

## GIST Group Publications

### 2009 – 2017

2017

C. Brelsford, T. Martin, and L.M. Bettencourt, “Optimal reblocking as a practical tool for neighborhood development,” *Environment and Planning B: Urban Analytics and City Science*, 1–9 (June 2017). PUB ID 101549.

R. McManamay, S. Nair, C. DeRolph, B. Ruddell, A. Morton, R. Stewart, M. Troia, L. Tran, H. Kim and B. Bhaduri, “US cities can manage national hydrology and biodiversity using local infrastructure policy,” *Proceedings of the National Academy of Sciences*, 36, 9581 – 9586 (Sept. 2017). PUB ID # 73350.

C. Paris, D. Kelbe, J. V. Aardt and L. Bruzzone, “A Novel Automatic Method for the Fusion of ALS and TLS LiDar Data for Robust Assessment of Tree Crown Structure,” *IEEE Transactions on GeoScience and Remote Sensing*, 55(7), 3679 – 3693 (July 2017). PUB ID # 74986.

H. M. Aziz, S. V. Ukkusuri and X. Zhan, “Determining the impact of Personal Mobility Carbon Allowance Schemes in Transportation Networks,” *Networks and Spatial Economics*, 17(2), 505 – 545 (June 2017). PUB ID # 102046.

D. Rastogi, S. Kao, M. Ashfaq, R. Mei, E. D. Kabela, S. Gangrade, B. S. Naz, B. L. Preston, N. Singh and V. G. Ananthraj, “Effects of Climate Change on Probable Maximum Precipitation: A Sensitive Study Over the Alabama-Coosa-Tallapoosa River Basin,” *Journal of Geophysical Research*, 122(9), 4808 – 4828 (May 2017). PUB ID # 70516.

M. Coletti, C. Hultquist, W. G. Kennedy and G. Cervone, “Validating Safecast Data by Comparisons to a U.S. Department of Energy Fukushima Prefecture Aerial Survey,” *Journal of Environmental Radioactivity*, 171, 9 – 20 (May 2017). PUB ID 67998.

A. N. Rose and N. N. Nagle, “Validation of Spatiodemographic Estimates Produced Through Data Fusion of Small Area Census Records and Household Microdata,” *Computers, Environment and Urban Systems*, 64, 38 – 49 (May 2017). PUB ID # 59574.

M. R. Fialkoff, O. A. Omitaomu, S. K. Peterson and M. A. Tuttle, “Using Geographic Information Science to Evaluate Legal Restrictions on Freight Transportation Routing in Disruptive Scenarios,” *International Journal of Critical Infrastructure Protection*, 17, 60 – 74 (May 2017). PUB ID # 57992.

H. Mao, Y. Y. Ahn, B. L. Bhaduri and G. Thakur, “Improving Land Use Inference by Factorizing Mobile Phone Call Activity Matrix,” *Journal of Land Use Science*, 12 (2 – 3) 138 – 153 (Feb. 2017). PUB ID # 60626.

H. M. Aziz, N. N. Nagle, A. M. Morton, M. R. Hilliard, D. A. White, R. N. Stewart, “Exploring the Impact of Walk-Bike Infrastructure, Safety Perception, and Built-Environment on Active Transportation Mode Choice: A Random Parameter Model using New York City Commuter Data,” *Transportation*, 1 – 23 (Feb. 2017). PUB ID # 60422.

M. R. Fialkoff and O. A. Omitaomu, “The Jones Act and its Effect on Freight Transportation in the Aftermath of Disruptive Events,” *The Center for Infrastructure Protection Report*, 1 – 7 (Nov. 2016). PUB ID # 68113.

C. Till, J. Haverkamp, D. White and B. Bhaduri, “Understanding Climate-Induced Migration through Computational Modeling: A Critical Overview with Guidance for Future Efforts,” *Journal of Defense Modeling and Simulation*, 1 – 21 (Nov. 2016). PUB ID # 53945.

S. K. Peterson and M. R. Fialkoff, “Examining Supply Chain Resilience for the Intermodal Shipment of Spent Nuclear Fuel and High Level Radioactive Materials,” *WM Symposia Journal*, 2(1) (Oct. 2016). PUB ID 71196.

P. R. Chowdhury, S. H. Sutherland, K. M. Ernst, A. Pawlowski, E. H. Schmidt, J. R. Caspersen, Z. Zhao and B. L. Bhaduri, “Big Data in Emerging Cities,” L. A. Schintler, Z. Chen (Eds.), *Big Data for Regional Science*, pp. 277 – 2914, Routledge, New York. N.Y., 2018. PUB ID # 69476.

A. Morton, N. Nagle, J. Piburn, R. N. Stewart and R. McManamay, “A Hybrid Dasymetric and Machine Learning Approach to High-Resolution Residential Electricity Consumption Modeling,” D.A. Griffith, Y. Chun, D. J. Dean (Eds.), *Advances in Geocomputation*, pp. 47 – 58. Springer, Switzerland, 2017. PUB ID # 74615.

P. Nugent, O.A. Omitaomu, E.S. Parish, R. Mei, K. M. Earnst M. Absar and L. Sylvester, “A Web-Based Geographic Information Platform to Support Urban Adaptation to Climate Change,” D.A. Griffith, Y. Chun, D. J. Dean (Eds.), *Advances in Geocomputation*, pp. 371 – 381. Springer, Switzerland, 2017. PUB ID # 72901.

K. M. Sims, E. M. Weber, B. L. Bhaduri, G. S. Thakur and D. R. Ressegue, “Application of Social Media Data to High Resolution Mapping of a Special Event Population,” D.A. Griffith, Y. Chun, D. J. Dean (Eds.), *Advances in Geocomputation*, pp. 67 – 74. Springer, Switzerland, 2017. PUB ID # 54470.

A. Morton, J. Piburn, R. McManamay, N. Nagle and R. Stewart, “A Dasymetric-Based Monte Carlo Simulation Approach to the Probabilistic Analysis of Spatial Variables,” *International Conference on GIScience Short Paper Proceedings*, Sept. 2016, Montreal, Canada. PUB ID # 62873.

R. Stewart, C. Wilkerson, E. Ragan, M. Agreda and J. Piburn, “A 3D Virtual Environment for Spatio-Temporal Analysis: Theoretical Approach, Proof of Concept, and User Study,” *International Conference on GIScience Short Paper Proceedings*, Sept. 2016, Montreal, Canada. PUB ID # 62730.

R. Joseph III, A. Myers, J. Jarrell, J. Peterson-Droogh and K. Banerjee, “SNF Data Visualization on the Centralized Used Fuel Resource for Information Exchange (CURIE) Website,” *American Nuclear Society Annual Meeting*, June 2017, San Francisco, CA, PUB ID # 72005.

T. Rodriguez, O.A. Omitaomu, J. Ostrowski, and B. L. Bhaduri, “Modeling Road Vulnerability to Snow Using Mixed Integer Optimization,” *Proceedings of the 2017 Industrial and Systems Engineering Conference*, May 2017, Pittsburgh, PA. PUB ID # 73543.

H. Zandi, E. A. Vineyard, J. Sanyal, D. Fugate and T. Kuruganti, “Home Energy Management Retrofit Control Platform,” *IEA Heat Pump Conference*, May 2017, Rotterdam, Netherlands. PUB ID # 71622.

D. Koch, “An Internet of Things Approach to Electrical Power Monitoring and Outage Reporting,” *IEEE Southeast Conference*, March 2017, Charlotte, N.C., PUB ID #73129.

J. Yuan, H. L. Yang, O. A. Omitaomu and B. L. Bhaduri, “Large-Scale Solar Panel Mapping from Aerial Images Using Deep Convolutional Networks,” *IEEE International Conference on Big Data*, Dec. 2016, Washington, D.C. PUB ID # 68670.

A. Sorokine, R. Karthik, A. King and B. L. Bhaduri, “Big Data as a Service from an Urban Information System,” *5<sup>th</sup> ACM SIGSPATIAL Workshop on Analytics for Big Geospatial Data*, Nov. 2016, San Francisco, CA. PUB ID # 68271.

H. Mao, G. Thakur and B. L. Bhaduri, “Exploiting Mobile Phone Data for Multi-Category Land Use Classification in Africa,” *The Second International Name Workshop on Smart Cities and Urban Analytics*, Oct. 2016, San Francisco, CA. PUB ID 70290.

D. Koch, “A Multi-Agent Simulation Tool for Micro-Scale Contagion Spread Studies,” *IEEE Global Humanitarian Technology Conference*, Oct. 2016, Seattle, WA. PUB ID # 68945.

K. A. Sparks, R. G. Li, G. S. Thakur, R. N. Stewart and M. L. Urban, “Facility Detection and Popularity Assessment from Text Classification of Social Media and Crowdsourced Data,” *ACM SigSpatial Geographic Information Retrieval*, Oct. 2016, San Francisco, CA. PUB ID # 69241.

## 2016

A. Habib, W. Xiong, F. He, H. L. Yang, and M. Crawford, “Improving orthorectification of uav-based push-broom scanner imagery using derived orthophotos from frame cameras,” *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, pp. 1–15, 2016.

D. Kelbe, D. White, A. Hardin, J. Moehl, and M. Phillips, “Sensor-agnostic photogrammetric image registration with applications to population modeling,” in *International Geoscience and Remote Sensing Symposium (IGARSS)*, 2016.

D. Kelbe, J. van Aardt, P. Romanczyk, M. van Leeuwen, and K. Cawse-Nicholson, “Marker-free registration of forest terrestrial laser scanner data pairs with embedded confidence metrics,” *IEEE Transactions on Geoscience and Remote Sensing*, vol. 54, no. 7, pp. 4314–4330, 2016.

H. Mao, G. Thakur, and B. Bhaduri, “Exploiting mobile phone data for multi-category land use classification in Africa,” in *Proceedings of the Second International Workshop on Smart Cities and Urban Analytics*, Burlingame, CA, 2016.

A. Morton, J. Piburn, R. McManamay, N. Nagle, and R. N. Stewart, “A dasymetric-based Monte Carlo simulation approach to the probabilistic analysis of spatial variables,” in *Proceedings of GIScience 2016*, 2016.

K. Sparks, R. Li, G. Thakur, R. Stewart, and M. Urban, “Facility detection and popularity assessment from text classification of social media and crowdsourced data,” *To be Published in GIR '16 Proceedings of the 10th Workshop on Geographic Information Retrieval*, 2016.

R. Stewart *et al.*, “A Bayesian machine learning model for estimating building occupancy from open source data,” *Natural Hazards*, vol. 81, no. 3, pp. 1929–1956, 2016.

R. N. Stewart, C. Wilkerson, E. Ragan, M. Agreda, D. White, and J. Piburn, “A 3d virtual environment for spatio-temporal analysis: theoretical approach, proof of concept, and user study,” in *Proceedings of GIScience 2016*, 2016.

W. Yao, D. Kelbe, M. van Leeuwen, P. Romanczyk, and J. van Aardt, “Towards an improved lai collection protocol via simulated and field-based par sensing,” *Sensors*, vol. 16, no. 7, p. 1092, 2016.

J. Yuan and A. M. Cheriyadat, “Image feature based GPS trace filtering for road network generation and road segmentation,” *Machine Vision and Applications*, vol. 27, no. 1, pp. 1–12, 2016.

Z. Zhang, E. Pasolli, H. L. Yang, and M. M. Crawford, “Multimetric active learning for classification of remote sensing data,” *IEEE Geoscience and Remote Sensing Letters*, vol. 13, no. 7, pp. 1007–1011, Jul. 2016.

## 2015

W. Lu, C. Liu, N. Thomas, B. L. Bhaduri, and L. D. Han, “Global system for transportation simulation and visualization in emergency evacuation scenarios,” *Transportation Research Record: Journal of the Transportation Research Board*, no. 2529, pp. 46–55, 2015.

H. Mao, X. Shuai, Y.-Y. Ahn, and J. Bollen, “Quantifying socio-economic indicators in developing countries from mobile phone communication data: applications to Côte d’Ivoire,” *EPJ Data Science*, vol. 4, no. 1, pp. 1–16, 2015.

Y. Mejova, I. Weber, and M. W. Macy, *Twitter: a digital socioscope*. Cambridge University Press, 2015.

A. Morton, N. Nagle, J. Piburn, R. N. Stewart, and R. McManamay, “A hybrid dasymetric and machine learning approach to high-resolution residential electricity consumption modeling,” in *Proceedings of the 13th Geocomputation Conference*, 2015.

J. Piburn, R. Stewart, and A. Morton, “Attribute portfolio distance: A dynamic time warping based approach to comparing and detecting common spatiotemporal patterns among multi-attribute data portfolios,” in *Proceedings of the 13th Geocomputation Conference*, 2015.

J. Piburn and R. N. Stewart, “Using nonlinear data mining algorithms for finding and exploring spatiotemporal patterns,” in *Proceedings of the Conference on Complex Systems*, Tempe, Arizona, 2015.

M. Sethi, Y. Yan, A. Rangarajan, R. R. Vatsavai, and S. Ranka, “Scalable machine learning approaches for neighborhood classification using very high resolution remote sensing imagery,” in *Proceedings of the 21st ACM SIGSPATIAL International Conference on Knowledge Discovery and Data Mining (SIGKDD)*, 2015, pp. 2069–2078.

K. Sims, E. Weber, B. Bhaduri, G. Thakur, and D. Resseguie, “Application of social media data to high resolution mapping of a special event population,” in *Proceedings of the 13th Geocomputation Conference*, 2015.

R. N. Stewart, J. Piburn, A. Sorokine, A. Myers, and D. White, “World spatiotemporal analytics and mapping project (WSTAMP): Discovering, exploring, and mapping spatiotemporal patterns across the world’s largest open source geographic data sets,” in *Proceedings of the NSF First International Workshop on Spatiotemporal Computing*, Fairfax, Virginia, 2015.

R. Stewart *et al.*, “Can social media play a role in developing building occupancy curves for small area estimation?,” in *Proceedings of the 13th Geocomputation Conference*, 2015.

G. Thakur, P. Hui, and A. Helmy, “Evidence of long range dependence and self-similarity in urban traffic systems,” in *Proceedings of ACM SIGSPATIAL*, 2015.

G. S. Thakur, B. L. Bhaduri, J. O. Piburn, K. M. Sims, R. N. Stewart, and M. L Urban, “PlanetSense: A real-time streaming and spatio-temporal analytics platform for gathering geo-spatial intelligence from open source data,” in *Proceedings of ACM SIGSPATIAL*, 2015.

G. S. Thakur, B. L. Bhaduri, J. O. Piburn, K. M. Sims, R. N. Stewart, and M. L Urban, “PlanetSense: A real-time streaming and spatio-temporal analytics platform for gathering geo-spatial intelligence from open source data,” in *Proceedings of the 22nd ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, 2015.

R. R. Vatsavai, “A scalable complex pattern mining framework for global settlement mapping,” in *Proceedings of the 2015 IEEE International Congress on Big Data*, 2015, pp. 514–521.

J. Yuan, D. Wang, and A. M. Cheriyadat, “Factorization-based texture segmentation,” *IEEE Transactions on Image Processing*, vol. 24, no. 11, pp. 3488 – 3497, 2015.

2014

B. L. Bhaduri, D. R. Patlolla, R. R. Vatsavai, A. Cheriyadat, W. Lu, and R. Karthik, “Emerging trends in monitoring landscapes and energy infrastructures with big spatial data,” *SIGSPATIAL Special*, vol. 6, no. 3, pp. 35–45, 2014.

V. Chandola and R. R. Vatsavai, “BigSpatial-2013 workshop report: 2nd ACM SIGSPATIAL international workshop on analytics for big geospatial data (BigSpatial-2013),” *SIGSPATIAL Special*, vol. 6, no. 1, pp. 18–19, 2014.

A. M. Cheriyadat, “Unsupervised feature learning for aerial scene classification,” *IEEE Transactions on Geoscience and Remote Sensing*, vol. 52, no. 1, pp. 439–451, 2014.

P. R. Chowdhury and S. Maithani, “Modelling urban growth in the Indo-Gangetic plain using nighttime OLS data and cellular automata,” *International Journal of Applied Earth Observation and Geoinformation*, vol. 33, pp. 155–165, 2014.

S.-H. Lim, G. S. Thakur, and J. L. Horey, “Analyzing reliability of virtual machine instances with dynamic pricing in the public cloud,” in *Proceedings of the 2014 IEEE International Parallel & Distributed Processing Symposium Workshops (IPDPSW)*, 2014, pp. 885–893.

H. Mao, S. Counts, and J. Bollen, “Quantifying the effects of online bullishness on international financial markets,” in *Proceedings of ECB Workshop on Using Big Data for Forecasting and Statistics*, 2014.

M. M. Olama, G. Thakur, A. W. McNair, and S. R. Sukumar, “Predicting student success using analytics in course learning management systems,” in *Proceedings of the SPIE Sensing Technology+ Applications Conference*, 2014, p. 91220M–91220M.

M. Sethi, Y. Yan, A. Rangarajan, R. R. Vatsavaiy, and S. Ranka, “An efficient computational framework for labeling large scale spatiotemporal remote sensing datasets,” in *Proceedings of the Seventh International Conference on Contemporary Computing (IC3)*, 2014, pp. 635–640.

G. S. Thakur, M. M. Olama, A. W. McNair, S. R. Sukumar, and S. Studham, “Towards adaptive educational assessments: predicting student performance using temporal stability and data analytics in learning management systems,” in *Proceedings of the Data Mining for Educational Assessment and Feedback (KDD ASSESS) Conference*, 2014.

J. Yuan and A. M. Cheriyadat, “Learning to count buildings in diverse aerial scenes,” in *Proceedings of the 22nd ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, 2014, pp. 271–280.

2013

V. Chandola and R. R. Vatsavai, “BigSpatial-2013 workshop report: 2nd ACM SIGSPATIAL international workshop on analytics for big geospatial data (BigSpatial-2013),” *SIGSPATIAL Special*, vol. 6, no. 1, pp. 18–19, 2014.

D. Fay, G. S. Thakur, P. Hui, and A. Helmy, “Knowledge discovery and causality in urban city traffic: a study using planet scale vehicular imagery data,” in *Proceedings of the Sixth ACM SIGSPATIAL International Workshop on Computational Transportation Science*, 2013, p. 67.

H. Mao, X. Shuai, Y.-Y. Ahn, and J. Bollen, “Mobile communications reveal the regional economy in Cote d’Ivoire,” *Proceedings of the NetMob Conference*, 2013.

K. G. Pillai and R. R. Vatsavai, “Multi-sensor remote sensing image change detection: an evaluation of similarity measures,” in *Proceedings of the 13th IEEE International Conference on Data Mining Workshops (ICDM)*, 2013, pp. 1053–1060.

H. Sridharan and A. Cheriyadat, “Multi-level feature analysis for semantic category recognition,” in *Proceedings of the 2013 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2013, pp. 4371–4374.

R. Stewart, D. White, M. Urban, A. Morton, C. Webster, M. Stoyanov, E. Bright, and B. L. Bhaduri, “Uncertainty quantification techniques for population density estimates derived from sparse open source data,” in *Proceedings of the SPIE Defense, Security, and Sensing Conference*, 2013, pp. 874705–874705.

G. S. Thakur and A. Helmy, “COBRA: A framework for the analysis of realistic mobility models,” in *2013 Proceedings of the IEEE International Conference on Computer Communications (INFOCOM)*, 2013, pp. 3351–3356.

G. S. Thakur, P. Hui, and A. Helmy, “Data-driven study of urban infrastructure to enable city-wide ubiquitous computing,” in *Proceedings of the 2nd International Workshop on Big Data, Streams and Heterogeneous Source Mining: Algorithms, Systems, Programming Models and Applications*, 2013, pp. 71–78.

G. S. Thakur, P. Hui, and A. Helmy, “On the existence of self-similarity in large-scale vehicular networks,” in *Proceedings of the 2013 9th International Wireless Communications and Mobile Computing Conference (IWCMC)*, 2013, pp. 1756–1761.

G. S. Thakur, P. Hui, and A. Helmy, “The structure and traffic flow anatomy of the planet-scale urban vehicular mobility,” *Networking Science*, vol. 3, no. 1–4, pp. 13–23, 2013.

R. R. Vatsavai, “Gaussian multiple instance learning approach for mapping the slums of the world using very high resolution imagery,” in *Proceedings of the 19th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2013, pp. 1419–1426.

R. R. Vatsavai, “Object based image classification: State of the art and computational challenges,” in *Proceedings of the 2nd ACM SIGSPATIAL International Workshop on Analytics for Big Geospatial Data*, 2013, pp. 73–80.

J. Yuan and A. M. Cheriyadat, “Road segmentation in aerial images by exploiting road vector data,” in *Proceedings of the 2013 Fourth International Conference on Computing for Geospatial Research and Application (COM. Geo)*, 2013, pp. 16–23.

J. Yuan, S. S. Gleason, and A. M. Cheriyadat, “Systematic benchmarking of aerial image segmentation,” *IEEE Geoscience and Remote Sensing Letters*, vol. 10, no. 6, pp. 1527–1531, 2013.

K.-P. Ziock, E. C. Bradley, A. Cheriyadat, M. Cunningham, L. Fabris, C. Fitzgerald, J. Goddard, D. E. Hornback, R. A. Kerekes, T. P. Karnowski, W. T. Marchant, and J. Newby, “Performance of the roadside tracker portal-less portal monitor,” *IEEE Transactions on Nuclear Science*, vol. 60, no. 3, pp. 2237–2246, 2013.

2012

A. Cheriyadat, “Aerial scene recognition using efficient sparse representation,” in *Proceedings of the Eighth Indian Conference on Computer Vision, Graphics and Image Processing*, 2012, p. 11.

J. Graesser, A. Cheriyadat, R. R. Vatsavai, V. Chandola, J. Long, and E. Bright, “Image based characterization of formal and informal neighborhoods in an urban landscape,” *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol. 5, no. 4, pp. 1164–1176, 2012.

D. R. Patlolla, E. A. Bright, J. E. Weaver, and A. M. Cheriyadat, “Accelerating satellite image based large-scale settlement detection with GPU,” in *Proceedings of the 1st ACM SIGSPATIAL International Workshop on Analytics for Big Geospatial Data*, 2012, pp. 43–51.

P. K. Roy Chowdhury, S. Maithani, and V. K. Dadhwal, “Estimation of urban population in Indo-Gangetic Plains using night-time OLS data,” *International Journal of Remote Sensing*, vol. 33, no. 8, pp. 2498–2515, 2012.

C. T. Symons, R. R. Vatsavai, G. Jun, and I. Arel, “Bias selection using task-targeted random subspaces for robust application of graph-based semi-supervised learning,” in *Proceedings of the 11th International Conference on Machine Learning and Applications*, 2012, pp. 415–420.

G. S. Thakur, P. Hui, and A. Helmy, “A framework for realistic vehicular network modeling using planet-scale public webcams,” in *Proceedings of the 4th ACM international workshop on Hot topics in planet-scale measurement*, 2012, pp. 3–8.

G. S. Thakur, P. Hui, and A. Helmy, “Modeling and characterization of urban vehicular mobility using web cameras,” in *Proceedings of the 2012 IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS)*, 2012, pp. 262–267.

G. S. Thakur, U. Kumar, W. Hsu, and A. Helmy, “Gauging human mobility characteristics and its impact on mobile routing performance,” *International Journal of Sensor Networks*, vol. 11, no. 3, pp. 179–191, 2012.

R. R. Vatsavai and J. Graesser, “Probabilistic change detection framework for analyzing settlement dynamics using very high-resolution satellite imagery,” in *Proceedings of the International Conference on Computational Science, (ICCS) 2012*, 2012, pp. 907–916.

R. R. Vatsavai, “A data mining framework for monitoring nuclear facilities,” in *Proceedings of the 12th IEEE International Conference on Data Mining Workshops (ICDM)*, 2012, p. 917.

R. R. Vatsavai, “A machine learning system for recognizing subclasses,” in *Proceedings of the 3rd International Conference on Computing for Geospatial Research and Application*, 2012, p. 32.

R. R. Vatsavai, “Modeling spatial dependencies and semantic concepts in data mining,” in *Proceedings of the 3rd International Conference on Computing for Geospatial Research and Application*, 2012, p. 46.

R. R. Vatsavai, “Rapid damage eXplorer (RDX): A probabilistic framework for learning changes from bitemporal images,” in *Proceedings of the 12th IEEE International Conference on Data Mining Workshops (ICDM)*, 2012, pp. 906–909.

R. R. Vatsavai, “Scalable multi-instance learning approach for mapping the slums of the world,” in *Proceedings of the 2012 SC Companion: High Performance Computing, Networking Storage and Analysis*, 2012, pp. 833–837.

S. Wang, A. Padmanabhan, N. Wilkins-Diehr, X. Shi, and R. R. Vatsavai, “Highlights on ACM HPDGIS 2011: The Second International ACM SIGSPATIAL Workshop on high performance and distributed geographic information systems (HPDGIS),” *SIGSPATIAL Special*, vol. 4, no. 1, pp. 6–7, 2012.

2011

J. Bollen, H. Mao, and X. Zeng, “Twitter mood predicts the stock market,” *Journal of Computational Science*, vol. 2, no. 1, pp. 1–8, 2011.

J. Bollen, A. Pepe, and H. Mao, “Modeling public mood and emotion: Twitter sentiment and socio-economic phenomena,” in *Proceedings of the International AAAI Conference on Web and Social Media (ICWSM-16)*, Barcelona, Spain, 2011.

V. Chandola, R. R. Vatsavai, and B. L. Bhaduri, “iGlobe: An interactive visualization and analysis framework for geospatial data,” in *Proceedings of the 2nd International Conference and Exhibition on Computing for Geospatial Research & Application*, 2011, pp. 21:1–21:6.

V. Chandola and R. R. Vatsavai, “A gaussian process based online change detection algorithm for monitoring periodic time series,” in *Proceedings of the Eleventh SIAM International Conference on Data Mining (SDM)*, 2011, pp. 95–106.

V. Chandola and R. R. Vatsavai, “A scalable gaussian process analysis algorithm for biomass monitoring,” *Statistical Analysis and Data Mining*, vol. 4, no. 4, pp. 430–445, 2011.

A. M. Cheriyadat, “Learning scene categories from high resolution satellite image for aerial video analysis,” in *Proceedings of the 2011 IEEE Computer Society Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*, 2011, pp. 45–52.

S. S. Gleason, M. Dema, H. Sari-Sarraf, A. Cheriyadat, R. Vatsavai, and R. Ferrell, “Verification & validation of a semantic image tagging framework via generation of geospatial imagery ground truth,” in *Proceedings of the 2011 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2011, pp. 1577–1580.

S. S. Gleason, M. Dema, H. Sari-Sarraf, A. Cheriyadat, R. R. Vatsavai, and R. Ferrell, “Verification & validation of a semantic image tagging framework via generation of geospatial imagery ground truth,” in *Proceedings of the 2011 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2011, pp. 1577–1580.

F. M. Hoffman, J. W. Larson, R. T. Mills, B.-G. J. Brooks, A. R. Ganguly, W. W. Hargrove, J. Huang, J. Kumar, and R. R. Vatsavai, “Data mining in earth system science (DMESS),” in *Proceedings of the International Conference on Computational Science, (ICCS)*, 2011, pp. 1450–1455.

U. Kumar, G. Thakur, and A. Helmy, “Proximity based trust-advisor using encounters for mobile societies,” *Mobile Computing and Communications Review Journal*, vol. 11, no. 12, 2011.

H. Mao, S. Counts, and J. Bollen, “Computational economic and finance gauges: Polls, search, and twitter,” in *Proceedings of the Meeting of the National Bureau of Economic Research-Behavioral Finance*, 2011, vol. 11, p. 2011.

H. Mao, X. Shuai, and A. Kapadia, “Loose tweets: An analysis of privacy leaks on twitter,” in *Proceedings of the 10th annual ACM workshop on Privacy in the electronic society*, 2011, pp. 1–12.

P. MARKET, “Twitter mood as a stock market predictor,” *IEEE Computer*, vol. 44, no. 10, pp. 91–94, 2011.

R. S. Roberts, P. Pope, R. R. Vatsavai, M. Jiang, L. F. Arrowood, T. G. Trucano, S. Gleason, A. Cheriyadat, A. Sorokine, A. K. Katsaggelos, T. N. Pappas, L. R. Gaines, and L. K. Chilton,

“Design of benchmark imagery for validating facility annotation algorithms,” in *Proceedings of the 2011 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2011, pp. 1453–1456.

R. S. Roberts, P. A. Pope, R. R. Vatsavai, M. Jiang, L. F. Arrowood, T. G. Trucano, S. S. Gleason, A. Cheriyadat, A. Sorokine, A. K. Katsaggelos, T. N. Pappas, L. R. Gaines, and L. K. Chilton, “Design of benchmark imagery for validating facility annotation algorithms,” in *Proceedings of the 2011 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2011, pp. 1453–1456.

R. N. Stewart and S. T. Purucker, “An environmental decision support system for spatial assessment and selective remediation,” *Environmental Modelling & Software*, vol. 26, no. 6, pp. 751–760, 2011.

G. S. Thakur, P. Hui, H. Katabdar, and A. Helmy, “Spatial and temporal analysis of planet scale vehicular imagery data,” in *Proceedings of the 2011 IEEE 11th International Conference on Data Mining Workshops (ICDMW)*, 2011, pp. 905–910.

G. S. Thakur, U. Kumar, A. Helmy, and W.-J. Hsu, “On the efficacy of mobility modeling for dtm evaluation: Analysis of encounter statistics and spatio-temporal preferences,” in *Proceedings of the 2011 7th International Wireless Communications and Mobile Computing Conference (IWCMC)*, 2011, pp. 510–515.

R. R. Vatsavai and B. L. Bhaduri, “A hybrid classification scheme for mining multisource geospatial data,” *GeoInformatica*, vol. 15, no. 1, pp. 29–47, 2011.

R. R. Vatsavai, E. A. Bright, V. Chandola, B. L. Bhaduri, A. Cheriyadat, and J. Graesser, “Machine learning approaches for high-resolution urban land cover classification: a comparative study,” in *Proceedings of the 2nd International Conference and Exhibition on Computing for Geospatial Research & Application*, 2011, pp. 11:1–11:10.

R. R. Vatsavai, C. T. Symons, V. Chandola, and G. Jun, “GX-Means: A model-based divide and merge algorithm for geospatial image clustering,” in *Proceedings of the International Conference on Computational Science (ICCS)*, 2011, pp. 186–195.

[22]

R. R. Vatsavai, M. Tuttle, B. L. Bhaduri, E. Bright, A. Cheriyadat, V. Chandola, and J. Graesser, “Rapid damage assessment using high-resolution remote sensing imagery: Tools and techniques,” in *Proceedings of the 2011 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2011, pp. 1445–1448.

[23]

R. R. Vatsavai, “High-resolution urban image classification using extended features,” in *Proceedings of the IEEE 11th International Conference on Data Mining Workshops (ICDMW)*, 2011, pp. 869–876.

[24]

S. Wang, A. Padmanabhan, N. Wilkins-Diehr, X. Shi, and R. R. Vatsavai, “Highlights on ACM HPDGIS 2011: The Second International ACM SIGSPATIAL Workshop on high performance

and distributed geographic information systems (HPDGIS)," *SIGSPATIAL Special*, vol. 4, no. 1, pp. 6–7, 2012.

[25]

S. Wang, N. Wilkins-Diehr, A. Padmanabhan, X. Shi, R. R. Vatsavai, and J. Zhang, "HPDGIS 2010 workshop report: ACM SIGSPATIAL international workshop on high performance and distributed geographic information systems," *SIGSPATIAL Special*, vol. 3, no. 1, pp. 8–9, 2011.

[26]

K.-P. Ziock, A. Cheriyyadat, L. Fabris, J. Goddard, D. Hornback, T. Karnowski, R. Kerekes, and J. Newby, "Autonomous radiation monitoring of small vessels," *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, vol. 652, no. 1, pp. 10–15, 2011.

2010

V. Chandola, D. Hui, L. Gu, B. L. Bhaduri, and R. R. Vatsavai, "Using time series segmentation for deriving vegetation phenology indices from MODIS NDVI data," in *Proceedings of the 10th IEEE International Conference on Data Mining Workshops (ICDMW)*, 2010, pp. 202–208.

V. Chandola, O. A. Omitaomu, A. R. Ganguly, R. R. Vatsavai, N. V. Chawla, J. Gama, and M. M. Gaber, "Knowledge discovery from sensor data (SensorKDD)," *SIGKDD Explorations*, vol. 12, no. 2, pp. 50–53, 2010.

V. Chandola and R. R. Vatsavai, "Multi-temporal remote sensing image classification - A multi-view approach," in *Proceedings of the 2010 Conference on Intelligent Data Understanding, (CIDU)*, 2010, pp. 258–270.

V. Chandola and R. R. Vatsavai, "Scalable time series change detection for biomass monitoring using gaussian process," in *Proceedings of the 2010 Conference on Intelligent Data Understanding, (CIDU)*, 2010, pp. 69–82.

A. M. Cheriyyadat, R. Vatsavai, and E. Bright, "Modeling spatial dependencies in high-resolution overhead imagery," in *Proceedings of the 2010 IEEE 39th Applied Imagery Pattern Recognition Workshop (AIPR)*, 2010, pp. 1–5.

P. R. Chowdhury and S. Maithani, "Monitoring growth of built-up areas in Indo-Gangetic plain using multi-sensor remote sensing data," *Journal of the Indian Society of Remote Sensing*, vol. 38, no. 2, pp. 291–300, 2010.

S. Gleason, R. Ferrell, A. Cheriyyadat, R. Vatsavai, and S. De, "Semantic information extraction from multispectral geospatial imagery via a flexible framework," in *Proceedings of the 2010 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2010, pp. 166–169.

S. S. Gleason, R. Ferrell, A. Cheriyyadat, R. R. Vatsavai, and S. De, "Semantic information extraction from multispectral geospatial imagery via a flexible framework," in *Proceedings of the IEEE International Geoscience & Remote Sensing Symposium (IGARSS)*, 2010, pp. 166–169.

T. P. Karnowski, M. F. Cunningham, J. S. Goddard, A. M. Cheriyadat, D. E. Hornback, L. Fabris, R. A. Kerekes, K.-P. Ziock, E. C. Bradley, J. Chesser, and W. Marchant, “Design of dual-road transportable portal monitoring system for visible light and gamma-ray imaging,” in *Proceedings of the SPIE Defense, Security, and Sensing Conference*, 2010, p. 76651J–76651J.

T. P. Karnowski, M. F. Cunningham, A. Cheriyadat, D. E. Hornback, R. A. Kerekes, L. Fabris, K.-P. Ziock, T. F. Gee, and J. S. Goddard Jr, “Motion estimation accuracy for visible light gamma ray fusion,” in *Proceedings of the SPIE Electronic Imaging - Image Processing: Machine Vision Applications III Conference*, 2010.

U. Kumar, G. Thakur, and A. Helmy, “Protect: Proximity-based trust-advisor using encounters for mobile societies,” in *Proceedings of the 6th International Wireless Communications and Mobile Computing Conference*, 2010, pp. 636–645.

R. Tetrault, B. Doorn, A. Goss Eng, A. Philp, B. L. Bhaduri, and R. R. Vatsavai, “Emerging geospatial science and technology for sustainable bioenergy,” in *Proceedings of the 1st International Conference and Exhibition on Computing for Geospatial Research & Application*, 2010.

G. S. Thakur, A. Helmy, and W.-J. Hsu, “Similarity analysis and modeling in mobile societies: The missing link,” in *Proceedings of the 5th ACM workshop on Challenged networks*, 2010, pp. 13–20.

G. S. Thakur, M. Sharma, and A. Helmy, “Shield: Social sensing and help in emergency using mobile devices,” in *Proceedings of the 2010 IEEE Global Telecommunications Conference (GLOBECOM 2010)*, 2010, pp. 1–5.

R. R. Vatsavai, B. Bhaduri, A. Cheriyadat, L. Arrowood, E. Bright, S. Gleason, C. Diegert, A. Katsaggelos, T. Pappas, R. Porter, J. Bollinger, B. Chen, and R. Hohimer, “Geospatial image mining for nuclear proliferation detection: Challenges and new opportunities,” in *Proceedings of the 2010 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2010, pp. 48–51.

R. R. Vatsavai, B. L. Bhaduri, A. Cheriyadat, L. F. Arrowood, E. A. Bright, S. S. Gleason, C. Diegert, A. K. Katsaggelos, T. Pappas, R. Porter, J. Bollinger, B. Chen, and R. Hohimer, “Geospatial image mining for nuclear proliferation detection: Challenges and new opportunities,” in *Proceedings of the IEEE International Geoscience & Remote Sensing Symposium (IGARSS)*, 2010, pp. 48–51.

R. R. Vatsavai, A. Cheriyadat, and S. Gleason, “Unsupervised semantic labeling framework for identification of complex facilities in high-resolution remote sensing images,” in *Proceedings of the 2010 IEEE International Conference on Data Mining Workshops (ICDMW)*, 2010, pp. 273–280.

S. Wang, N. Wilkins-Diehr, A. Padmanabhan, X. Shi, R. R. Vatsavai, and J. Zhang, “HPGIS 2010 workshop report: ACM SIGSPATIAL international workshop on high performance and distributed geographic information systems,” *SIGSPATIAL Special*, vol. 3, no. 1, pp. 8–9, 2011.

2009

A. M. Cheriyadat and R. J. Radke, “Non-negative matrix factorization of partial track data for motion segmentation,” in *Proceedings of the 2009 IEEE 12th International Conference on Computer Vision*, 2009, pp. 865–872.

J. Gama, A. R. Ganguly, O. A. Omitaomu, R. R. Vatsavai, and M. M. Gaber, “Knowledge discovery from data streams,” *Intelligent Data Analysis*, vol. 13, no. 3, pp. 403–404, 2009.

G. Jun, R. R. Vatsavai, and J. Ghosh, “Spatially adaptive classification and active learning of multispectral data with gaussian processes,” in *Proceedings of the IEEE International Conference on Data Mining Workshops*, 2009, pp. 597–603.

M. Mahmoud, Y. Liu, H. Hartmann, S. Stewart, T. Wagener, D. Semmens, R. Stewart, H. Gupta, D. Dominguez, F. Dominguez, D. Hulse, R. Letcher, B. Rashleigh, C. Smith, R. Street, J. Ticehurst, Delden H., R. Walldick, White D., and L. Winter, “A formal framework for scenario development in support of environmental decision-making,” *Environmental Modelling & Software*, vol. 24, no. 7, pp. 798–808, 2009.

H. Mao, X.-J. Zeng, G. Leng, Y.-J. Zhai, and J. Keane, “Short-term and midterm load forecasting using a bilevel optimization model,” *IEEE Transactions on Power Systems*, vol. 24, no. 2, pp. 1080–1090, 2009.

O. A. Omitaomu, R. R. Vatsavai, A. R. Ganguly, N. V. Chawla, J. Gama, and M. M. Gaber, “Knowledge discovery from sensor data (SensorKDD),” *SIGKDD Explorations*, vol. 11, no. 2, pp. 84–87, 2009.

G. S. Thakur, R. Tiwari, M. T. Thai, S.-S. Chen, and A. Dress, “Detection of local community structures in complex dynamic networks with random walks,” *Systems Biology, IET*, vol. 3, no. 4, pp. 266–278, 2009.

R. R. Vatsavai, “BioMon: a Google Earth based continuous biomass monitoring system,” in *Proceedings of the 17th ACM SIGSPATIAL International Symposium on Advances in Geographic Information Systems (ACM-GIS)*, 2009, pp. 536–537.

R. R. Vatsavai, “Incremental clustering algorithm for earth science data mining,” in *Proceedings of the 9th International Conference on Computational Science (ICCS)*, 2009, pp. 375–384.

R. R. Vatsavai, “Phenological event detection from multitemporal image data,” in *Proceedings of the Third International Workshop on Knowledge Discovery from Sensor Data*, 2009, pp. 49–55.