in Geography, AAG Annual Meeting, April 10-14, 2018, New Orleans
- 2018: Program Committee, Symposium on Spatiotemporal Thinking, Computing and Applications, AAG Annual Meeting, April 10-14 2018, New Orleans
- 2018: Chair and Organizer, Artificial Intelligence and Deep Learning Symposium: Big Data and Mining for Natural Hazards, 2018AAG Annual Meeting, New Orleans, LA.
- 2018: Organizer, Spatiotemporal Symposium: Social Sensing and Big Data Computing for Disaster Management, 2018AAG Annual Meeting, New Orleans, LA.
- 2018: Panelist, GI Science Education: Advancements in Teaching Spatial Databases, 2018AAG Annual Meeting, New Orleans, LA.
- 2017: Program Committee, the ACM SIGSPATIAL workshop on AUTONOMOUSGIS 2017, Nov 7-10, Redondo Beach, CA.
- 2017: Organizing Committee, 2nd International Symposium on Spatiotemporal Computing, NSF STC/ISPRS, Aug 7-9, 2017, Cambridge, MA.
- 2016: Convener, NH002: Challenges and opportunities associated with the use of novel data streams during natural hazards and emergencies, AGU Fall Meeting, Dec 12-16, 2016, San Francisco, CA.
- 2016: Program Committee, the 9th ACM SIGSPATIAL International Workshop on Location-Based Social Networks (LBSN '16), ACM SIGSPATIAL 2016, Oct 31- Nov 3, San Francisco, CA.
- 2016: Program Committee, GIScience 2016, Sep 27-30, Montreal, Canada.

- 2015: Program Committee, the 8th ACM SIGSPATIAL International Workshop on Location-Based Social Networks (LBSN '15), ACM SIGSPATIAL 2015, Nov 3-6, Seattle, Washington.
- 2015: Organizing Committee, the 1st International Workshop on Spatiotemporal Computing (IWSC), NSF Spatiotemporal Innovation Center (STC)/ISPRS, 2015, Fairfax, VA.
- 2015: Program committee, Symposium on Spatiotemporal Thinking, Computing and Applications, AAG Annual Meeting, March 29 - April 2, 2016, San Francisco, CA.
- 2015: Chair and Organizer, Social Media for Crisis Management, 2015 AAG Annual Meeting, April 21 - 25, 2015, Chicago, Illinois, USA.
- 2014: Program Committee, the 7th ACM SIGSPATIAL International Workshop on Location-Based Social Networks (LBSN '14), ACM SIGSPATIAL 2014, Nov 6-9, Dallas, TX.
- 2014: Chair, High-performance and Large-scale Geospatial Computing I: Architectures and Frameworks, 2014 AAG Annual Meeting, Tampa, FL.
- 2014: Chair and Organizer, Symposium on Synergistic Advances of CyberGIS and Geography: Cloud Computing for GIScience, 2014 AAG Annual Meeting, Tampa, FL.
- 2013: Chair and Organizer, Spatiotemporal Thinking, Computing and Applications (STCA) Session 6: Cloud Computing, 2013 AAG Annual Meeting, Los Angeles, CA.
- 2013: Organizer, Spatiotemporal Thinking, Computing and Applications 12: Cyberinfrastructure Applications, 2013 AAG Annual Meeting, Los Angeles, CA.
- 2013: Chair and Organizer, Computational Geography, High-performance and Large-scale Geospatial Computing, 2013 AAG Annual Meeting, Los Angeles, CA.
- 2012: Chair and Organizer, Cloud Computing for Geographers, 2012 AAG Annual Meeting, New York, NY.
- 2012: Organizer, Computational Geography, 2012 AAG Annual Meeting, New York, NY.
- 2012: Organizer, Spatiotemporal Thinking and Computing III---Computing and Software, 2012 AAG Annual Meeting, New York, NY.
- 2011: Organizer, Spatial Cloud Computing, 2011 ESIP Winter Meeting, Washington D.C.
- 2011: Organizer, Computational Geography, 2011 AAG Annual Meeting, Seattle, WA.
- 2010: Chair, Spatial Cloud Computing, 2010 ESIP Summer Meeting, Knoxville, TN.
- 2010: Organizer, High Performance Computing for Geographic Sciences, 2010 AAG Annual Meeting, Washington, DC.

4.5 MANUSCRIPT REVIEWS

- 2020 - present: *Sustainable Cities and Society*
- 2020 - present: *Discrete Dynamics in Nature and Society*
- 2019 - present: *Geo-spatial Information Science*
- 2019 - present: *Advances in Water Resources*
- 2019 - present: *EPJ Data Science*
- 2019 - present: *Urban Studies*
- 2019 - present: *Geoscience Frontiers*
- 2018 - present: *Journal of Decision Sciences*
- 2018 - present: *IEEE Access*
- 2018 - present: *Big Earth Data*
- 2018 - present: *Computing in Science and Engineering*
- 2018 - present: *Software Practice and Experience*

- 2017 - present: *Annals of the American Association of Geographers*
- 2017 - present: *International Journal of Disaster Risk Reduction*
- 2017 - present: *Computer & Geosciences*
- 2017 - present: *Transactions in GIS*
- 2017 - present: *Journal of King Saud University - Computer and Information Sciences*
- 2017 - present: *PLOS ONE*
- 2017 - present: *The Professional Geographer*
- 2017 - present: *Geoscientific Model Development*
- 2015 - present: *Computers, Environment and Urban Systems (CEUS)*
- 2015 - present: *Geoinformatica*
- 2015 - present: *Transactions on Spatial Algorithms and Systems*
- 2015 - present: *ISPRS International Journal of Geo-Information (IJGI)*
- 2014 - present: *Transactions on Computers*
- 2014 - present: *Journal of Remote Sensing*
- 2014 - present: *The scientific World Journal*
- 2013 - present: *International Journal of Geographical Information Science (IJGIS)*
- 2013: *GIS for Atmospheric Sciences*, book chapter review
- 2010 - present: *International Journal of Digital Earth*

4.6 MEMBERSHIPS

- 2007 - Present: Member, American Association of Geographers
- 2007 - Present: Member, Earth Science Information Partners
- 2007 - Present: Member, University Consortium for Geographic Information Science
- 2008 - Present: Member, American Geophysical Union
- 2010 - Present: Member, Association for Computing Machinery