Yiqun Xie

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RESEARCH INTERESTS

GeoAI, Machine Learning/Deep Learning, Data Science, Data Mining, Geospatial Information Science

EDUCATION

University of Minnesota   Minneapolis, MN
Ph.D. in Computer Science   2015–2020
Thesis: "GeoAI: Challenges and Opportunities"
Advisor: Shashi Shekhar
Committee: Vipin Kumar, Arindam Banerjee, Singdhansu Chatterjee

PROFESSIONAL EXPERIENCE

University of Maryland   College Park, MD
Assistant Professor in Geospatial Information Science   2020–Current
Center for Geospatial Information Science
Department of Geographical Sciences

HONORS & AWARDS

- **Best Paper Award (1/990)**, IEEE International Conference on Data Mining (ICDM)   2021
- **Best Application Paper Award (1/459)** , SIAM International Conference on Data Mining (SDM) 2023
- **Best Presentation - Honorable Mention**, Google's AI for Social Good mid-program meeting   2022
- **Best Paper Award**, ACM SIGSPATIAL BigSpatial Workshop   2022
- **Winner (Top-3)**, ACM SIGSPATIAL GIS Cup Competition   2022
- **Best Paper Award**, SSTD   2019
- **Best Vision Paper Award**, ACM SIGSPATIAL   2019
    - Highlighted by the Great Innovative Ideas program of the Computing Community Consortium at CRA
- **Best Paper Award**, ACM SIGKDD DeepSpatial Workshop   2020
- **Best Poster Award**, Symposium of UCGIS   2017
- **Outstanding Student of the Year**, Esri Development Center at University of Minnesota   2014
- **Finalist Award**, Annual Figure of College Students in China (200 awardees)   2012

FUNDING

- **UMD PI, NSF/Amazon**, (2147195), $755,098 (UMD share: $424,774; collaborative with the University of Pittsburgh), "FAI: Advancing Deep Learning Towards Spatial Fairness", 2022-2025.

- **PI, NASA** (80NSSC22K1164), $599,956, "Coupled Statistics-Physics Guided Learning to Harness Heterogeneous Earth Data at Large Scales", Advanced Info. Sys. Tech., 2022-2024.
- **PI, NSF** (2126474), $955,837, "Collaborative Research: EarthCube Capabilities: ICESpark: An Open-Source Big Data Platform for Science Discoveries in the New Arctic and Beyond", 2021-2024 (collaborative with WSU: $1.24M overall)
- **PI, NSF** (2105133), $174,983, "CRII: III: Discovering Complex Mixture Patterns in Spatial Data to Advance Resilience of Communities", 2021-2023
- **Co-I, NASA** (80NSSC21K0314), $747,164, "High-Impact Hot Spots of Land Cover Land Use Change: Ukraine and Neighboring Countries", 2021-2023 (PI: Sergii Skakun)
- **PI, Google**: "Leave No One Behind: Spatial AI Enabled Settlement Mapping to Enhance WASH Access for Vulnerable Populations", 2021-2022
- **Team member, UMD Grand Challenges Grant** (Team Project), $366,000 (minimum), "Remediation of Methane, Water, and Heat Waste," 2023-2026
- **PI, UMD FSRA Seed Grant**, "The Spatial Pattern of Success: What Makes Small Businesses Grow Better in Certain Areas?", 2023-2024
- **PI, UMD DRI Seed Grant**, "Transforming Deep Learning with Spatial Awareness", 2021-2023

PUBLICATIONS

Journals (Peer-Reviewed)

[1] **Yiqun Xie**, Shashi Shekhar and Yan Li.
Statistically-Robust Clustering Techniques for Mapping Spatial Hotspots: A Survey.
ACM Computing Surveys (CSUR). 2022. (impact factor: 14.324)

[2] **Yiqun Xie***, Weiye Chen*, Erhu He*, Xiaowei Jia, Han Bao, Xun Zhou, Rahul Ghosh and Praveen Ravirathinam.
Harnessing Heterogeneity in Space with Statistically-Guided Meta-Learning.
Knowledge and Information Systems (KAIS). Springer. 2022. (in press)

[3] Shengyu Chen, Nasrin Kalanat, **Yiqun Xie**, Sheng Li, Jacob Zwart, Jeffrey Sadler, Alison Appling, Samantha Oliver, Jordan Read and Xiaowei Jia.
Physics-Guided Machine Learning from Simulated Data with Different Physical Parameters.
Knowledge and Information Systems (KAIS). Springer. 2023. (in press)

[4] **Yiqun Xie**, Xiaowei Jia, Han Bao, Xun Zhou and Shashi Shekhar.
Significant DBSCAN+: Statistically Robust Density-based Clustering.
ACM Transactions on Intelligent Systems and Technology (TIST). 12(5). 2021. (impact factor: 10.489)

[5] Han Bao, Xun Zhou, **Yiqun Xie**, Yingxue Zhang and Yanhua Li.
COVID-GAN+: Estimating Human Mobility Responses to COVID-19 through Spatio-Temporal Generative Adversarial Networks with Enhanced Features.
ACM Transactions on Intelligent Systems and Technology (TIST). 13(2). 2022. (impact factor: 10.489)

[6] Jayant Gupta, Carl Molnar, **Yiqun Xie**, Joseph Knight and Shashi Shekhar.
Spatial Variability Aware Deep Neural Networks (SVANN): A General Approach.
ACM Transactions on Intelligent Systems and Technology (TIST). 12(6). 2021. (impact factor: 10.489)

[7] Zhihao Wei, Kebin Jia, Pengyu Liu, Xiaowei Jia, **Yiqun Xie**, and Zhe Jiang.
Large-Scale River Mapping Using Contrastive Learning and Multi-Source Satellite Imagery.
Remote Sensing. 13(15): 2893. 2021. (impact factor: 5.349)

[8] **Yiqun Xie** and Shashi Shekhar.
A Unified Framework for Robust and Efficient Hotspot Detection in Smart Cities.
ACM/IMS Transactions on Data Science (TDS). 1(3). 2020.

[9] **Yiqun Xie**, Xun Zhou and Shashi Shekhar.
Discovering Interesting Spatio-temporal Sub-path with Statistical Significance.
ACM Transactions on Intelligent Systems and Technology (TIST). 11(1). 2020. (impact factor: 10.489)

[10] Jiannan Cai, Min Deng, Yiwen Guo, **Yiqun Xie** and Shashi Shekhar.
Discovering regions of anomalous spatial co-locations.
International Journal of Geographical Information Science (IJGIS). 2020. (impact factor: 4.186)

[11] Yan Li, Pratik Kotwal, Pengyue Wang, **Yiqun Xie**, Shashi Shekhar and William Northrop.
Physics-guided Energy-efficient Path Selection Using on-board diagnostics Data.
ACM/IMS Transactions on Data Science. 1(3). 2020.

[12] Jiannan Cai, **Yiqun Xie**, Min Deng and Shashi Shekhar.
Significant spatial co-distribution pattern discovery.
Computers, Environment and Urban Systems. 2020. (impact factor: 5.324)

[13] **Yiqun Xie**, Jiannan Cai, Rahul Bhojwani, Shashi Shekhar and Joseph Knight.
A Locally Constrained Deep Learning Framework for Detecting Small and Densely Distributed Building Footprints.
International Journal of Geographic Information Science (IJGIS). 2019. (impact factor: 5.152)

[14] **Yiqun Xie**, Emre Eftelioglu, Reem Ali, Xun Tang, Yan Li, Ruhi Doshi and Shashi Shekhar.
Transdisciplinary Foundations of Geospatial Data Science.
ISPRS International Journal of Geo-Information. 2017, 6(12). (impact factor: 3.388)

[15] **Yiqun Xie**, Bryan Runck, Shashi Shekhar, Len Kne, David Mulla, Nicholas Jordan and Peter Wiringa.
Collaborative Geodesign and Spatial Optimization for Fragmentation-Free Land Allocation.
ISPRS International Journal of Geo-Information. 2017, 6(7). (impact factor: 3.388)

[16] **Yiqun Xie**, Guoan Tang, Shijiang Yan and Hui Lin.
Crater detection using the morphological characteristics of Chang'E-1 digital elevation models
IEEE Geoscience and Remote Sensing Letters. 10(4), June 2013. (impact factor: 5.343)

Conference Proceedings (Peer-Reviewed)

*By both selectivity and impact, computing conferences are considered as important as journals
(*National Academies Press*). For example, most revolutionizing AI/deep learning methods (e.g., AlexNet, ResNet, GAN, U-Net) are published in conferences.

[17] Zhili Li, **Yiqun Xie** and Xiaowei Jia.
Confidence-based Spatial Self-Corrective Learning to Expand Height Data in High Latitudes.
Accepted by: International Joint Conference on Artificial Intelligence (IJCAI'23). Macao, 2023. (acceptance rate: ∼ 20%)

[18] Erhu He, Yue Wan, Ben Letcher, Jenn Fair, **Yiqun Xie** and Xiaowei Jia.
CGS: Coupled Growth and Survival Model with Cohort Fairness.

Accepted by: International Joint Conference on Artificial Intelligence (IJCAI'23). Macao, 2023. (acceptance rate: ∼ 20%)

[19] **Yiqun Xie***, Zhili Li*, Han Bao, Xiaowei Jia, Dongkuan Xu, Xun Zhou and Sergii Skakun.
Auto-CM: Unsupervised Deep Learning for Satellite Imagery Composition and Cloud Masking Using Spatio-Temporal Dynamics.
Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI'23). Washington D.C., 2023. (acceptance rate: 19.6%)

[20] Zhili Li, **Yiqun Xie**, Xiaowei Jia, Kara Stuart, Caroline Delaire and Sergii Skakun.
Point-to-Region Co-Learning for Poverty Mapping at High Resolution Using Satellite Imagery.
Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI'23). Washington D.C., 2023. (acceptance rate: 19.6%)

[21] Erhu He*, **Yiqun Xie***, Licheng Liu, Weiye Chen, Zhenong Jin and Xiaowei Jia.
Physics Guided Neural Networks for Time-aware Fairness: An Application in Crop Yield Prediction.
Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI'23). Washington D.C., 2023. (acceptance rate: 19.6%)

[22] Zhexiong Liu, Licheng Liu, **Yiqun Xie**, Zhenong Jin and Xiaowei Jia.
Task-Adaptive Meta-Learning Framework for Advancing Spatial Generalizability.
Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI'23). Washington D.C., 2023. (acceptance rate: 19.6%)

[23] Shengyu Chen, **Yiqun Xie**, Xiang Li, Xu Liang and Xiaowei Jia.
Physics-Guided Meta-Learning Method in Baseflow Prediction over Large Regions.
SIAM International Conference on Data Mining (SDM'23). 2023. (acceptance rate: 27.4%)
Best Application Paper Award (1/459)

[24] Xiaowei Jia, Shengyu Chen, Can Zheng, **Yiqun Xie**, Zhe Jiang, Nasrin Kalanat.
Physics-guided Graph Diffusion Network for Combining Heterogeneous Simulated Data: An Application in Predicting Stream Water Temperature.
SIAM International Conference on Data Mining (SDM'23). 2023. (acceptance rate: 27.4%)

[25] Yan Li, Mingzhou Yang, Matthew Eagon, Majid Farhadloo, **Yiqun Xie**, William Northrop and Shashi Shekhar.
Eco-PiNN: A Physics-informed Neural Network for Eco-toll Estimation..
SIAM International Conference on Data Mining (SDM'23). 2023. (acceptance rate: 27.4%)

[26] Zhe Jiang, Yupu Zhang, Saugat Adhikari, Da Yan, Arpan Man Sainju, Xiaowei Jia and **Yiqun Xie**.
Hidden Markov Forest for Terrain-Aware Flood Inundation Mapping on Earth Imagery.
SIAM International Conference on Data Mining (SDM'23). 2023. (acceptance rate: 27.4%)

[27] **Yiqun Xie***, Erhu He*, Xiaowei Jia, Weiye Chen, Han Bao, Sergii Skakun, Zhe Jiang, Rahul Ghosh and Praveen Ravirathinam.
Fairness by "Where": A Statistically-Robust and Model-Agnostic Bi-Level Learning Framework.
The Thirty-Sixth AAAI Conference on Artificial Intelligence (AAAI'22). Virtual online, 2022. (acceptance rate: 15%)

[28] **Yiqun Xie***, Erhu He*, Xiaowei Jia, Han Bao, Xun Zhou, Rahul Ghosh and Praveen Ravirathinam.
Statistically-Guided Deep Network Transformation to Harness Heterogeneity in Space (Extended Abstract).

The 31st International Joint Conference on Artificial Intelligence (IJCAI'22), Sister Conference Best Paper Track. 2022. (invitation only)

[29] Han Bao, Xun Zhou, **Yiqun Xie**, Yanhua Li and Xiaowei Jia.
STORM-GAN: Spatio-Temporal Meta-GAN for Cross-City Estimation of Human Mobility Responses to COVID-19.
IEEE International Conference on Data Mining (ICDM'22). 2022. (acceptance rate: 9.77%)

[30] Wenchong He, Marcus Kriby, Zhe Jiang, **Yiqun Xie**, Xiaowei Jia, Da Yan and Yang Zhou.
Quantifying and Reducing Registration Uncertainty of Spatial Vector Labels on Earth Imagery.
The 28th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'22). 2022. (acceptance rate: 15%)

[31] Erhu He*, **Yiqun Xie***, Xiaowei Jia, Weiye Chen, Han Bao, Xun Zhou, Zhe Jiang, Rahul Ghosh and Praveen Ravirathinam.
Sailing in the Location-Based Fairness-Bias Sphere.
The 30th ACM SIGSPATIAL International Conference on Advancements in Geographic Information Systems (SIGSPATIAL'22). 2022. (acceptance rate: 23.8%)

[32] Xiaowei Jia, Shengyu Chen, **Yiqun Xie**, Haoyu Yang, Alison Appling, Samantha Oliver and Zhe Jiang.
Modeling Reservoir Release in Stream Temperature Prediction Using Pseudo-Prospective Learning and Physical Simulations.
SIAM International Conference on Data Mining (SDM'22). 2022. (acceptance rate: 27.8%)

[33] Xiaohu Zhao, Kebin Jia, Benjamin Letcher, Jennifer Fair, **Yiqun Xie**, and Xiaowei Jia.
VIMTS: Variational-based Imputation for Multi-modal Time Series.
IEEE International Conference on Big Data (BigData'22). 2022. (acceptance rate: 19.2%)

[34] **Yiqun Xie***, Erhu He*, Xiaowei Jia, Han Bao, Xun Zhou, Rahul Ghosh and Praveen Ravirathinam.
A Statistically-Guided Deep Network Transformation and Moderation Framework for Data with Spatial Heterogeneity.
IEEE International Conference on Data Mining (ICDM'21). 2021. (acceptance rate: 9.9%)
Best Paper Award (1/990)

[35] Xiaowei Jia, **Yiqun Xie**, Sheng Li, Shengyu Chen, Jacob Zwart, Jeffrey Sadler, Alison Appling, Samantha Oliver and Jordan Read.
Physics-Guided Machine Learning from Simulation Data: An Application in Modeling Lake and River Systems.
IEEE International Conference on Data Mining (ICDM'21). 2021. (acceptance rate: 9.9%)

[36] **Yiqun Xie***, Xiaowei Jia*, Han Bao, Xun Zhou, Jia Yu, Rahul Ghosh and Praveen Ravirathinam.
Spatial-Net: A Self-Adaptive and Model-Agnostic Deep Learning Framework for Spatially Heterogeneous Datasets.
Proceedings of the 29th ACM SIGSPATIAL International Conference on Advancements in Geographic Information Systems (SIGSPATIAL'21). 2021. (acceptance rate: 22.4%)

[37] **Yiqun Xie**, Han Bao, Yan Li and Shashi Shekhar.
Discovering Spatial Mixture Patterns of Interest.
Proceedings of the 28th ACM SIGSPATIAL International Conference on Advancements in Geographic Information Systems (SIGSPATIAL'20). 2020. (acceptance rate: 22.1%)

[38] Han Bao, Xun Zhou, Yingxue Zhang, Yanhua Li and **Yiqun Xie**.

COVID-GAN: Estimating Human Mobility Responses to COVID-19 Pandemic through Spatio-Temporal Conditional Generative Adversarial Networks.
Proceedings of the 28th ACM SIGSPATIAL International Conference on Advancements in Geographic Information Systems (SIGSPATIAL'20). 2020. (acceptance rate: 22.1%)

[39] **Yiqun Xie**, Shashi Shekhar, Richard Feiock and Joseph Knight.
Revolutionizing Tree Management via Intelligent Spatial Techniques.
Proceedings of the 27th ACM SIGSPATIAL International Conference on Advancements in Geographic Information Systems (SIGSPATIAL'19). Chicago, IL, Nov. 2019. (acceptance rate: 15% for vision papers).
Best Vision Paper Award

[40] **Yiqun Xie** and Shashi Shekhar.
Significant DBSCAN towards Statistically Robust Clustering.
International Symposium on Spatial and Temporal Databases (SSTD'19). Vienna, Austria, Aug. 2019. (acceptance rate: 32%)
Best Paper Award

[41] **Yiqun Xie** and Shashi Shekhar.
A Nondeterministic Normalization based Scan Statistic (NN-scan) towards Robust Hotspot Detection.
SIAM International Conference on Data Mining (SDM'19). Calgary, Canada, May 2019. (acceptance rate: 22.7%)

[42] **Yiqun Xie**, Han Bao, Shashi Shekhar and Joseph Knight.
TIMBER: A Framework for Mining Inventories of Individual Trees in Urban Environments using Remote Sensing Datasets.
IEEE International Conference on Data Mining (ICDM'18). Singapore, Nov. 2018. (acceptance rate: 19.94%)

[43] **Yiqun Xie**, Rahul Bhojwani, Shashi Shekhar and Joseph Knight.
An Unsupervised Augmentation Framework for Deep Learning based Geospatial Object Detection: A Summary of Results.
Proceedings of the 26th ACM SIGSPATIAL Conference on Advances in Geographic Information Systems (SIGSPATIAL'18) Seattle, WA, Nov. 2018. (acceptance rate: 20%)

[44] **Yiqun Xie**, Jayant Gupta, Yan Li and Shashi Shekhar.
Transforming Smart Cities with Spatial Computing.
IEEE International Smart Cities Conference (ISC2'18). Kansas City, MO, Sep. 2018. (invited)

[45] **Yiqun Xie** and Shashi Shekhar.
FF-SA: Fragmentation-Free Spatial Allocation.
International Symposium on Spatial and Temporal Databases (SSTD'17). Arlington, VA, Aug. 2017. (acceptance rate: 32.8%)

[46] S. K. Prasad, D. Aghajarian, Mi. McDermott, D. Shah, M. Mokbel, S. Puri, S. J. Rey, S. Shekhar, **Y. Xie**, R. R. Vatsavai, F. Wang, Y. Liang, H. Vo and S. Wang. In:
Parallel Processing over Spatial-Temporal Datasets from Geo, Bio, Climate and Social Science Communities: A Research Roadmap.
IEEE Big Data Congress. June 2017, Honolulu, HI.

[47] E. Eftelioglu, S. Shekhar, D. Oliver, X. Zhou, M. Evans, **Y. Xie**, J. Kang, R. Laubscher and C. Farah.
Ring-shaped hotspot detection: a summary of results.

IEEE International Conference on Data Mining (ICDM'14). Shenzhen, China, Dec. 2014. (acceptance rate: 19.5%)

Workshops

[48] Yan Li, Majid Farhadloo, Santhoshi Krishnan, **Yiqun Xie**, Timothy L Frankel, Shashi Shekhar and Arvind Rao.
CSCD: Towards Spatially Resolving the Heterogeneous Landscape of MxIF Oncology Data.
10th ACM SIGSPATIAL International Workshop on Analytics for Big Geospatial Data (BigSpatial'22) (Best Paper Award)

[49] Jayant Gupta, **Yiqun Xie** and Shashi Shekhar.
Towards Spatial Variability Aware Deep Neural Networks (SVANN): A Summary of Results.
1st ACM SIGKDD Workshop on Deep Learning for Spatiotemporal Data, Applications, and Systems (DeepSpatial). Aug. 2020. (Best Paper Award)

[50] Yan Li, **Yiqun Xie**, Pengyue Wang, Shashi Shekhar and William Northrop.
Significant Lagrangian Linear Hotspot Discovery.
13th ACM SIGSPATIAL International Workshop on Computational Transportation Science (IWCTS). Nov. 2020.

[51] **Yiqun Xie**, KwangSoo Yang, Shashi Shekhar, Brent Dalzell, David Mulla.
Spatially-constrained Geodesign Optimization for Improving Agricultural Watershed Sustainability.
AAAI'17 Workshop on AI and OR for Social Good. 2017.

Non-Computing Conferences/Workshops

[52] Ramanath, Anushree, Saipreethi Muthusrinivasan, **Yiqun Xie**, Shashi Shekhar, and Bharathkumar Ramachandra.
NDVI versus CNN features in deep learning for land cover classification of aerial images.
IEEE International Geoscience and Remote Sensing Symposium (IGARSS'19). 2019.

Reports

[53] Weiye Chen*, Zhihao Wang*, Zhili Li*, **Yiqun Xie**, Xiaowei Jia, Anlin Li.
Deep Semantic Segmentation for Building Detection Using Knowledge-Informed Features from Li-DAR Point Clouds.
ACM SIGSPATIAL 2022. Seattle, WA. (invited as a top-3 SIGSPATIAL Cup solution)

[54] Naoki Abe, **Yiqun Xie**, Shashi Shekhar, Chid Apte, Vipin Kumar, Mitch Tuinstra, and Ranga Raju Vatsavai.
Data Science for Food, Energy and Water: A Workshop Report.
SIGKDD Explorations. 2017.

[55] **Yiqun Xie**, Majid Farhadloo, Ning Guo, Shashi Shekhar, Eric Watkins, Len Kne, Han Bao, Aaron J. Patton, and Kevin Morris.
NTEP-DB 1.0: A relational database for the national turfgrass evaluation program.

International Turfgrass Society Research Journal. 2021.

[56] Jia Yu and **Yiqun Xie.**
Front matter. Proceedings of the 3rd ACM SIGSPATIAL International Workshop on APIs and Libraries for Geospatial Data Science.
ACM, New York, NY, USA.

Book Chapters

[57] Bryan C. Runck, Carissa Slotterback, David Pitt, Len Kne, David Mulla, Nicholas Jordan, Marcus Grubbs, Madeline Goldkamp, Alexander Heid, Peter Wiringa and **Yiqun Xie**.
Designing and Deploying Collaborative Models for Multifunctional Landscape Design: Geodesign in Practice.
Chapter in: Innovations in Collaborative Modeling. MSU Press.

TALKS/PRESENTATIONS/POSTERS

*This section does not include presentations for conference/workshop papers.

- Yiqun Xie. Heterogeneity-Aware Learning in Space: Performance and Fairness. Keynote Talk at the ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities (ARIC 2022), Seattle, WA, US, Nov. 2022.

- Yiqun Xie. Harnessing Distribution Shift: When Machine Learning Meets Spatial Big Data. Keynote Talk at Seoul Big Data Forum, Seoul, South Korea. Nov. 2022.

- Yiqun Xie. Heterogeneity-Aware Learning in Space: Performance and Fairness. Seminar Talk at the Department of Computer Science, University of Maryland. Oct. 21, 2022.

- Yiqun Xie, Weiye Chen, Xiaowei Jia and Erhu He. Fairness-Aware Machine Learning in Space: Tackling Bias Related to Locations. Social Data Science (SoDa) Center Workshop, University of Maryland. Sep. 21, 2022.

- Yiqun Xie and Kara Stuart. Leave No One Behind: Spatial AI Enabled Settlement Mapping to Enhance WASH Access for Vulnerable Populations. Google AI for Social Good Mid-Program Workshop. Feb. 2022.

- Jia Yu, Yiqun Xie, Kyle A. Duncan and Sinead Louise Farrell. Apache Sedona in Action: Analyzing Large-scale Arctic Observations Using an Open-source Big Data Platform. AGU Fall Meeting 2021. New Orleans, LA. Dec. 2021.

- Yiqun Xie and Xiaowei Jia. Spatial-Net: A Statistically-Guided and Model-Agnostic Deep Learning Framework for Earth Observation with Spatially Heterogeneous Datasets. UMD/NASA Workshop on AI and Machine Learning in Earth Sciences. University of Maryland. Sep. 2021.

- Xiaowei Jia, Yiqun Xie, Sheng Li, Shengyu Chen, Jacob Zwart, Jeffrey Sadler, Alison Appling, Samantha Oliver and Jordan Read. Physics-Guided Machine Learning from Simulation Data: An Application in Modeling Lake and River Systems. UMD/NASA Workshop on AI and Machine Learning in Earth Sciences. University of Maryland. Sep. 2021.

- Yiqun Xie. Spatial Data Science: Challenges and New Techniques. Departmental Seminar. University of Maryland, College Park. Nov. 12, 2020.

- Yiqun Xie, Shashi Shekhar, Richard Feiock and Joseph Knight. Intelligent Spatial Technologies for Urban Tree Mapping. USDA-NIFA Next Generation Land-Use Change Methodology Project Workshop 2: Machine learning and data fusion for aerial imagery interpretation of land use change. Virtual via Zoom. June 10-11, 2020.
- Yiqun Xie and Shashi Shekhar. Spatial Computing. Inaugural meeting of the Center for Excellence in Remote Sensing (CERS), University of Minnesota, May 16, 2018.
- Yiqun Xie, Shashi Shekhar, Brent Dalzell, David Mulla. Fragmentation-Free Land Allocation: A Spatial Optimization Approach. Machine Learning: From Farm to Table Workshop, Midwest Big Data Hub, University of Illinois at Urbana-Champaign, Apr. 2017.
- Yiqun Xie. On the road with collaborative Geodesign. ESRI Developer Summit, Palm Springs, CA, Mar. 2014.

STUDENTS

- Weiye Chen, PhD student, 2021 – current
- Zhili Li, PhD student, 2022 (Spring) – current
- Zhihao Wang, PhD student, 2022 - current
- Xiaoyue Tian, MS student, 2022 (Spring) – current
- Anh Nhu, BS student, 2022 - current
- Evan Khym, High School student, Groton School, 2022 – current

SERVICES

Co-Chair

- ACM SIGSPATIAL Workshop on APIs and Libraries for Spatial Data Sci. (SpatialAPI), 2022, 2021.
- ACM SIGSPATIAL Workshop on Spatial Big Data and AI for Industrial Apps. (GeoIndustry), 2022

Session Chair

- SIAM International Conference on Data Mining, 2023
- AAAI Conference on Artificial Intelligence, 2023
- ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2022
- The 13th International Workshop on Spatial and Spatiotemporal Data Mining (SSTDM-18), IEEE International Conference on Data Mining 2018 (ICDM'18)

Senior Program Committee

- SIAM International Conference on Data Mining: 2023

Technical Program Committee (Conferences)

- AAAI Conference on Artificial Intelligence: 2023, 2022
- International Joint Conferences on Artificial Intelligence (IJCAI): 2023, 2022, 2021

- ACM SIGKDD Conference on Knowledge Discovery and Data Mining: 2022, 2021
- SIAM International Conference on Data Mining: 2022
- ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems: 2022, 2021, 2020

Technical Program Committee (Workshops)

- ACM SIGKDD DeepSpatial 2022, 2021
- ACM SIGSPATIAL GeoAI 2021
- ACM SIGSPATIAL SpatialEpi 2021, 2020 (formerly named COVID)
- ACM SIGKDD UrbComp 2020
- ACM SIGKDD FEED 2020

Journal/Special Issue Editors

- Guest Editor: Remote Sensing, Special Issue on "Advancing Machine Learning for Remote Sensing to Enhance Spatio-Temporal Generalizability"

Journal Reviewers

- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- ACM Transactions on Intelligent Systems and Technology (TIST)
- ACM/IMS Transactions on Data Science
- ACM Transactions on Spatial Algorithms and Systems (TSAS)
- Geoinformatica
- Remote Sensing of Environment
- International Journal of Geographical Information Science
- ISPRS International Journal of Geo-Information
- Frontiers in Big Data
- New Generation Computing
- Remote Sensing

Grant Proposal Reviewing

- National Science Foundation (NSF)
- NASA
- NSERC (Canada)

University Services

- Department merit review committee, 2023
- Department advisory committee, 2022-now
- Department graduate committee, 2021-2022
- Organizer, GIS Day Lightning Talk Session, CGIS, 2020
- Proposal/Thesis Committee: Yunting Song, Guimin Zhu, Ruohan Li, Yiming Zhang, Songhua Hu (Civil Eng.)
- PAC: Weiye Chen (Chair), Zhili Li (Chair), Peiqi Zhang, Yuehui Qian, Abdul Qadir, Yingrui Zhao, Liu Zhen, Caraballo V. Jordan