Femi Omitaomu, Ph.D. (He/Him/His)

CONTACT INFORMATION

Group Leader and Distinguished Scientist
Computational Sciences and Engineering
Oak Ridge National Laboratory
Oak Ridge, Tennessee, U.S.A.
Email: omitaomuoa@ornl.gov

Adjunct Professor
Industrial & Systems Engineering
University of Tennessee
Knoxville, Tennessee, U.S.A.
Office: +1.865.241.4310

WEB PRESENCE

Personal Website – Google Scholar – Linkedln – ResearchGate – ORCID

PROFILE

Synopsis of Credentials:

- 18 years of post-Ph.D. R&D experience with:
  - 1 R&D 100 Award Winner in 2021
  - 2 issued patents in 2020 and 2016
  - 1 R&D 100 Award Finalist in 2015
  - 6 Invention Disclosures, 3 Certificates of Registration, 1 Copyright Certificate, and 2 Licenses.
- Principal Investigator or Lead Performer for more than $20M funding awards from diverse agencies.
- Recognized PI for several major DOE technologies including OR-SAGE, Precision Deicer, CoNNECT, Visual-SOLAR, and Urban-CAT.
- Serve as an international technical expert on reactors siting to the Department of State's FIRST (Foundational Infrastructure for Responsible Use of Small Modular Reactor Technology) program in Indonesia, Thailand, and Kenya.
- Over 160 peer-reviewed publications in journals, conferences, book chapters, and technical reports (plus 7 Books) with more than 2600 citations, h-index of 22, and i10-index of 45.
- Successfully led, for 3 years, a research team of over 10 members (staff and contractors) that delivered novel solutions for DOE, DOD, DHS, and FEMA.
- Mentored more than 30 students and early-career staff in the areas of disaster risk analysis, infrastructure siting, and anomaly detection in complex systems.
- Expertise in modeling and simulation-driven technology for energy infrastructure systems, disaster risk analysis, and emergency management.
- Expertise in artificial intelligence and machine learning with applications in energy systems and medical informatics.

RESEARCH EXPERTISE

Focus Areas:

- Artificial Intelligence in Energy Infrastructure Systems
- Anomaly Detection in Complex Systems
- Energy Infrastructure Siting and Analysis
- Disaster Risk Analysis and Emergency Management

Computing Skills:

- Expertise in various simulation engines such as UrbanSim, AnyLogic, risk analysis, and spatial science

- Expertise in energy infrastructure siting, optimization, and analysis
- Expertise in graph analytics and AI/ML techniques including higher-order network dependencies modeling
- Experience with high-performance computing applications for large-scale simulation

Education

University of Tennessee, Knoxville, Knoxville, TN
Ph.D., Information Engineering, May 2006
Thesis Topic: *Online Learning and Wavelet-Based Feature Extraction Methodology for Process Monitoring using High-dimensional Functional Data*
Adviser: Professor Adedeji B. Badiru (now at AFIT)
Co-adviser: Professor Myong K. Jeong (now at Rutgers)
Won the Outstanding Ph.D. Student Award

University of Lagos, Akoka, Lagos, Nigeria
M.Sc., Mechanical Engineering, September 1999
Thesis Topic: *Mathematical Modeling of Temperature Distribution within the Wall Thickness of a Gas Turbine Combustion Chamber*

Lagos State University, Ojo, Lagos, Nigeria
B.Sc., Mechanical Engineering, December 1995
Thesis Topic: *Modification & Data Gathering of the Performance of Hovercraft*
Won five Best Graduate Awards at the Department and College Levels

Professional Experience

Oak Ridge National Laboratory **October 2022 to Present**
Group Leader, Computational Urban Sciences Group
Advanced Computing for Engineering Systems Section
Computational Sciences and Engineering Division

Oak Ridge National Laboratory **April 2024 to Present**
Distinguished R&D Staff, Computational Urban Sciences Group
Advanced Computing for Engineering Systems Section
Computational Sciences and Engineering Division

Oak Ridge National Laboratory **October 2022 to March 2024**
Senior R&D Staff, Computational Urban Sciences Group
Advanced Computing for Engineering Systems Section
Computational Sciences and Engineering Division

Oak Ridge National Laboratory **April 2022 to September 2022**
Interim Group Leader, Computational Urban Sciences Group
Advanced Computing for Engineering Systems Section
Computational Sciences and Engineering Division

Oak Ridge National Laboratory **April 2018 to September 2022**
Senior R&D Staff, Computational Systems Engineering & Cybernetics Group
Advanced Computing for Engineering Systems Section
Computational Sciences and Engineering Division

University of Tennessee, Knoxville **February 2021 to Present**
Adjunct Professor, Systems Engineering
Department of Industrial and Systems Engineering

University of Tennessee, Knoxville **October 2014 to Present**
Adjunct Associate Professor, Climate Change Impacts Analysis
Department of Civil and Environmental Engineering

University of Tennessee, Knoxville **October 2014 to December 2020**
Joint ORNL-UT Associate Professor, Systems Engineering
Department of Industrial and Systems Engineering

Oak Ridge National Laboratory **January 2012 to March 2018**
R&D Staff, Infrastructure Systems Modeling and Analysis
Computational Sciences and Engineering Division

Oak Ridge National Laboratory **October 2015 to September 2018**
Team Lead, Critical Infrastructure and Climate Impacts
Computational Sciences and Engineering Division

Oak Ridge National Laboratory **October 2015 to September 2018**
Theme Lead, Urban Resiliency
Urban Dynamics Institute

University of Tennessee, Knoxville **November 2009 to September 2015**
Adjunct Faculty, Climate Change Impacts Analysis
Department of Industrial and Systems Engineering

Oak Ridge National Laboratory **July 2009 to December 2011**
R&D Associate, Energy Systems Modeling and Analysis
Computational Sciences and Engineering Division

Oak Ridge National Laboratory **October 2006 to July 2009**
Postdoctoral Research Associate, Knowledge Discovery from Sensors Data
Computational Sciences and Engineering Division

McMaster University **February 2006 to September 2006**
Postdoctoral Research Fellow, Optimization in Data Mining
Department of Computing & Software

Mobil Producing Nigeria **June 1995 to December 2000**
Engineer, Bonny Island Liquefied Natural Gas Plant Project
Exploration & Production Department

Grant Supports

ARPA-E (INTERMODAL): $500,000
Title: A Cognitive Freight Transportation Digital Twin for Resiliency and Emission Control through Optimizing Intermodal Logistics (RECOIL)
Role: Principal Investigator
Duration: January 2024 to May 2026

Department of Veterans Affairs: $2,500,000
Title: Hazard Detection in Health Information Technology
Role: Principal Investigator
Duration: October 2023 to September 2025

Department of Energy - Office of Nuclear Energy 9GAIN Program): $200,000
Title: OR-SAGE for Coal-to-Nuclear Analysis
Role: Principal Investigator

Duration: January 2024 to May 2026

Department of Energy - Office of Nuclear Energy: $1,200,000
Title: Development of LITE Tool
Role: Principal Investigator
Duration: October 2022 to September 2024

Department of Veterans Affairs: $1,200,000
Title: Hazard Detection in Health Information Technology
Role: Principal Investigator
Duration: October 2021 to September 2022

Department of Energy - Office of Nuclear Energy: $520,000
Title: Consent-Based Siting
Role: Principal Investigator
Duration: October 2021 to October 2022

Department of Energy - National Reactor Innovation Center (NRIC): $115,000 for 1 year
Title: OR-SAGE for Selecting Advanced Reactors Demonstration Sites
Role: ORNL Co-Investigator
Duration: June 2020 to September 2020

ARPA-E - MEITNER Program: $200,000 for 2 year
Title: Siting Tool Development
Role: ORNL Co-Investigator
Duration: March 2020 to September 2021

Department of Energy - Fuel Cycle Options: $350,000 for 2 years
Title: Development of the ORACLE Tool
Role: Task Lead
Duration: March 2019 to September 2020

Department of Veterans Affairs: $5,900,000 per year for 4 years
Title: Hazard Detection in Health Information Technology
Role: Task Lead
Duration: October 2017 to March 2021

Department of Energy: $110,000 for 1 year
Title: Siting Reserve Power
Role: Principal Investigator
Duration: October 2017 to September 2018

Department of Energy: $524,000 for 2 years
Title: Cognitive Energy Management System
Role: Principal Investigator
Duration: October 2016 to September 2018

National Geospatial-Intelligence Agency: $328,561 for 1 year
Title: Energy Assurance and Resiliency Standardized Services (EARSS)
Role: Co-Investigator
Duration: October 2016 to September 2017

Laboratory SEED Program: $187,135 for 2 years

Title: Precision Deicing Analysis
Role: Principal Investigator
Duration: October 2016 to September 2018

National Science Foundation: $435,421 for 6 years
Title: Optimizing Green Infrastructure Investment to Improve Urban Storm Water System Resilience under Environmental Uncertainty (Award #: 1634975)
Role: Senior Personnel
Duration: August 2016 to July 2022

Laboratory Directed Research & Development: $610,787 for 2 years
Title: Framework for Urban Climate Adaptation Tool (Urban-CAT)
Role: Principal Investigator
Duration: October 2015 to September 2017

Department of Energy: $49,000 for 1 year
Title: Solar Deployment Analytics
Role: Co-Investigator
Duration: October 2016 to September 2017

University of Tennessee: $26,440 for 1 year
Title: EARSS for Real-Time Deployment
Role: Co-Investigator
Duration: January 2017 to September 2017

LDRD Launch Program: $49,907 for 1 year
Title: CoNNECT for Real-Time Analytics
Role: Principal Investigator
Duration: October 2013 to September 2014

National Rural Electric Cooperative Association: $23,630 for 1 year
Title: Open Framework for Grid Network
Role: Co-Investigator
Duration: January 2013 to December 2013

Department of Energy: $1,250,000 for 5 years
Title: OR-SAGE for Analyzing DOE and DOD Sites
Role: Task Lead
Duration: October 2010 to September 2015

Laboratory Directed Research & Development: $328,871 for 2 years
Title: Citizens Engagement for Energy Efficient Communities (CoNNECT)
Role: Principal Investigator
Duration: October 2011 to September 2013

Electric Power Research Institute: $750,000 for 2 years
Title: Development of Oak Ridge Siting Analysis for power Generation Expansion (OR-SAGE)
Role: Task Lead
Duration: October 2008 to September 2010

Issued Patents

Authors: Olufemi A. Omitaomu and Budhendra L. Bhaduri
Title: Precision Snow Removal Analysis
US Patent #: 10,643,156 B2

Issued Date: May 5, 2020

Authors: Olufemi A. Omitaomu and Steven J. Fernandez
Title: Method for Estimating Power Outages and Restoration during Natural and Man-made Events
US Patent #: 9,230,289 B2
Issued Date: January 5, 2016

Certificates of Registration

Certificate #: TXu 2-001-550: Visual-SOLAR: Modeling and Visualization of Solar Potential on Individual Building Rooftops - **September 2015**

Certificate #: TX 7-699-427: CoNNECT: Citizen Engagement for Energy Efficient Communities - **March 2013**

Certificate #: TXu 1-852-650: GAEDA: GPU Accelerated Event Detection Algorithm Software - **February 2013**

Copyright

UT-Battelle Case # 500000014: VERDE Analytic Modules

Invention Disclosures

DOE #: 201603622 DOE S-138,261 - Sreenivas R. Sukumar, Supriya Chinthavali, **Olufemi A. Omitaomu**, Matt Lee. Predicting Propagation Consequences of Perturbations in Synergistically Interacting Infrastructure Networks

DOE #: 201503595 DOE S-138,232 - **Olufemi A. Omitaomu** and Budhendra L. Bahduri. Smart Snow Removal Analysis

DOE #: 201503477 DOE S-138,108 - **Olufemi A. Omitaomu**, Esther Parish, and Phil Nugent. Urban-CAT: Integrated Framework for Urban Climate Adaptation Tool

DOE #: - **Olufemi A. Omitaomu** and Budhendra L. Bhaduri. CoNNECT: Citizen Engagement for Energy Efficient Communities

DOE #: DOE S-124,011 - Steven J. Fernandez, **Olufemi A. Omitaomu**, and others. Real-Time Simulation of Power Grid Disruptions

DOE #: DOE S-115,121 - Auroop R. Ganguly and **Olufemi A. Omitaomu**. Anomaly Detection and Risk Assessment Tool for Security Decisions

Honors and Awards

- **November 2021:** 2021 Best Paper Award, Optimizing green infrastructure placement under precipitation uncertainty. Omega 100.
- **October 2021:** 2021 R&D 100 Award - Software/Services Category, Precision Deicer, R&D World
- **December 2020:** Technology Commercialization Award, Clinch River Computing LLC, Oak Ridge National Laboratory
- **November 2020:** 2020 Best Paper Award, Optimal planning of the joint placement of photovoltaic panels and green roofs under climate change uncertainty. Omega 90.
- **December 2017:** Technology Commercialization Award, East View Cartographic Inc., Oak Ridge National Laboratory
- **October 2017:** UT-Battelle Mentor of Student Researchers Award, Oak Ridge National Laboratory

- **October 2017:** Best SEED Money Fund Poster Award, Oak Ridge National Laboratory
- **December 2016:** Significant Event Award, Transition of DOE's EAGLE-I to ORNL, Oak Ridge National Laboratory
- **July 2016:** Election as a Senior Member, Institute of Electrical and Electronic Engineers (IEEE)
- **May 2016:** ISERC Best Track Paper Award in Modeling and Simulation, A Decision Analysis Tool for Climate Impacts, Adaptations, and Vulnerabilities, Institute of Industrial and Systems Engineers
- **October 2015:** Significant Event Award, Development of a New Virtualization of the Evolving Power Grid, Oak Ridge National Laboratory
- **July 2015:** 2015 R&D 100 Award Finalist - Software/Services Category, CoNNECT 2.0: Activity-Based Recommender Systems for Energy Services, R&D World
- **June 2015:** ISERC Best Track Paper Award in Modeling and Simulation, Optimization Based Data Mining Approach for Forecasting Energy Demand, Institute of Industrial and Systems Engineers
- **January 2015:** Appreciation Award, Development of Oak Ridge Siting Analysis for Power Generation Expansion, Reactor and Nuclear Systems Division, Oak Ridge National Laboratory
- **December 2014:** Technology Commercialization Award, Oak Ridge National Laboratory
- **May 2013:** Elected as a Senior Member, Institute of Industrial and Systems Engineers (IISE)
- **November 2012:** Distinguish Employee Award, Computational Sciences and Engineering Division, Oak Ridge National Laboratory
- **August 2010:** Exceptional Mentoring Award, Research Alliance in Math and Science, U.S. Department of Energy, Office of Science
- **November 2009:** Engineering R&D Team Award, Oak Ridge National Laboratory
- **August 2008:** Significant Event Award, Successful Design and Implementation of Visualizing Energy Resources Dynamically on Earth (VERDE), Oak Ridge National Laboratory
- **May 2004:** The Outstanding Ph.D. Student Award, Department of Industrial and Information Engineering, University of Tennessee, Knoxville
- **December 1995:** The Lagos State University Senate Award to the Best Graduating Student in the College of Engineering
- **December 1995:** Seriki Akodu's Award to the Best Student in the Faculty of Engineering, Lagos State University
- **December 1995:** Professor E.B. Lucas Award to the Best Graduating Student in the Department of Mechanical Engineering, Lagos State University
- **December 1995:** Dr. Biodun Noah's Award to the Best Student in the Department of Mechanical Engineering, Lagos State University
- **December 1995:** The Volkswagen Nigeria Limited Award to the Most Outstanding Student in the Department of Mechanical Engineering, Lagos State University

Refereed Journal

1. Badiru, Adedeji B., Nils Wagenknecht, Andreas Mertens, **Olufemi Omitaomu** (2024), "Quantitative Systems Modeling for Critical Infrastructure Predictions in Climate Change: A National Defense Framework," ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems Part B: Mechanical Engineering, March 2024, Vol. 10 / 011101-1. DOI: 10.1115/1.4063793.
2. Niu, Haoran, **Olufemi A. Omitaomu**, Michael A. Langston, Mohammad Olama, Ozgur Ozmen, Hilda B. Klasky, Angela Laurio, Merry Ward, and Jonathan Nebeker (2024). "EHR-BERT: A BERT-based model for effective anomaly detection in electronic health records." Journal of Biomedical Informatics, 104605.
3. Niu, Haoran, **Olufemi A. Omitaomu**, Michael A. Langston, Mohammad Olama, Ozgur Ozmen, Hilda B. Klasky, Angela Laurio, Brian Sauer, Merry Ward, and Jonathan Nebeker (2022). "Detecting anomalous sequences in electronic health records using higher-order tensor networks." Journal of Biomedical Informatics, 104219.
4. **Olufemi A. Omitaomu**, Randy Belles, Nicholas Roberts, Andrew Worrall. "Methods and system for siting advanced nuclear reactors and evaluating energy policy concerns." Progress in Nuclear Energy, 148, (2022) 104197.
5. **Olufemi A. Omitaomu**, Klasky, H.B., Olama, M., Ozmen, O., Pullum, L., Thakur, A.M., Kuruganti, T., Scott, J.M., Laurio, A., Drews, F., Sauer, B.C., Ward, M., and Nebeker, J. "A new methodological framework for hazard detection models in health information technology systems." Journal of Biomedical Informatics, 124, (2021) 103937.
6. Susan M. Kotikot and **Olufemi A. Omitaomu**. "Spatial–Temporal Patterns of Historical, Near-Term, and Projected Drought in the Conterminous United States." Hydrology 8, no. 136 (2021): 1-16.
7. **Olufemi A. Omitaomu** and Haoran Niu. "Artificial Intelligence Techniques in Smart Grid: A Survey." Smart Cities 4, no. 2 (2021): 548-568.
8. Barah, Masoud, Anahita Khojandi, Xueping Li, Jon Hathaway, and **Olufemi A. Omitaomu**. "Optimizing green infrastructure placement under precipitation uncertainty." *Omega* 100 (2021): 102196 **(Received the Best Paper Award in 2021)**.
9. Niu, Haoran, **Olufemi A. Omitaomu**, and Qing C. Cao. "Machine Committee Framework for Power Grid Disturbances Analysis Using Synchrophasors Data." *Smart Cities* 4, no. 1 (2021): 1-16.
10. **Olufemi A. Omitaomu**, S. M. Kotikot, and E. S. Parish. "Planning Green Infrastructure Placement based on Projected Precipitation Data." *Journal of Environmental Management* 279 (2021): 111718. doi: 10.1016/j.jenvman.2020.111718.
11. Lim, M, **Olufemi A. Omitaomu** and S. J. Bae. "A Step-Down Test Procedure for Wavelet Shrinkage Using Bootstrapping." *IEEE Access* 8 (2020): 174763-174772. doi: 10.1109/ACCESS.2020.3025103.
12. Langholtz, Matthew, Ingrid Busch, Abishek Kasturi, Michael R. Hilliard, Joanna McFarlane, Costas Tsouris, Srijib Mukherjee, **Olufemi A. Omitaomu**, Susan M. Kotikot, Melissa R. Allen-Dumas, Christopher R. DeRolph, Maggie R. Davis, Esther S. Parish. 2020. "The Economic Accessibility of CO2 Sequestration through Bioenergy with Carbon Capture and Storage (BECCS) in the US." *Land* 9 (2020): 299.
13. Allen-Dumas, Melissa R., Amy N. Rose, Joshua R. New, **Olufemi A. Omitaomu**, Jiangye Yuan, Marcia L. Branstetter, Linda M. Sylvester, et al. "Impacts of the morphology of new neighborhoods on microclimate and building energy." *Renewable and Sustainable Energy Reviews* 133 (2020): 110030.

14. Kotikot, Susan M., Bandana Kar, and **Olufemi A. Omitaomu**. "A Geospatial Framework Using Multicriteria Decision Analysis for Strategic Placement of Reserve Generators in Puerto Rico." *IEEE Transactions on Engineering Management* 67, Issue 3 (2020): 659-669.
15. Ramshani, Mohammad, Xueping Li, Anahita Khojandi, and **Olufemi A. Omitaomu**. "An agent-based approach to study the diffusion rate and the effect of policies on joint placement of photovoltaic panels and green roof under climate change uncertainty." *Applied Energy* 261 (2020): 114402.
16. Ramshani, Mohammad, Anahita Khojandi, Xueping Li, and **Olufemi A. Omitaomu**. "Optimal planning of the joint placement of photovoltaic panels and green roofs under climate change uncertainty." *Omega* 90 (2020): 101986 **(Received the Best Paper Award in 2020)**.
17. Rodriguez, Tony K., **Olufemi A. Omitaomu**, and James A. Ostrowski. "Allocating limited deicing resources in winter snow events." *Journal on Vehicle Routing Algorithms* 2, no. 1-4 (2019): 75-88.
18. **Omitaomu, Olufemi A.**, Ozgur Ozmen, Mohammed M. Olama, Laura L. Pullum, Teja Kuruganti, James Nutaro, Hilda B. Klasky et al. "Real-Time Automated Hazard Detection Framework for Health Information Technology Systems." *Health Systems* 8, no. 3 (2019): 190-202.
19. Sylvester, Linda, **Olufemi A. Omitaomu**, Esther S. Parish, and Budhendra L. Bhaduri. "Evaluating the Implications of Climate Projections on Heat Hardiness Zones for Green Infrastructure Planning." *Current Environmental Engineering* 6, no. 1 (2019): 55-73.
20. Fialkoff, Marc R., **Olufemi A. Omitaomu**, Steven K. Peterson, and Mark A. Tuttle. "Using geographic information science to evaluate legal restrictions on freight transportation routing in disruptive scenarios." *International Journal of Critical Infrastructure Protection* 17 (2017): 60-74.
21. Nugent, Philip J., **Olufemi A. Omitaomu**, Esther S. Parish, Rui Mei, Kathleen M. Ernst, Mariya Absar, and Linda Sylvester. "A web-based geographic information platform to support urban adaptation to climate change." *In Advances in Geocomputation*, pp. 371-381. Springer, Cham, 2017.
22. Fialkoff, Marc R., and **Olufemi A. Omitaomu**. "The Jones Act and its Effect on Freight Transportation in the Aftermath of Disruptive Events: A GIS Perspective." *The CIP Report* 16, no. November (2016).
23. Jafari-Marandi, Ruholla, Mengqi Hu, and **Olufemi A. Omitaomu**. "A distributed decision framework for building clusters with different heterogeneity settings." *Applied Energy* 165 (2016): 393-404.
24. **Omitaomu, Olufemi A.**, Alex Sorokine, and Varun Chandola. "Virtualization of the Evolving Power Grid." *IEEE Smart Grid Newsletter Compendium 2015 – Smart Grid: The Next Decade*, September, (2015). **1 of 32 (out of some 215 articles) described as "best of the best" insightful articles from the IEEE Smart Grid Newsletter**.
25. **Omitaomu, Olufemi A.**, Nagendra Singh, and Budhendra L. Bhaduri. "Mapping suitability areas for concentrated solar power plants using remote sensing data." *Journal of Applied Remote Sensing* 9, no. 1 (2015): 097697.
26. Bekera, Behailu B., Royce A. Francis, and **Olufemi A. Omitaomu**. "Drought risk modelling for thermoelectric power plants siting using an excess over threshold approach." *International Journal of System of Systems Engineering* 5, no. 1 (2014): 25-44.

27. Allen, M., S. Fernandez, **Olufemi A. Omitaomu**, and K. Walker. "Application of hybrid geo-spatially granular fragility curves to improve power outage predictions." *J Geogr Nat Disast* 4, no. 127 (2014): 2167-0587.
28. Kodysh, Jeffrey B., **Olufemi A. Omitaomu**, Budhendra L. Bhaduri, and Bradley S. Neish. "Methodology for estimating solar potential on multiple building rooftops for photovoltaic systems." *Sustainable Cities and Society* 8 (2013): 31-41.
29. Mays, Gary T., R. J. Belles, **Olufemi A. Omitaomu**, and W. P. Poore III. "Application of Spatial Data Modeling and Geographical Information Systems for Identification of Potential Siting Options for Small Modular Reactors." *Transactions* 109, no. 1 (2013): 2241-2244.
30. **Omitaomu, Olufemi A.**, Brandon R. Blevins, Warren C. Jochem, Gary T. Mays, Randy Belles, Stanton W. Hadley, Thomas J. Harrison, Budhendra L. Bhaduri, Bradley S. Neish, and Amy N. Rose. "Adapting a GIS-based multicriteria decision analysis approach for evaluating new power generating sites." *Applied Energy* 96 (2012): 292-301.
31. **Omitaomu, Olufemi A.**, Alex Sorokine, and Varun Chandola. "Virtualization of the Evolving Power Grid." *IEEE Smart Grid Newsletter*, June, (2012).
32. **Omitaomu, Olufemi A.**, Vladimir A. Protopopescu, and Auroop R. Ganguly. "Empirical mode decomposition technique with conditional mutual information for denoising operational sensor data." *IEEE sensors journal* 11, no. 10 (2011): 2565-2575.
33. Jeong, Young-Seon, Myong K. Jeong, and **Olufemi A. Omitaomu**. "Weighted dynamic time warping for time series classification." *Pattern recognition* 44, no. 9 (2011): 2231-2240.
34. **Omitaomu, Olufemi A.**, Myong K. Jeong, and Adedeji B. Badiru. "Online support vector regression with varying parameters for time-dependent data." *IEEE Transactions on Systems, Man, and Cybernetics-Part A: Systems and Humans* 41, no. 1 (2010): 191-197.
35. Fang, Yi, **Olufemi A. Omitaomu**, and Auroop R. Ganguly. "Incremental Anomaly Detection Approach for Characterizing Unusual Profiles." *Knowledge Discovery from Sensor Data Series*, LNCS 5840, (2010): 190-202.
36. **Omitaomu, Olufemi A.**, Auroop R. Ganguly, Bruce W. Patton, and Vladimir A. Protopopescu. "Anomaly detection in radiation sensor data with application to transportation security." *IEEE Transactions on Intelligent Transportation Systems* 10, no. 2 (2009): 324-334.
37. Kwon, Yongjin, **Olufemi A. Omitaomu**, and Gi-Nam Wang. "Data mining approaches for modeling complex electronic circuit design activities." *Computers & Industrial Engineering* 54, no. 2 (2008): 229-241.
38. Jeong, Myong K., Seong G. Kong, and **Olufemi A. Omitaomu**. "Data Mining of Multi-Dimensional Functional Data for Manufacturing Fault Diagnosis." *Recent Advances in Data Mining of Enterprise Data: Algorithms and Applications* 6 (2008): 463.
39. **Omitaomu, Olufemi A.**, Myong K. Jeong, Adedeji B. Badiru, and J. Wesley Hines. "Online support vector regression approach for the monitoring of motor shaft misalignment and feedwater flow rate." *IEEE Transactions on Systems, Man, and Cybernetics, Part C (Applications and Reviews)* 37, no. 5 (2007): 962-970.
40. **Omitaomu, Olufemi A.**, and Adedeji Badiru. "Fuzzy present value analysis model for evaluating information system projects." *The Engineering Economist* 52, no. 2 (2007): 157-178.

41. Cho, Seong-Hoon, **Olufemi A. Omitaomu**, Neelam C. Poudyal, and David B. Eastwood. "The impact of an urban growth boundary on land development in Knox County, Tennessee: A comparison of two-stage probit least squares and multilayer neural network models." *Journal of Agricultural and Applied Economics* 39, no. 1379-2016-112648 (2007): 701-717.
42. **Omitaomu, Olufemi A.**, Myong K. Jeong, Adedeji B. Badiru, and J. Wesley Hines. "On-line prediction of motor shaft misalignment using fast fourier transform generated spectra data and support vector regression." *ASME Transactions, Journal of Manufacturing Science and Engineering* 128, no 4 (2006): 1019-1024.
43. Kwon, Yongjin, Myong K. Jeong, and **Olufemi A. Omitaomu**. "Adaptive support vector regression analysis of closed-loop inspection accuracy." *International Journal of Machine Tools and Manufacture* 46, no. 6 (2006): 603-610.
44. Badiru, Adedeji B., O. Asaolu, and **Olufemi A. Omitaomu**. "Eyewitness Information Management System Using Neuro-fuzzy Classification Schemes." *Journal of Information Science & Technology* 2, no. 3 (2006).
45. **Omitaomu, Olufemi A.**, Levi D. Smith, and Adedeji B. Badiru. "The ENGINeering Economic Analysis (ENGINEA) Software: Enhancing Teaching and Application of Economic Analysis Techniques." *ASEE Computers in Education Journal* 15, no. 4 (2005): 32-38.
46. Badiru, Adedeji B., and **Olufemi Omitaomu**. "Design and Analysis of Tent Cash Flow Models for Engineering Economy Lectures." *The Engineering Economist* 48, no. 4 (2003): 363-374.

Refereed Conference Proceedings

47. Nagendra Singh and **Olufemi A. Omitaomu**. "Spatiotemporal Variability of Electric System Reliability Metrics." In Proceedings of the 1st ACM SIGSPATIAL International Workshop on Advances in Urban-AI (pp. 81-84), November 2023.
48. Hilda Klasky, Ozgur Ozmen, **Olufemi A. Omitaomu**, Mohammed Olama, Merry Ward, Angela Laurio, Jonathan Nebeker. "Towards a Comparative Assessment of Data-Driven Process Models in Health Information Technology." In 2023 IEEE 11th International Conference on Healthcare Informatics (ICHI), pp. 338-343. IEEE, 2023.
49. **Olufemi A. Omitaomu**. "Digital Twin for Systems 4.0: Enhancing Reliability Assessment Modeling and Simulation." Oak Ridge National Laboratory (ORNL), Oak Ridge, TN (United States), 2023.
50. Laura Pullum, **Olufemi A. Omitaomu**, Mohammed Olama, Addi Malviya Thakur, Ozgur Ozmen, Hilda Klasky, Teja Kuruganti, Merry Ward, Jeanie Scott, Angela Laurio, Brian Sauer, Frank Drews, and Jonathan Nebeker. "A Systematic Review of Healthcare Information Technology Anomaly Classification." In 2022 IEEE 10th International Conference on Healthcare Informatics (ICHI), 2022.
51. Haowen Xu, Xiaobing Liu, Jianming Lian, Yanfei Li, Mini Malhotra, **Olufemi A Omitaomu**. "A geo-visual analysis for exploring the socioeconomic benefits of the heating electrification using geothermal energy." In Proceedings of the 5th ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities, pp. 11-15. 2022.
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147. Ganguly, Auroop R., Joseph Whitmeyer, **Olufemi A. Omitaomu**, Peter Brecke, Mirsad Hadžikadić, Paul Gilman, Moutaz Khouja et al. "Towards a Characterization and Systematic Evaluation Framework for Theories and Models of Human, Social, Behavioral, and Cultural Processes within Agent-Based Models." *In Managing Complexity: Practical Considerations in the Development and Application of ABMs to Contemporary Policy Challenges*, pp. 93-136. Springer, Berlin, Heidelberg, 2013.
148. Chandola, Varun, **Olufemi A. Omitaomu**, and Steven J. Fernandez. "Data Analysis for Real Time Identification of Grid Disruptions". In Ting Yu, Nitesh Chawla, and Simeon Simoff (Eds.), *Computational Intelligent Data Analysis for Sustainable Development*. Taylor & Francis, London, UK, 2012.
149. **Omitaomu, Olufemi A.**. "Engineering Economic Analysis". In: Hossein Bidgoli (Ed.), *The Handbook of Technology Management*, Wiley, 2009.
150. Jeong, Myong K., Seong G. Kong, and **Olufemi A. Omitaomu**. "Data Mining in Multi-Dimensional Functional Data for Manufacturing Fault Diagnosis". In T. Warren Liao and Evangelos Triantaphyllou (Eds.), *Recent Advances in Data Mining of Enterprise Data: Algorithms and Applications*, pp. 463-504, Singapore: World Scientific, 2008.
151. Ganguly, Auroop R., **Olufemi A. Omitaomu**, Yi Fang, Shiraj Khan, and Budhendra L. Bhaduri. "Knowledge discovery from sensor data for scientific applications." *In Learning from Data Streams*, pp. 205-229. Springer, Berlin, Heidelberg, 2007.
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153. **Omitaomu, Olufemi A.**, and Adedeji B. Badiru. "Economic methods for comparing investment alternatives (Ch. 4)." *Computational Economic Analysis for Engineering and Industry*, pp. 61-83, 2007.
154. **Omitaomu, Olufemi A**. "Decision Trees." *In Lecture Notes In Data Mining*, pp. 39-51. 2006.
155. **Omitaomu, Olufemi A.** "Clustering: Categorical attributes." *In Lecture Notes In Data Mining*, pp. 143-152. 2006.

Edited Proceedings

156. **Olufemi A. Omitaomu**, Ali Mostafavi, and Yan Liu. "Urban-AI 2023 Workshop Report: *The 1st ACM SIGSPATIAL International Workshop on Advances in Urban-AI*, Hamburg, Germany, November 13, 2023."

157. Kar, Bandana, Guangtao Fu, Shima Mohebbi, Xinyue Ye, and **Olufemi A. Omitaomu**. "ARIC 2022 Workshop Report: *The 5th ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities*, Seattle, Washington, USA, November 1, 2022."

158. Kar, Bandana, Guangtao Fu, Shima Mohebbi, Xinyue Ye, and **Olufemi A. Omitaomu**. "ARIC 2021 Workshop Report: *The 4th ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities*, Beijing, China, November 2, 2021." SIGSPATIAL (DOI: 10.1145/3486626).

159. Kar, Bandana, **Olufemi A. Omitaomu**, Xinyue Ye, Shima Mohebbi, and Guangtao Fu. "ARIC 2019 Workshop Report: *The 2nd ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities*, Chicago, IL, USA November 5, 2019." SIGSPATIAL Special 11, no. 3 (2020): 18-19.

160. Kar, Bandana, **Olufemi A. Omitaomu**, Xinyue Ye, Shima Mohebbi, and Guangtao Fu. "ARIC 2018 Workshop Report: *The 1st ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities*, Seattle, WA, USA November 6, 2018." SIGSPATIAL Special 11, no. 3 (2019): 18-19.

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167. Ganguly, Auroop R., Joao Gama, **Olufemi A. Omitaomu**, Mohamed Medhat Gaber, and Ranga Raju Vatsavai. *Proceedings of the First International Workshop on Knowledge Discovery from Sensor Data (SensorKDD 2007)*. 2007.

Books

1. Adedeji B Badiru and **Olufemi A. Omitaomu**. Systems 4.0: Systems Foundations for Industry 4.0. CRC Press, 2023.

2. **Omitaomu, Olufemi A.**. *Intelligent Process Monitoring and Control Using Sensor Data*. Germany: Lap Lambert Academic Publishing, March, 2013.

3. Badiru, Adedeji B., and **Olufemi A. Omitaomu**. *Handbook of Industrial Engineering Equations, Formulas, and Calculations*. CRC Press, 2010.

4. Gaber, Mohamed Medhat, Ranga Raju Vatsavai, **Olufemi A. Omitaomu**, Joao Gama, Nitesh V. Chawla, and Auroop R. Ganguly. *Knowledge Discovery from Sensor Data*. LNCS 5840 (2010).
5. Vatsavai, Ranga Raju, **Olufemi A. Omitaomu**, João Gama, Nitesh V. Chawla, and Auroop R. Ganguly. *Knowledge Discovery from Sensor Data*. Springer-Verlag Berlin Heidelberg, 2010.
6. Gama, João, Auroop Ganguly, **Olufemi A. Omitaomu**, Raju Vatsavai, and Mohamed Gaber "Knowledge Discovery from Data Streams." *Intelligent Data Analysis* 13, no. 3 (2009): 403-404.
7. Ganguly, Auroop R., Joao Gama, **Olufemi A. Omitaomu**, Mohamed Gaber, and Ranga Raju Vatsavai, eds. *Knowledge Discovery from Sensor Data*. CRC Press, 2008.
8. Badiru, Adedeji B., and **Olufemi A. Omitaomu**. *Computational Economic Analysis for Engineering and Industry*. CRC Press, 2007.

Conference Presentations

1. Kar, Bandana, Susan Malaso Kotikot, Dan Wanyama, and **Olufemi A. Omitaomu**. "Monitoring Power Restoration Using Satellite Imagery and Social Vulnerability." AGUFM 2018 (2018): NH31E-1019.
2. Kotikot, Susan Malaso, **Olufemi A. Omitaomu**, and Budhendra L. Bhaduri. "Network Analysis of Localized Spatial-Temporal Drought Patterns." AGUFM 2018 (2018): IN11C-0635.
3. Burke, Angela, Lori A. Schultz, **Olufemi A. Omitaomu**, Andrew Molthan, Tony Cole, and Robert Griffin. "Verification and enhancement of VIIRS day-night band power outage detection product." AGUFM 2017 (2017): IN31C-0093.
4. Kar, Bandana, Caleb Robinson, Daniel B. Koch, and **Olufemi A. Omitaomu**. "Knowledge to Action-Understanding Natural Hazards-Induced Power Outage Scenarios for Actionable Disaster Responses." AGUFM 2017 (2017): PA41A-0307.
5. Allen, Melissa R., Amy Rose, Joshua R. New, Jiangye Yuan, **Olufemi A. Omitaomu**, Linda Sylvester, Marcia L. Branstetter, Thomaz M. Carvalhaes, Matthew Seals, and Anne Berres. "Modeling Urban Energy Savings Scenarios Using Earth System Microclimate and Urban Morphology." AGUFM 2017 (2017): GC23F-06.
6. **Omitaomu, Olufemi A.** Esther S. Parish, Phil Nugent, Linda Sylvester, Melissa R. Allen, Mariya Absar, Kathleen Ernst, and Thomaz M. Carvalhaes. "Development of Climate Adaptation Tool in Collaboration with City and County Stakeholders." AGUFM 2016 (2016): PA43B-2208.
7. Allen, Melissa R., **Olufemi A. Omitaomu**, Joseph H. Kennedy, S. Surendran Nair, HM Abdul Aziz, and Mark Coletti. "Enhancing Next-generation Earth Systems Models by Integrating Earth System Modeling, Data Analytics, and Agent-based Modeling." AGUFM 2016 (2016): GC31B-1114.
8. **Omitaomu, Olufemi A.**, Esther S. Parish, Phil Nugent, Rui Mei, Linda Sylvester, Kathleen Ernst, and Mariya Absar. "Integrated Framework for an Urban Climate Adaptation Tool." AGUFM 2015 (2015): PA42A-03.
9. Parish, Esther S., **Olufemi A. Omitaomu**, Linda Sylvester, and Phil Nugent. "Indicators for Assessing Climate Change Resilience Resulting from Emplacement of Green Infrastructure Projects Across an Urban Landscape." AGUFM 2015 (2015): PA31C-2166.

10. Allen, Melissa R., A. N. Rose, Marcia L. Branstetter, Jiangye Yuan, Joshua R. New, **Olufemi Omitaomu**, and Thomas J. Wilbanks. "Modeling Urban Energy Savings Scenarios using Earth System Microclimate and Urban Morphology." AGUFM 2015 (2015): GC21E-08.
11. **Omitaomu, Olufemi A.**. "Profiling Real-Time Electricity Consumption Data for Process Monitoring and Control". *Presented at the 2013 Industrial and Systems Engineering Research Conference*, May 18-22, San Juan, Puerto Rico, USA, 2013.
12. **Omitaomu, Olufemi A.**. "Identifying Potential Areas for Siting Interim Nuclear Waste Facilities Using Map Algebra and Optimization Approaches". *Presented at the 2013 Industrial and Systems Engineering Research Conference*, May 18-22, San Juan, Puerto Rico, USA, 2013.
13. Kodysh, Jeffrey B. and **Olufemi A. Omitaomu**. "Geospatially Profiling Smart Meter Data Energy Consumption Patterns". *Presented at the 2013 Annual Conference of the Association of American Geographers*, Los Angeles, California, USA, April 9-13, 2013.
14. Bhaduri, Budhendra L., **Olufemi A. Omitaomu**, Ian S. Kramer, and Jeffrey B. Kodysh. "CoNNECT: A Computational Framework for Energy Efficient Communities". *Presented at the 2012 Annual Conference of the Association of American Geographers*, New York City, New York, USA, February 2012.
15. Kramer, Ian S., **Olufemi A. Omitaomu**, and Budhendra L. Bhaduri. "SpatialNet: GeoAgent-based Architecture for automated Real-time Analysis and Dissemination". *Presented at the 2012 Annual Conference of the Association of American Geographers*, New York City, New York, USA, February 2012.
16. Kodysh, Jeffrey B. and **Olufemi A. Omitaomu**. "Visual-SOLAR: Modeling Solar Energy Potential for Distributed Generation". *Presented at the 2012 Annual Conference of the Association of American Geographers*, New York City, New York, USA, February 2012.
17. Neish, Bradley S. and **Olufemi A. Omitaomu**. "Power Generation Plant Placement Algorithm and Visualization Tool". *Presented at the 2012 Annual Conference of the Association of American Geographers*, New York City, New York, USA, February 2012.
18. Olama, Mohammed, Kyle Spafford, **Olufemi A. Omitaomu**, James Nutaro, Supriya Chinthavali, and Steven Fernandez. "High-Performance Computing for Real-Time Detection of Large-Scale Power Grid Disruptions." (2012).
19. Medina, Richard M. and **Olufemi A. Omitaomu**. "The Complex Geography of Terrorism in Nigeria". *Presented at the 2011 Annual Conference of the Association of American Geographers*, Seattle, Washington, USA, April 12-16, 2011.
20. **Omitaomu, Olufemi A.**, Randy Belles, Stanton W. Hadley, Gary T. Mays, and Brandon R. Blevins. "Spatial Modeling and Site Suitability Assessment for Compressed Air Energy Storage". *Presented at the 2011 Annual Conference of the Association of American Geographers*, Seattle, Washington, USA, April 12-16, 2011.
21. Kodysh, Jeffrey B. and **Olufemi A. Omitaomu**. "A GIS-based Methodology for Assessing Rooftop Solar Energy Potential". *Presented at the 2011 Annual Conference of the Association of American Geographers*, Seattle, Washington, USA, April 12-16, 2011.
22. **Omitaomu, Olufemi A.** and Steven J. Fernandez. "Data Product for Situational Awareness of the Electric Grid System." *Proceedings of the AFIT-AFRL Product Development Research Symposium*, 2011.

23. Jeong, Young-Seon, Myong K. Jeong, and **Olufemi A. Omitaomu**. "A Novel Distance Measure for Time Series Data Mining". *Presented at the 2010 INFORMS Annual Meeting*, Austin, Texas, Nov 7-10, 2010.

24. **Omitaomu, Olufemi A.**, Steven J. Fernandez, and Budhendra L. Bhaduri. "Estimating the Spatial Distribution of Population without Power during Extreme Weather Events". *Presented at the 2010 Annual Meeting of the Association of American Geographers*, Washington, DC, April 14 – 18, 2010.

25. Erickson, D. J., S. J. Fernandez, **Olufemi A. Omitaomu**, M. L. Branstetter, G. Butler, A. R. Ganguly, R. Oglesby, K. Steinhaeuser, E. Kodra, and S. Gray. "Climate Impacts on US Energy Infrastructure: A New High Resolution Model, Policy Implications and Feedbacks." AGUFM 2010 (2010): GC23A-0890.

26. **Omitaomu, Olufemi A.**, Jason N. Bank, and Steven J. Fernandez. "Online Data Mining Framework for the Electric Power Grid". *Presented at the NASA Conference on Intelligent Data Understanding*, Moffett Field, CA, October 14 – 16, 2009.

27. **Omitaomu, Olufemi A.** and Auroop R. Ganguly. "Knowledge Discovery from Heterogeneous Data for Risk-Informed Decisions to Facilitate Rapid Response". *Presented at the 2008 INFORMS Annual Meeting*, Washington, DC, October 11 – 15, 2008.

28. **Omitaomu, Olufemi A.**. "A Parallel Disintegrated Model for Uncertainty Analysis in Estimating Electrical Power Outage Areas". *Presented at the 2008 AGU Session on Impacts of Severe Weather on Environment, Economy, and Society* (Abstract No.: U41A-02), Fort Lauderdale, FL, May 27 – 30, 2008.

29. Vatsavai, Raju, Auroop R. Ganguly, **Olufemi A. Omitaomu**, and Budhendra L. Bhaduri. "Geospatial-temporal Data Mining for Infrastructure under Stress from Severe Weather Events". *Presented at the 2008 AGU Session on Impacts of Severe Weather on Environment, Economy, and Society* (Abstract No.: U41A-01), Fort Lauderdale, FL, May 27 – 30, 2008.

30. Walker, Randy M., **Olufemi A. Omitaomu**, Auroop R. Ganguly, R.K. Abercrombie, and F.T. Sheldon. "Multimodal Integrated Safety, Security, and Environmental Program Strategy". *Presented at the 87th Annual Meeting of the Transportation Research Board*, January 2008, Washington, DC, 08-2644, 2008.

31. Ganguly, Auroop R., **Olufemi A. Omitaomu**, Vladimir Protopopescu, Bruce Patton, Randy Walker, Yi Fang, Amrudin Agovic, and Arindam Banerjee. "Anomaly Detection from Heterogeneous Sensor Data with Application to Transportation Security". *Presented at the 2007 National Rural Intelligent Transportation Systems Conference*, Oct. 7-10, Traverse City, Michigan, 2007.

32. Badiru, Adedeji B., **Olufemi A. Omitaomu**, Godswill Nsofor, and Lynn A. York. "Concept of Program Management: Product Assurance of Command and Control Processes". *Presented at the 10th International Command and Control Research and Technology Symposium (CCRTS): The Future of C2.* McLean, VA. June 13-16, 2005.

33. **Omitaomu, Olufemi A.**, Myong K. Jeong, Adedeji B. Badiru, and J. Wesley Hines. "A support vector regression approach to machinery misalignment prediction using high-dimensional power spectrum data". *Presented at the 2005 Maintenance and Reliability Conference (MARCON 2005)*, Gatlinburg, Tennessee, May 3-6, 2005.

34. **Omitaomu, Olufemi A.**, Levi D. Smith, and Adedeji B. Badiru. "The Design and Development of ENGINeering Economic Analysis (ENGINEA) Software".

Presented at the 2005 Industrial Engineering Research Conference (IERC), Atlanta, Georgia, May, 2005.

35. **Omitaomu, Olufemi A.**, Myong K. Jeong, Adedeji B. Badiru, and J. Wesley Hines. "Motor Shaft Alignment Prediction Using On-line Support Vector Regression". *Presented at the 2005 INFORMS Annual Meeting*, November 13-16, San Francisco, California, 2005.
36. **Omitaomu, Olufemi A.**, C. Godswill Nsofor, and Adedeji B. Badiru. "Integrative Present Value Analysis Model for Evaluating Information System Projects". *Presented at the 2004 Industrial Engineering Research Conference (IERC)*, Houston, Texas, May, 2004.
37. Badiru, Adedeji B., Vincent Delgado, Jamie Ehresman-Gunter, **Olufemi A. Omitaomu**, Godswill Nsofor, Sirisha Saripalli. "Graphical and Analytical Methodology for Cost Benchmarking for New Construction Projects". *Presented at the 13th International Conference on Management of Technology (IAMOT)*, Washington, DC, April 3-7, 2004.
38. **Omitaomu, Olufemi**, and Adedeji B. Badiru. "Incorporation of Information Systems Economics into Engineering Economic Analysis Courses." ASEE Conference, page 9 (2004).
39. Badiru, Adedeji B. and **Olufemi A. Omitaomu**. "Tent Cash Flow Designs and Analysis for Gradient Cash Flow Lectures". *Presented at the 2003 ASEE Annual Conference and Exposition: Staying in Tune with Engineering Education*, 2003, pp. 3427-3441, 2003.
40. Badiru, Adedeji B. and **Olufemi A. Omitaomu**. "Integrative Learning and Forgetting Models for Quality and Productivity Improvement Analysis". *Presented at the 2003 INFORMS Annual Meeting*, Atlanta, Georgia, October, 2003.
41. Badiru, Adedeji B., Don McDaniel, and **Olufemi A. Omitaomu**. "An Integrative Study of Factors of Industrial Development in East Tennessee". *Presented at the 31st International Conference on Computers and Industrial Engineering*, San Francisco, California, February, 2003.
42. Badiru, Adedeji B. and **Olufemi A. Omitaomu**. "Application of Data Mining to Maintenance Management Systems". *Presented at the 6th Africa-USA International Conference in Manufacturing Technology*, Abuja, Nigeria, May, 2002.
43. Badiru, Adedeji B., **Olufemi A. Omitaomu**, and F.B. Odunayo. "Design of a Matrix Knowledge Base Framework for Plant Maintenance Planning and Control". *Presented at the 2001 Maintenance and Reliability Conference*, Gatlinburg, Tennessee, May, 2001.

Invited Talks

- **Lead Presenter**, Anomaly Detection in Sequence Data using Polyadic Interactions, 6th Professional Statisticians Society of Nigeria (PSSN) Conference, June 28, 2022.
- **Guest Speaker**, Efficient Detection of Anomalous Sequences in Electronic Health Records using Higher-Order Networks, Research Seminar at New York University, Center for Data Science (CDS), May 12, 2021
- **Public Lecture Guest Speaker**, Decision Support Tools for the Emerging Smart and Connected Infrastructures, part of the Presidential Dream Course on Analytics of Resilient Cyber-Physical-Social Networks, School of Industrial and Systems Engineering, University of Oklahoma, Feb 2018

- **Classroom Lecture Guest Speaker**, Decision Support Tools for Infrastructures Resiliency and Security, part of the Presidential Dream Course on Analytics of Resilient Cyber-Physical-Social Networks, School of Industrial and Systems Engineering, University of Oklahoma, Feb 2018
- **Invited Lecture**, Urban Resiliency Research at ORNL, Department of Civil and Environmental Engineering, Northeastern University, April 2017
- **Invited Speaker**, Analytics for the Smart Grids, Department of Systems Engineering, Air Force Institute of Technology, April 2012
- **Invited Speaker**, Data Product for Situational Awareness of the Electric Grid System, AFIT-AFRL Product Development Research Symposium, Air Force Institute of Technology, December 2010
- **Guest Speaker**, Advanced Data Mining for Engineering, Department of Industrial and Systems Engineering, University of Tennessee, March 2007
- **Guest Instructor**, Advanced Data Mining for Engineering and Manufacturing, Department of Industrial and Information Engineering, University of Tennessee, October 2005

Teaching Experience

- **Instructor**, Engineering Economic Analysis (Required Undergraduate Course), Department of Industrial and Information Engineering, University of Tennessee, August 2003-July 2005
- **Laboratory Instructor/Teaching Assistant**, Engineering Statics and Dynamics, College of Engineering ENGAGE Program, University of Tennessee, August 2002
- **Teaching Assistant**, Advanced Engineering Economic Analysis, Department of Industrial and Information Engineering, University of Tennessee, January 2001-July 2002

Professional Memberships

- Institute of Electrical and Electronics Engineers (IEEE)
  Since 2010, Senior Member since 2016
- Institute of Industrial and Systems Engineers (IISE)
  Since 2002, Senior Member since 2008
- The Institute for Operations Research and the Management Sciences (INFORMS)
  Since 2004
- Association for the Advancement of Artificial Intelligence (AAAI)
  Since 2021
- International Society for Urban Informatics (ISUI)
  Since 2022
- American Nuclear Society (ANS)
  Since 2022

Professional Services

Guest Editor of Special Journal Issue

- Smart Cities, Applied Artificial Intelligence in Energy Systems, 2021.
- Intelligent Data Analysis, Knowledge Discovery from Data Streams, Vol. 13, No. 3, 2009

Professional Services

- Track Co-Chair, Reliability Modeling and Simulation, 2022 Winter Simulation Conference, Singapore, December 11-14.

- Track Co-Chair, Modeling and Simulation Division, 2020 Institute of Industrial and Systems Engineers (IISE) Annual Conference.
- Workshop Co-Organizer, ARIC 2019 - The 2nd ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities, Chicago, IL, USA November 5, 2019.
- Session Co-organizer, Data Mining Applications in Electronic Health Records, 2019 INFORMS Annual Meeting, October 20-23, 2019.
- Workshop Co-Organizer, ARIC 2018 - The 1st ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities, Seattle, WA, USA November 6, 2018.
- Program Committee Member, 1st International Workshop on Data-intensive Process Management in Large-scale Sensor Systems (DPMSS-2012): From Sensor Networks to Sensor Clouds, 12th IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing, May 13-16, 2012
- Session Organizer and Chair, Distributed Renewable Generation, 2012 Industrial and Systems Engineering Research Conference, May 19-23, 2012
- Program Committee Member, Energy Mapping and Modeling, 2012 Annual Conference of the Association of American Geographers, February 2012
- Session Chair, Energy Mapping and Modeling, 2011 Annual Conference of the Association of American Geographers, April 12-16, 2011
- Workshop Co-Organizer and Lead-Chair, Fourth International Workshop on Knowledge Discovery from Sensor Data (SensorKDD-2010), 16th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, July 25-28, 2010
- Workshop Co-Organizer and Lead-Chair, Third International Workshop on Knowledge Discovery from Sensor Data (SensorKDD-2009), 15th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, June 28-July 1, 2009
- Program Committee Member, First International Workshop on Data Warehousing and Knowledge Discovery from Sensors and Streams, 5th International Conference on Distributed Computing in Sensor Systems (DCOSS 2009), June 8-10, 2009
- Workshop Co-Organizer and Co-Chair, Second International Workshop on Knowledge Discovery from Sensor Data (SensorKDD-2008), 14th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, June 8-10, 2008
- Workshop Co-Organizer and Co-Chair, First International Workshop on Knowledge Discovery from Sensor Data (SensorKDD-2007), 13th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, August12-15, 2007
- Workshop Program Committee Member, International Workshop on Knowledge Discovery from Ubiquitous Data Streams, 18th European Conference on Machine Learning (ECML) and the 11th European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD), September 17-21, 2007
- Conference Session Co-organizer and Co-Chair, Software Tools for Engineering Economic Analysis Session, Institute of Industrial Engineers Annual Research Conference, May 14-18, 2005
- Elected Board Member, Engineering Economy Division, Institute of Industrial Engineers, May 2002-May2006

Referee Services

- Applied Energy
- Infrastructures

- Applied Intelligence
- Nature Energy
- Journal of Homeland Security and Emergency
- IEEE Transactions on Systems, Man and Cybernetics: Systems
- IEEE Transactions on Sustainable Energy
- Sustainability
- Energies
- Water
- Risk Analysis
- The Engineering Economist
- Advances in Building Energy Research
- Sustainability and Disaster Risk Management
- Knowledge and Information Systems
- International Journal of Disaster Response and Emergency Management
- International Journal of Geo-Information
- Nuclear Engineering and Design
- IEEE Transactions on Intelligent Transportation Systems
- Data Mining and Knowledge Discovery
- International Journal of Knowledge and Learning
- International Journal of Multi-Sensor, Multi-Source Information Fusion
- International Journal of Operations Research and Information Systems
- IEEE Transactions on Automation Science and Engineering
- ASME Journal of Manufacturing Science and Engineering
- Journal of Computing in Civil Engineering
- Journal of Optimization Methods and Software
- IEEE Smart Grid Communication
- Soft Computing Journal
- Sensors

Panelist

- DOE Early Career Research Program Review
- DOE ASCR SBIR Review
- NSF IIS
- NSF Big Data
- NSF DM/ML

NEWS ARTICLES

U.S. Department of Energy News

- City of Knoxville demonstrates new precision de-icing technology developed by ORNL – newswise.com, Dec 11, 2018.
- Paper Boats to Energy Efficiency – web.ornl.gov, Aug 4, 2014.

Oak Ridge National Laboratory News

- City of Knoxville demonstrates new precision de-icing technology developed by ORNL – ornl.gov, Dec 11, 2018.
- Using Big Data to Build Better Cities – ornl.gov, Jan 22, 2018.
- Precision De-icing – ornl.gov, Dec 4, 2017.
- Improving Resiliency One Community at a Time – ornl.gov, Sept 28, 2016.

News Media

- ORNL, UT and Knoxville invent eco-friendly way to de-ice roads – knoxnews.com, May 6, 2020.
- New GPS technology on brine trucks could help cut down costs this winter – wbir.com, Nov 6, 2019.
- New technology to help salt Knoxville roads in snow – wbir.com, Dec 5, 2018.
- A lidar-equipped truck knows exactly how much de-icer to apply on roads – digitaltrends.com, Dec 12, 2018.
- 'Femi' has program for safer winter roads – farragutpress.com, Dec 14, 2017.

THESES SUPERVISED

Ph.D. Committee Members

- Haoran Niu
  Ph.D. Co-Advisors: Michael Langston - May 2023
  Min H. Kao Department of Electrical Engineering & Computer Science
  University of Tennessee, Knoxville
  (Currently, a Post-Doc at Oak Ridge National Laboratory)
- Zeyu (Louis) Liu
  Ph.D. Co-Advisors: Xueping Li and Anahita Khojandi - May 2022
  Department of Industrial & Systems Engineering
  University of Tennessee, Knoxville
  (Currently, a Assistant Professor at West Virginia University)
- Marc Fialkoff
  Ph.D. Advisor: Rob Buehler - May 2018
  Department of Urban Affairs & Planning
  Virginia Polytechnic Institute and State University
  (Currently, an R&D Staff member at Oak Ridge National Laboratory)
- Behailu B. Bekera
  Ph.D. Advisor: Royce Francis - May 2015
  Department of Engineering Management and Systems Engineering
  George Washington University
  (Currently, a Senior Data Science & Machine Learning Manager, GEICO)

M.S. Committee Member

- Katherine E. Barnett
  Thesis Advisor: Shima Mohebbi - May 2020
  (Won the Best M.S. Thesis Award in the School)
  School of Industrial and Systems Engineering
  University of Oklahoma

Research Mentees

Post-Doc Research Associates

- Dr. Haoran Niu (November 2023 - Date)
  Ph.D. Computer Engineering
  University of Tennessee, Knoxville

- Dr. Melissa R. Allen (January 2015 - December 2016)
  Ph.D. Energy Science and Engineering
  University of Tennessee, Knoxville
  (Currently, a R&D Staff member at Oak Ridge National Laboratory)

Post-Master Research Associates

- Susan Kotikot (June 2017 - June 2019)
  M.S. Earth System Science, University of Alabama at Huntsville
  (Currently, a Post-Doc at Penn State University)
- Parul Kaushal (January 2017 - May 2019)
  M.S. Electrical Engineering, University of Tennessee, Knoxville
  (Currently, an Engineer at Knoxville Utilities Board)
- Linda Sylvester (January 2015 - October 2017)
  M.S. Earth Science, Purdue University

Post-Bachelor Research Associates

- Nicholas Roberts (October 2019 - July 2021)
  B.S. Environmental Science, University of Alabama at Huntsville
  (Currently, a Software Engineer in the DC Area)
- Thomaz M. Carvalhaes (May 2014 - May 2017)
  B.S. Environmental Science, University of Michigan, Dearborn
  (Currently, a R&D Associate at Oak Ridge National Laboratory)
- Jeffrey B. Kodysh (May 2011 - May 2013)
  B.S. Geography, University of Toledo
- Brandon Blevins (November 2010 - July 2011)
  B.A. Environmental Science, University of Tennessee, Knoxville
  (Currently, Senior Program Manager, Transmission Asset Management at Tennessee Valley Authority)

Graduate Student Interns

- Haoran Niu (August 2019 - May 2023)
  Ph.D. Student, Computer Science, University of Tennessee, Knoxville
- Parul Kaushal (August 2016 - December 2016)
  M.S. Student, Electrical Engineering, University of Tennessee, Knoxville
- Marc R. Fialkoff (June - August 2015; January - December 2016)
  Ph.D. Student, Urban Affairs and Planning, Virginia Tech
- Hakeem Jones (June - August 2015)
  Ph.D. Student, Computer Science, Clemson University
- Behailu B. Bekera (June - August 2014)
  Ph.D. Student, Systems Engineering, The George Washington University
- Jason Bank (June - December 2009)
  Ph.D. Student, Electrical Engineering, Virginia Tech
- Christopher Ian Lanclos (May - August 2012)
  Ph.D. Student, Computer Science, Norfold State University

Undergraduate Student Interns

- Sidney Ozcan (June - August 2023)
  B.S. Student, Information Systems with a minor in Computer Science, Carnegie Mellon University
- Justin Evans (October 2022 - May 2023)
  B.S. Student, Health Science, University of Central Florida
- Robert Feldstein (June - August 2022)
  B.S. Student, Environmental Engineering, Cornell University, Ithaca, NY
- Jordan Pellett (May - August 2019)
  B.S. Student, Mathematics, Williams College
- Jack Sebring (May - August 2019)
  B.S. Student, Environmental Science
- Jordan Pellett (August - December, 2018)
  B.S. Student, Mathematics, Williams College
  (Jordan's research was awarded the Best Poster Award)
- Sydney Ishmael (June - August 2018)
  B.S. Student, University of Tennessee
- Gabriel Brookman (June - August 2018)
  B.S. Student, Carleton College
- Peter Lin (June - August 2018)
  B.S. Student, University of Florida
- Angela Burke (June - August 2017)
  B.S. Student, Earth System Science, University of Alabama at Huntsville
- Jeb Gary (June - August 2017)
  B.S. Student, Mechanical Engineering, Clemson University
- Connor Bihlmeyer (June - August 2017)
  B.S. Student, Mechanical Engineering, University of Tennessee
- Adam Sisco (September - December 2016)
  B.S. Student, Environmental Science, University of Alabama at Huntsville
- Fletcher Chapin (June - August 2016)
  B.S. Student, Environmental Engineering, Cornell University
- Sang Jun Park (June - August 2016)
  B.S. Student, Computer Science, Columbia University
- Dallas Hamlin (June - August 2016)
  B.S. Student, Electrical Engineering, University of Tennessee
- Grant T. Powell (June - August 2015)
  B.S. Student, Industrial and Systems Engineering, University of Tennessee
- David T. Herberich (June - August 2015)
  B.S. Student, Industrial and Systems Engineering, University of Tennessee
- David Lu (June - August 2014)
  B.S. Student, Computer Science, University of Tennessee
- Amy Albaugh (June - August 2014)
  B.S. Student, Energy Science and Engineering, University of Tennessee
- Daniel Noteboom (June - August 2013)
  B.S. Student, Computer and Engineering, University of Washington
- Christopher Scott Maness (October 2011 - May 2012)
  B.S. Student, Computer Science, East Tennessee State University

- Amanda Noranzyk (June - August 2011)
  B.S. Student, Mechanical Engineering, Clemson University
- Jeffrey B. Kodysh (June - August 2010; January - May 2011)
  B.S. Student, Geography, University of Toledo
  (Jeff's research outputs during this period was awarded 3rd Place in the Energy Category at the 2010 DOE's Science and Energy Research (SERCh) Competition at Argonne National Laboratory Chicago on November 15, 2010)
- Cornelius M. Singleton, Jr. (June - August 2010)
  B.S. Student, Computer Science, South Caroline State University