

# Anahita Khojandi

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Heath Endowed Faculty Fellow in Business & Engineering and Associate Professor  
Department of Industrial and Systems Engineering, University of Tennessee  
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## EDUCATION

*Ph.D. in Industrial Engineering*, 2014 University of Pittsburgh, Pittsburgh, PA  
Thesis: “Optimizing Implanted Cardiac Device Follow-Up Care”

\*Honorable Mention, George B. Dantzig Dissertation Award, INFORMS, 2014

*M.S. in Industrial Engineering*, 2009 University of Pittsburgh, Pittsburgh, PA

*B.S. in Industrial Engineering*, 2008 Sharif University of Technology, Tehran, Iran

## ACADEMIC EXPERIENCE

University of Tennessee, Knoxville (UTK)

Department of Industrial and Systems Engineering

*Assistant Professor*

Aug. 2014–July 2020

*Associate Professor*

Aug. 2020–present

Bredesen Center for Interdisciplinary Research and Graduate Education

*Adjunct Assistant Professor*

Jan. 2019–July 2020

*Joint Associate Professor*

Aug. 2020–present

Tickle College of Engineering

*Director of the Reliability and Maintainability Engineering Program*

Jan. 2021–Jan. 2024

*Heath Endowed Faculty Fellow in Business & Engineering*

Aug. 2023–present

## HONORS AND AWARDS

Teaching Award, Data Analytics & Information Systems (DAIS) Division, Institute of Industrial and Systems Engineers (IISE), 2024

INFORMS Senior Member, INFORMS, 2024

NIH’s AIM-AHEAD Fellowship Program in Leadership, 2023-2024

Expanding Horizons 2023-2024 Cohort Member, UTK, 2023

First Place, Harvey J. Greenberg Research Award, INFORMS Computing Society, 2022

Volunteer Service Award, INFORMS, 2022

Professional Promise in Research Award, Tickle College of Engineering, UTK, 2022

Best Paper Award of the Year, OMEGA – The International Journal of Management Science, 2021

Dr. Kenneth E. Kirby Endowed Faculty Award, Department of Industrial and Systems Engineering, UTK, 2021

Best Paper Award of the Year, OMEGA – The International Journal of Management Science, 2020

Outstanding Faculty Award, Department of Industrial and Systems Engineering, UTK, 2020

Success in Multidisciplinary Research Award for Health Innovation Technology & Simulation (HITS) Lab, UTK, 2019

Fellow, Center for Transportation Research, UTK, 2016

Best Track Paper, Engineering Economic Analysis, ISERC, 2016

Honorable Mention, George B. Dantzig Dissertation Award, INFORMS, 2014

Finalist, Lee Lusted Award, Society for Medical Decision Making (SMDM), 2013

## REFEREED PAPERS

(†: Directly supervised undergraduate/graduate students; ‡: Served as PhD/MS committee member)

1. Gursel, E.<sup>†</sup>, B. Reddy, K. Daniels<sup>†</sup>, J.B. Coble, M. Madadi, V. Agarwal, R.L. Boring, V. Yadav, **A. Khojandi**. SPIDARman: System-level Physics-Informed Detection of Anomalies in Reactor Collected Data Considering Human Errors. *Nuclear Technology*, 2024 (forthcoming).
2. Rezaei, S.<sup>†</sup>, N. Masoud, **A. Khojandi**. GAAD: GAN-enabled Autoencoder for Real-Time Sensor Anomaly Detection and Recovery in Autonomous Driving. *IEEE Sensors Journal*, 2024 (forthcoming).
3. Wood-Ponce, R.<sup>†</sup>, G. Diab, Z. Liu<sup>†</sup>, R. Blanchette<sup>†</sup>, J. Hathaway, **A. Khojandi**. Developing Data-Driven Learning Models to Predict Urban Stormwater Runoff Volume: A Case Study. *Urban Water Journal*, 2024 (forthcoming).
4. Rezaei, S.<sup>†</sup>, A. Cornelius, J. Karandikar, T. Schmitz, **A. Khojandi**. Using GANs to Predict Milling Stability from Limited Data. *Journal of Intelligent Manufacturing*, 1-35, 2024 (DOI: 10.1007/s10845-023-02291-1).
5. Rookard, C.<sup>†</sup>, **A. Khojandi**. RRIoT: Recurrent Reinforcement Learning for Cyber Threat Detection on IoT Devices. *Computers & Security*, 140, 103786, 2024.
6. Smith, B.<sup>†</sup>, B. Pant, Y. Liu, Y. Liu, J. Yang, S. Jesse, **A. Khojandi**, S.V. Kalinin, Y. Cao, R.K. Vasudevan. Physics-Informed Models of Domain Wall Dynamics as a Route for Autonomous Domain Wall Design via Reinforcement Learning. *Digital Discovery*, 3, 456-466, 2024.
7. Madadi, M., Rezaei, S.<sup>†</sup> **A. Khojandi**. Dynamic Joint Sensor Selection and Maintenance Optimization in Partially Observable Deteriorating Systems. *Computers & Industrial Engineering*, 187, 109853, 2024.
8. Baucum, M.<sup>†</sup>, **A. Khojandi**, R.K. Vasudevan, R. Ramdhani. Optimizing Patient-Specific Medication Regimen Policies Using Wearable Sensors in Parkinson's Disease. *Management Science*, 69(10), 5964-5982, 2023.
9. Ramdhani, R., J. Watts<sup>†</sup>, C. Sison, T. Fitzpatrick, M. Niethammer, **A. Khojandi**. Differential Spatiotemporal Gait Effects with Frequency and Dopaminergic Modulation in STN-DBS. *Frontiers in Aging Neuroscience*, 15, 1206533, 2023.
10. Smith, B.<sup>†</sup>, **A. Khojandi**, R.K. Vasudevan. Bias in Reinforcement Learning: A Review in Healthcare Applications. *ACM Computing Surveys*, 56(2), 1-17, 2023.
11. Liu, Z.<sup>†</sup>, M. Ramshani<sup>‡</sup>, **A. Khojandi**, X. Li. Optimal Utilization of Integrated Photovoltaic Battery Systems: An Application in the Residential Sector. *IISE Transactions*, 55(12), 1203-1216, 2023.  
 \*Featured in the research section of the November 2023 issue of the Industrial and Systems Engineer (ISE) Magazine, 2023
12. Smith, B.<sup>†</sup>, S. Van Steelandt<sup>‡</sup>, **A. Khojandi**. Evaluating the Impact of Healthcare Data Completeness for Deep Generative Models. *Methods of Information in Medicine*, 62(01/02), 031-039, 2023.
13. Scarbrough, K.<sup>†</sup>, P. Persaud, I. Fletcher<sup>†</sup>, A.A. Akin<sup>‡</sup>, J.M. Hathaway, **A. Khojandi**. Real-Time Sensor-Based Prediction of Soil Moisture in Green Infrastructure: A Case Study. *Environmental Modelling and Software*, 162, 105638, 2023.
14. St. John, S.<sup>†</sup>, M. Alberts<sup>†</sup>, J. Karandikar, J.B. Coble, B. Jared, T. Schmitz, C. Ramsauer, D. Leitner, **A. Khojandi**. Predicting Chatter Using Machine Learning and Acoustic Signals from Low Cost Microphones. *The International Journal of Advanced Manufacturing Technology*, 125(11-12), 5503-5518, 2023.
15. Baucum, M.<sup>†</sup>, **A. Khojandi**, C.R. Myers, L. Kessler. Optimizing Substance Use Treatment Selection Using Reinforcement Learning. *Transactions on Management Information Systems*, 14(2), 1-30, 2023.

16. Gursel, E.<sup>†</sup>, B. Reddy, **A. Khojandi**, M. Madadi, J.B. Coble, V. Agarwal, V. Yadav, R.L. Boring. Using Artificial Intelligence to Detect Human Errors in Nuclear Power Plants: A Case in Operation and Maintenance. *Nuclear Engineering and Technology*, 55(2), 603-622, 2023.  
  
\*Innovations in Nuclear Energy Research and Development Student Competition Award, Nuclear Energy University Program (NEUP), 2023
17. Weathers, M.<sup>‡</sup>, J.M. Hathaway, R.A. Tirpak, **A. Khojandi**. Evaluating the Impact of Climate Change on Future Bioretention Performance Across the Contiguous United States. *Journal of Hydrology*, 616, 128771, 2023.
18. Sethu, M., B. Kotla, D. Russell, M. Madadi, N.A. Titu<sup>†</sup>, J.B. Coble, R.L. Boring, K. Blache, V. Agarwal, V. Yadav, **A. Khojandi**. Application of Artificial Intelligence in Detection and Mitigation of Human Factor Errors in Nuclear Power Plants: A Review. *Nuclear Technology*, 209(3), 276-294, 2023.
19. Ramdhani, R.A., **A. Khojandi**, B.H. Kopell. An Editorial on Advancing the Treatment Landscape of Parkinson's Disease Using Sensor Technology and Data-Driven Modeling. *Frontiers in Aging Neuroscience*, 14, 2022.
20. Baucum, M.<sup>†</sup>, **A. Khojandi**, R.K. Vasudevan, R.L. Davis. Adapting Reinforcement Learning Treatment Policies Using Limited Data to Personalize Critical Care. *INFORMS Journal on Data Science*, 1(1), 27-49, 2022.
21. Liu, Z.<sup>†</sup>, **A. Khojandi**, X. Li, A. Mohammed, R.L. Davis, R. Kamaleswaran. A Machine Learning-Enabled Partially Observable Markov Decision Process Framework for Early Sepsis Prediction. *INFORMS Journal on Computing*, 34(4), 2039-2057, 2022.  
  
\*First Place, Harvey J. Greenberg Research Award, INFORMS Computing Society, 2022
22. Watts, J.<sup>†</sup>, F. van Wyk<sup>†</sup>, S. Rezaei<sup>†</sup>, Y. Wang, N. Masoud, **A. Khojandi**. A Dynamic Deep Reinforcement Learning-Bayesian Framework for Anomaly Detection. *IEEE Transactions on Intelligent Transportation Systems*, 23(12), 22884-22894, 2022.
23. Akin, A.A.<sup>‡</sup>, Hathaway, J.M., **A. Khojandi**, Turbidity Informed Real-Time Control of a Dry Extended Detention Basin: A Case Study. *Environmental Science: Water Research & Technology* 8(10), 2040-2051, 2022.
24. Lyu, Z., Liu, Z.<sup>†</sup>, **A. Khojandi**, A. Yu. Q-learning and Traditional Methods on Solving the Pocket Rubik's Cube. *Computers & Industrial Engineering*, 108452, 2022.
25. Liu, Z.<sup>†</sup>, X. Li, **A. Khojandi**. The Flying Sidekick Traveling Salesman Problem with Stochastic Travel Time: A Reinforcement Learning Approach. *Transportation Research Part E: Logistics and Transportation Review*, 164, 102816, 2022.
26. Rezaei, S.<sup>†</sup>, **A. Khojandi**, A. Haque<sup>‡</sup>, C. Brakewood, M. Jin, C. Cherry. Park-and-Ride Facility Location Optimization: A Case Study for Nashville, Tennessee. *Transportation Research Interdisciplinary Perspectives*, 13, 100578, 2022.
27. Liu, X., N. Masoud, Q. Zhu, **A. Khojandi**. A Markov Decision Process Framework to Incorporate Network-Level Data in Motion Planning for Connected and Automated Vehicles. *Transportation Research Part C: Emerging Technologies*, 136, 103550, 2022.
28. Rezaei, S.<sup>†</sup>, **A. Khojandi**, A. Haque<sup>‡</sup>, C. Brakewood, M. Jin, C. Cherry. Performance Evaluation of Mode Choice Models Under Balanced and Imbalanced Data Assumptions. *Transportation Letters: The International Journal of Transportation Research*, 14(8), 920-932, 2022.
29. Haque, A.<sup>‡</sup>, C. Brakewood, S. Rezaei<sup>†</sup>, **A. Khojandi**. A Literature Review on Park-and-Rides. *Journal of Transport and Land Use*, 14(1), 1039-1060, 2021.
30. Mohammed, A., F. van Wyk<sup>†</sup>, L.K. Chinthala, **A. Khojandi**, R.L. Davis, C.M. Coopersmith, R. Kamaleswaran. Temporal Differential Expression of Physiometers Predicts Sepsis in Critically Ill Adults. *Shock: Injury, Inflammation, and Sepsis: Laboratory and Clinical Approaches*, 56(1), 58-64, 2021.

31. Baucum, M.<sup>†</sup>, **A. Khojandi**, R.K. Vasudevan. Improving Deep Reinforcement Learning with Transitional Variational Autoencoders: A Healthcare Application. *IEEE Journal of Biomedical and Health Informatics*, 25(6): 2273-2280, 2021.
32. Tirpak, A., J. Hathaway, **A. Khojandi**, M. Weathers<sup>‡</sup>, T.H. Epps. Building Resiliency to Climate Change Uncertainty Through Bioretention Design Modifications. *Journal of Environmental Management*, 287: 112300, 2021.
33. Watts, J.<sup>†</sup>, **A. Khojandi**, R.K. Vasudevan, F. Nahab, R. Ramdhani. Improving Medication Regimen Recommendation for Parkinson's Disease Using Sensor Technology. *Sensors*, 21(10):3553, 2021.
34. Liu, Z.<sup>†</sup>, **A. Khojandi**, A. Mohammed, X. Li, L.K. Chinthala, R.L. Davis, R. Kamaleswaran. HeMA: A Hierarchically Enriched Machine Learning Method for Managing False Alarms in Real Time: A Sepsis Prediction Case Study. *Computers in Biology and Medicine*, 131: 104255, 2021.
35. Wang, Y., N. Masoud, **A. Khojandi**. Real-Time Sensor Anomaly Detection and Recovery in Connected Automated Vehicle Sensors. *IEEE Transactions on Intelligent Transportation Systems*, 22(3): 1411-1421, 2021.
36. Barah, M.<sup>†</sup>, **A. Khojandi**, X. Li, J. Hathaway, O. Omitaomu. Optimizing Green Infrastructure Placement Under Precipitation Uncertainty. *Omega: The International Journal of Management Science*, 100:102196, 2021.

\*Best Paper Award of the Year, OMEGA – The International Journal of Management Science, 2021

37. Watts, J.<sup>†</sup>, **A. Khojandi**, O. Shylo, R. Ramdhani. Machine Learning's Application in Deep Brain Stimulation for Parkinson's Disease: A Review. *Brain Sciences*, 10(11), 809, 2020.
38. Liu, Z.<sup>†</sup>, X. Li, **A. Khojandi**. On the  $k$ -Strong Roman Domination Problem. *Discrete Applied Mathematics*, 285: 227-241, 2020.
39. Koszalinski, R.S., **A. Khojandi**, B. Ramshaw. Improving Shared Decision-Making and Treatment Planning Through Predictive Modeling: Clinical Insights on Ventral Hernia Repair. *CIN: Computers, Informatics, Nursing*, 38(5): 227-231, 2020.
40. van Wyk, F.<sup>†</sup>, **A. Khojandi**, N. Masoud. Optimal Switching Policy Between Driving Entities in Semi-Autonomous Vehicles. *Transportation Research Part C: Emerging Technologies*, 114:517-531, 2020.
41. van Wyk, F.<sup>†</sup>, Y. Wang, **A. Khojandi**, N. Masoud. Real-Time Sensor Anomaly Detection and Identification in Automated Vehicles. *IEEE Transactions on Intelligent Transportation Systems*, 21(3):1264-1276, 2020.
42. Ramshani, M.<sup>‡</sup>, X. Li, **A. Khojandi**, O. 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*, 261:114402, 2020.
43. Ramshani, M.<sup>‡</sup>, **A. Khojandi**, X. Li, O. Omitaomu. Optimal Planning of the Joint Placement of Photovoltaic Panels and Green Roofs Under Climate Change Uncertainty. *Omega: The International Journal of Management Science*, 90:101986, 2020.

\*Best Paper Award of the Year, OMEGA – The International Journal of Management Science, 2020

44. van Wyk, F.<sup>†</sup>, **A. Khojandi**, R. Kamaleswaran. Improving Prediction Performance Using Hierarchical Analysis of Real-Time Data: A Sepsis Case Study. *IEEE Journal of Biomedical and Health Informatics*, 23(3):978-986, 2019.
45. van Wyk, F.<sup>†</sup>, **A. Khojandi**, B. Williams, D. MacMillan, R.L. Davis, D. Jacobson, R. Kamaleswaran. A Cost-Benefit Analysis of Automated Physiological Data Acquisition Systems Using Data-Driven Modeling. *Journal of Healthcare Informatics Research*, 3(2):245-263, 2019.
46. van Wyk, F.<sup>†</sup>, **A. Khojandi**, A. Mohammad, E. Begoli, R.L. Davis, R. Kamaleswaran. A Minimal Set of Physiomarkers in Continuous High Frequency Data Streams Predict Adult Sepsis Onset Earlier. *International Journal of Medical Informatics*, 122:55-62, 2019.

47. **Khojandi, A.**, O. Shylo, M. Zokaenikoo<sup>†</sup>. Automatic EEG Classification: A Path to Smart and Connected Sleep Interventions. *Annals of Operations Research*, 276(1-2):169-190, 2019.
48. Ramdhani, R.A., **A. Khojandi**, O. Shylo, B.H. Kopell. Optimizing Clinical Assessments in Parkinson's Disease Through the Use of Wearable Sensors and Data Driven Modeling. *Frontiers In Computational Neuroscience*, 12:72, 2018.
49. **Khojandi, A.**, V. Tansakul<sup>†</sup>, X. Li, R.S. Koszalinski, W. Paiva. Prediction of Sepsis and In-Hospital Mortality Using Electronic Health Records. *Methods of Information in Medicine*, 57(04):185-193, 2018.
50. Tirpak, R.A., J.M. Hathaway, J.A. Franklin, **A. Khojandi**. The Health of Trees in Bioretention: A Survey and Analysis of Influential Variables. *Journal of Sustainable Water in the Built Environment*, 4(4):04018011, 2018.
51. Koszalinski, R.S., V. Tansakul<sup>†</sup>, **A. Khojandi**, X. Li. Missing Data, Data Cleansing and Treatment from a Primary Study: Implications for Predictive Models. *CIN: Computers, Informatics, Nursing*, 36(8):367-371, 2018.
52. **Khojandi, A.**, L.M. Maillart, O.A. Prokopyev, M.S. Roberts, S.F. Saba. Dynamic Abandon/Extract Decisions for Failed Cardiac Leads. *Management Science*, 64(2):633-651, 2018.
53. Capan M., **A. Khojandi**, et al. From Data to Improved Decisions: Operations Research in Healthcare Delivery. *Medical Decision Making*, 37(8):849-859, 2017.
54. **Khojandi, A.**, O. Shylo, L. Mannini, B.H. Kopell, R.A. Ramdhani. Stratifying Parkinson's Patients with STN-DBS into High-Frequency or 60Hz-Frequency Modulation Using a Computational Model. *Neuromodulation: Technology at the Neural Interface*, 20(5):450-5, 2017.
55. **Khojandi, A.**, L.M. Maillart, O.A. Prokopyev, M.S. Roberts, T. Brown, W.W. Barrington. Optimal Implantable Cardioverter Defibrillator (ICD) Generator Replacement. *INFORMS Journal on Computing*, 26(3):599-615, 2014.
56. **Khojandi, A.**, L.M. Maillart, O.A. Prokopyev. Optimal Planning of Life-Depleting Maintenance Activities. *IIE Transactions*, 46(7):636-652, 2014.

## REFEREED CONFERENCE PROCEEDINGS AND ABSTRACTS

1. Baucum, M.<sup>†</sup>, S. Van Steelandt, R. Vasudevan, R. Davis, N. Shafi, **A. Khojandi**. GIMI: Generative iterative multiple imputation for improving health trajectory estimation in the ICU. In *33rd European Conference on Operational Research (EURO 2024)*, 2024 (forthcoming).
2. Anees, F., L. Pollack, A. Eldoud, N. Barber, C. Montgomery, J. Hathaway, **A. Khojandi**. Influence of Dam Spill Flow on Downstream River Water Temperatures. In *IEEE SoutheastCon*, 2024 (forthcoming).
3. Uhles, C, J. Hausladen, B. Humphrey, M. Hedrick, P.M. Johnstone, J. Allen, **A. Khojandi**. Insights Into Information-Seeking Behavior in Hearing-Loss Treatment. In *IEEE SoutheastCon*, 2024 (forthcoming).
4. Patwary, A.L., A. Sharmin, B. Haynie, D. Lockett, **A. Khojandi**, I. Mahdinia, A.J. Khattak. Applying Explainable Machine Learning for Multi-Occupant Crash Survival Time Prediction and Contributing Factor Analysis. In *Transportation Research Board 2024 Annual Meeting (TRB 2024)*, 2024.
5. Wang, Y., E. Zhang, N. Masoud, **A. Khojandi**. Dynamic Resource Allocation for Connected and Automated Vehicle's Cybersecurity. In *Transportation Research Board 2024 Annual Meeting (TRB 2024)*, 2024.
6. Tahmin, N.<sup>†</sup>, A. Mitoubisi<sup>†</sup>, B. Bakir Batu, A. Mohammed, L. Chinthala, A. Carlisle, T. Glauser, I. Krantz, K. Mandl, R.L. Davis, A. Wu, **A. Khojandi**, and members of the Genomic Information Commons Consortium. Predicting Precision Inhaled Corticosteroids Response in Asthma Patients. In *75th Annual Meeting of American Society of Human Genetics (ASHG 2023)*, 2023.

7. Gursel, E.<sup>†</sup>, B. Reddy, B. Smith<sup>†</sup>, S. Rezaei<sup>†</sup>, K. Daniels<sup>†</sup>, J.B. Coble, M. Madadi, V. Agarwal, R.L. Boring, V. Yadav, **A. Khojandi**. SPIDAR: System-Level Physics-Informed Detection of Anomalies in Reactors. In *13th Nuclear Plant Instrumentation, Control and Human-Machine Interface Technologies (NPIC&HMIT 2023)*, 2023.
8. Reddy, B., E. Gursel<sup>†</sup>, K. Daniels<sup>†</sup>, **A. Khojandi**, J.B. Coble, V. Agarwal, V. Yadav, R.L. Boring, M. Madadi. Explainable Artificial Intelligence for Identification of Human Errors in Nuclear Power Plants. In *13th Nuclear Plant Instrumentation, Control and Human-Machine Interface Technologies (NPIC&HMIT 2023)*, 2023.
9. Watts, J.<sup>†</sup>, E. Allen<sup>†</sup>, A. Mitoubsi<sup>†</sup>, **A. Khojandi**, J. Eales, T. Papamarkou. Towards Faster Gene Expression Prediction via Dimensionality Reduction and Feature Selection. In *2023 45th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2023)*, pp. 1-4, 2023.
10. Dey, R.<sup>†</sup>, **A. Khojandi**, K. Perumalla. Determining the Most Significant Metadata Features to Indicate Defective Software Commits. In *21st IEEE/ACIS International Conference on Software Engineering, Management and Applications (SERA 2023)*, pp. 258-265, 2023.
11. Rezaei, S.<sup>†</sup>, J. Gbadegoye, N. Masoud, **A. Khojandi**. A Deep Learning-Based Approach for Vehicle Motion Prediction in Autonomous Driving. In *7th International Conference on Control, Automation and Diagnosis (ICCAD'23)*, pp. 1-6, 2023.
12. Huff, J.<sup>†</sup>, J. Watts<sup>†</sup>, **A. Khojandi**, J.M. Hathaway. Deep Temporal Neural Networks for Water Level Predictions of Watershed Systems. In *2023 Systems and Information Engineering Design Symposium (IEEE SIEDS'23)*, pp. 108-113, 2023.
13. Rookard, C.<sup>†</sup>, **A. Khojandi**. Applying Deep Reinforcement Learning for Detection of Internet-Of-Things Cyber Attacks. In *IEEE Annual Computing and Communication Workshop and Conference (CCWC)*, pp. 0389-0395. IEEE, 2023.
14. Gunturkun, F., **A. Khojandi**, P. Ayyat, R.L. Davis, M. Baucum<sup>†</sup>, L.K. Chinthala, A. Mohammed, N.I. Shafi. Characterization and Prediction of Norepinephrine Response in Critically Ill Adults. In *Critical Care Medicine*, 51(1), 628, 2023.
15. Rookard, C.<sup>†</sup>, A. Crabtree, J.D. Trujillo, **A. Khojandi**. Secure Analytics for Embedded Systems Through Machine Learning Applications Using TrustZones. In *IEEE Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON 2022)*, pp. 0531-0537. IEEE, 2022.
16. Miramontes, E.<sup>‡</sup>, J. Penney, S. St. John<sup>†</sup>, E. Rummel, **A. Khojandi**, W.R. Hamel, T. Schmitz, B. Jared. In Situ Monitoring of Wire Arc Additive Manufacturing and Defect Prediction Using Random Forests. In *Annual International Solid Freeform Fabrication Symposium (SFF 2022)*, 2022.
17. Baucum, M.<sup>†</sup>, **A. Khojandi**, R. Ramdhani. Learning and Predicting Levodopa Regimens from Wearable Sensors: A Novel Machine Learning Approach. In *Movement Disorders*, 2022.
18. Watts, J.<sup>†</sup>, **A. Khojandi**, R. Ramdhani. Machine Learning and Instrumented Gait Analysis to Classify Subthalamic DBS States in Parkinson's Disease. In *Movement Disorders*, 37, pp. S181-S182, 2022.
19. Watts, J.<sup>†</sup>, E. Allen<sup>†</sup>, A. Mitoubsi<sup>†</sup>, **A. Khojandi**, J. Eales, F. Jalali-Najafabadi, T. Papamarkou. Adapting Random Forests to Predict Obesity-Associated Gene Expression. In *2022 44th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2022)*, pp. 4407-4410. IEEE, 2022.
20. Thompson, J.N., A. Skutnik, J. Coble, **A. Khojandi**, A. Palomino, V. Keppens, O. Kilic. Creating Pathways for Success and Engagement for Women in Engineering. In *2022 Collaborative Network for Engineering & Computing Diversity (CoNECD)*, 2022.
21. Baucum, M.<sup>†</sup>, **A. Khojandi**, T. Papamarkou. Hidden Markov Models as Recurrent Neural Networks: An Application to Alzheimer's Disease. In *21th IEEE International Conference on BioInformatics and BioEngineering (BIBE 2021)*, pp. 1-6, 2021.

22. Mitoubssi, A.<sup>†</sup>, Z. Liu<sup>†</sup>, D. Banks, **A. Khojandi**, M. Oliver, D. Cox, R. Fernandez. Evaluating the Fitness-to-Drive Using Evoked Visual Responses in Alzheimer’s Disease. In *2021 43rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2021)*, pp. 2382-2385. IEEE, 2021.
23. Day, M., R. Dey<sup>†</sup>, M. Baucum<sup>†</sup>, E. Paek, P. Hyejin, **A. Khojandi**. Predicting Severity in People with Aphasia: A Natural Language Processing and Machine Learning Approach. In *2021 43rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2021)*, pp. 2299-2302. IEEE, 2021.
24. Soni, A.<sup>†</sup>, B. Amrhein, M. Baucum<sup>†</sup>, E. Paek, **A. Khojandi**. Using Verb Fluency, Natural Language Processing, and Machine Learning to Detect Alzheimer’s Disease. In *2021 43rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2021)*, pp. 2282-2285. IEEE, 2021.
25. Watts, J.<sup>†</sup>, **A. Khojandi**, M. Niethammer, R. Ramdhani. Predicting MDS-UPDRS Ratings for Deep Brain Stimulation Patients Using Wearable Sensor Data. In *Movement Disorders*, 36, pp. S552-S553, 2021.
26. Coble, J., E. Deakins, T. Gallacher, **A. Khojandi**, J. Ostrowski, D. Mandell. An Exact Method for Maintenance Schedule Optimization in Nuclear Power Plants. In *12th Nuclear Plant Instrumentation, Control and Human-Machine Interface Technologies (NPIC&HMIT 2021)*, 2021.
27. Sethu, M., N.A. Titu<sup>†</sup>, D. Hu, M. Madadi, J.B. Coble, R.L. Boring, K. Blache, V. Agarwal, V. Yadav, **A. Khojandi**. Using Artificial Intelligence to Reduce and Mitigate Human Factor Errors: A Review. In *12th Nuclear Plant Instrumentation, Control and Human-Machine Interface Technologies (NPIC&HMIT 2021)*, 2021.
28. Titu, N.A.<sup>†</sup>, M. Baucum<sup>†</sup>, T. No, M. Trotsky, J. Karandikar, T.L. Schmitz, **A. Khojandi**. Estimating Johnson-Cook Material Parameters using Neural Networks. *Procedia Manufacturing*, Volume 53, pp. 680-689, 2021.
29. Baucum, M.<sup>†</sup>, **A. Khojandi**, R. Fernandez. Generating Realistic Patient Trajectories with Transitional Variational Autoencoders. In *Proceedings of the 2020 Society for Medical Decision Making Conference*, 2020.
30. Wang, Y., N. Masoud, **A. Khojandi**. Anomaly Detection in Connected and Automated Vehicles using an Augmented State Formulation. In *Proceedings of the 2020 Forum on Integrated and Sustainable Transportation Systems (Forum ISTS 2020)*, 2020.
31. Scarbrough, K.<sup>†</sup>, **A. Khojandi**, J. Hathaway. Real-Time Sensor-Based Prediction of Soil Moisture in Green Infrastructure. In *Proceedings of the 2020 Industrial and Systems Engineering Conference*, 2020.
32. Watts, J.<sup>†</sup>, **A. Khojandi**, O. Shylo, R. Ramdhani. Sensor-Based Gait Measurements Predict Subthalamic Deep Brain Stimulation Frequency in Parkinson’s Disease Patients – A Proof of Concept Study. In *Movement Disorders*, 35, pp. S488-S489, 2020.
33. Watts, J.<sup>†</sup>, **A. Khojandi**, R.K. Vasudevan, R. Ramdhani. Optimizing Individualized Treatment Planning for Parkinson’s Disease Using Deep Reinforcement Learning. In *2020 42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2020)*, pp. 5406-5409. IEEE, 2020.
34. Blanchette, R.<sup>†</sup>, **A. Khojandi**, D. Cox, M. Oliver, R. Fernandez. Predicting Alzheimer’s Disease Using Driving Simulator Data. In *2020 42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2020)*, pp. 5432-5435. IEEE, 2020.
35. van Wyk, F.<sup>†</sup>, **A. Khojandi**, N. Masoud. A Path Towards Understanding Factors Affecting Crash Severity in Autonomous Vehicles Using Current Naturalistic Driving Data. In: Bi Y., Bhatia R., Kapoor S. (eds) *Intelligent Systems and Applications. IntelliSys 2019. Advances in Intelligent Systems and Computing*, vol 1038. Springer, Cham, 2020.

36. Liu, Z.<sup>†</sup>, X. Li, **A. Khojandi**, S. Lazarova-Molnar. On the Extension of Schelling's Segregation Model. In *2019 Winter Simulation Conference (WSC)*, pp. 285-296. IEEE, 2019.
37. Ramshani, M.<sup>‡</sup>, X. Li, **A. Khojandi**, L. Treffert<sup>†</sup>. An Optimization Via Agent-based Simulation Framework To Integrate Stochastic Programming With Human Introduced Uncertainty. In *2019 Winter Simulation Conference (WSC)*, pp. 809-818. IEEE, 2019.
38. Kurt, M., **A. Khojandi**, M. Barah<sup>†</sup>, B. Tanriover. How Early is Too Early for a Preemptive Kidney Transplant? A Markov Decision Process-Based Retrospective Analysis. In *American Journal of Transplantation*, 17 (suppl 3), 2017.
39. Barah, M.<sup>†</sup>, M. Kurt, **A. Khojandi**, B. Tanriover. Living-Donor Preemptive Kidney Transplant Timing Calculator: An Online Decision Support Tool. In *American Journal of Transplantation*, 17 (suppl 3), 2017.
40. van Wyk, F.<sup>†</sup>, **A. Khojandi**, R. Kamaleswaran, O. Akbilgic, S. Nemati, R.L. Davis. How Much Data Should We Collect? A Case Study in Sepsis Detection Using Deep Learning. In *Healthcare Innovations and Point of Care Technologies (HI-POCT)*, 109-112. IEEE, 2017.
41. Tansakul, V.<sup>†</sup>, **A. Khojandi**, X. Li, R.S. Koszalinski. Predicting Sepsis and In-Hospital Mortality for Pneumonia Patients Using Electronic Health Record Data. In *Proceedings of the 2017 Society for Medical Decision Making Conference*, 2017.
42. Li, X., M. Ramshani<sup>‡</sup>, **A. Khojandi**, O. Omitaomu, and J.M. Hathaway. An Agent Based Model for Joint Placement of PV Panels and Green Roofs. In *2017 Winter Simulation Conference (WSC)*, pp. 1133-1144. IEEE, 2017.
43. Dorris, D.<sup>†</sup>, **A. Khojandi**, B. Ramshaw. Predicting Patients' Outcomes in Abdominal Wall Reconstruction Procedure. In *Proceedings of the 2017 Industrial and Systems Engineering Conference*, 2017.
44. **Khojandi, A.**, O. Shylo, B.H. Kopell, R.A. Ramdhani. Predicting the Optimal Stimulation Frequency for Deep Brain Stimulation Patients. *Annals of Neurology*, 80(s20):S68-S69, 2016.
45. van Wyk, F.<sup>†</sup>, P.J. Vlok, M. Jin, **A. Khojandi**, N. Brunkea. Incorporating Business Risks in Physical Asset Replacement: A Case in the Mining Industry. In *Proceedings of the 2016 Industrial and Systems Engineering Research Conference*, 2016.

\*Best Track Paper, Engineering Economic Analysis, ISERC, 2016

46. **Khojandi, A.**, L.M. Maillart, O.A. Prokopyev, M.S. Roberts. Medical Decision Making Problems with Large Policy Spaces: Why Markov Decision Processes Trump Simulation. In *Proceedings of the 2014 Society for Medical Decision Making Conference*, 2014.
47. **Khojandi, A.**, L.M. Maillart, O.A. Prokopyev, M.S. Roberts, S. Saba. Dynamic Abandon/Extract Decisions for Failed Cardiac leads. In *Proceedings of the 2013 Society for Medical Decision Making Conference*, 2013.

## PAPERS UNDER REVIEW OR REVISION

1. Alberts, M.<sup>†</sup>, St. John, S.<sup>†</sup>, B. Jared, J. Karandikar, **A. Khojandi**, T. Schmitz, J.B. Coble. Chatter Detection in Simulated Machining Data: A Simple Refined Approach to Vibration Data (under second review).
2. Reddy, B., E. Gursel<sup>†</sup>, K. Daniels<sup>†</sup>, **A. Khojandi**, J.B. Coble, V. Agarwal, R.L. Boring, V. Yadav, M. Madadi. Uncertainty-aware and Explainable Human Error Detection in the Operation of Nuclear Power Plant (under second review).
3. Rookard, C.<sup>†</sup>, **A. Khojandi**. Unsupervised Machine Learning for Cybersecurity Anomaly Detection in Traditional and Software-Defined Networking Environments (under review).
4. Gursel, E.<sup>†</sup>, M. Madadi, J.B. Coble, V. Agarwal, V. Yadav, R.L. Boring, **A. Khojandi**. The Role of AI in Detecting and Mitigating Human Errors in Safety-Critical Industries: A Review (under review).



5. Soni, A.<sup>†</sup>, J. Ostrowski, **A. Khojandi**. Generative Adversarial Network Based Anomaly Detection for Software Defect Prediction (under review).
6. Soni, A.<sup>†</sup>, J. Ostrowski, **A. Khojandi**. Graph-Based Feature Engineering for Just-in-Time Software Defect Prediction (under review).
7. Liu, Z.<sup>†</sup>, X. Li, **A. Khojandi**. A Two-Stage Optimization Framework to Enhance Interconnected Critical Infrastructure Systems Resilience Under Sequential Attacks (under review).
8. Dey, R.<sup>†</sup>, J. Ostrowski, Z. Cranmer, **A. Khojandi**. Heat or Eat? An Optimization Framework for Minimizing Energy Burden: A Case Study for Tennessee, USA (under review).
9. Smith, B.<sup>†</sup>, R.K. Vasudevan, N. Shafi, R. Davis, **A. Khojandi**. Uncovering Bias in Reinforcement Learning for Heparin Treatment Planning (under review).
10. Bagheri, F.<sup>†</sup>, J. Hathaway, N. Barber, C. Montgomery, **A. Khojandi**. RetroSight and ForeSight Ensemble Model for Improved Time Series Prediction: A Case Study on River Temperature Prediction (under review).

### BOOK CHAPTERS

1. Wood-Ponce, R.<sup>†</sup>, **A. Khojandi**, Hathaway, J.M. Optimization of Green Infrastructure. In *Encyclopedia of Optimization*, 2023. Springer, Cham.
2. Baucum, M.<sup>†</sup>, **A. Khojandi**, Markov Decision Processes: Application to Treatment Planning. In *Encyclopedia of Optimization*, 2023. Springer, Cham.

### ARTICLES IN PRESS

1. Johnson, M., **A. Khojandi**. Diversity and OR/MS/Analytics. *OR/MS Today*, 2019, <https://doi.org/10.1287/orms.2019.03.06>.
2. Ivy, J., P. Keskinocak, **A. Khojandi**, R. Kulkarni, A. Weintraub, P. Wu-Smith. Transparency, Diversity and Open Opportunity – Lessons Learned from the 2021 INFORMS Board of Directors Nominating Committee. *OR/MS Today*, 2021, <https://doi.org/10.1287/orms.2021.03.02>.

### PATENTS

1. **Khojandi, A.**, R. Ramdhani, M. Baucum<sup>†</sup>, J. Watts<sup>†</sup>. Optimizing Medication Planning Using Wearable Sensors in Chronic Diseases (utility patent filed).

### STUDENT RESEARCH ADVISING AND COMMITTEE MEMBERSHIP

Bredesen Center for Interdisciplinary Research and Graduate Education

– Doctoral Committee Chairship

1. Nahian Tahmin, expected Summer 2026
2. Isidora Fletcher, expected Summer 2025

3. Benjamin Rives Smith (co-chair), Summer 2023, “Insights into the Application of Deep Reinforcement Learning in Healthcare and Materials Science”  
*Position:* Mathematical Statistician, National Highway Traffic Safety Administration (NHTSA)

– Doctoral Committee Membership

- Ark Ifeanyi, expected Summer 2026; Joseph Lavalley-Rivera, expected Spring 2024; Sujana Chandrasekar, Spring 2021

Department of Industrial and Systems Engineering

– Doctoral Committee Chairship

4. Faezeh Bagheri, expected Summer 2027
5. Ezgi Gursel, expected Summer 2026
6. Ahmad Mitoubisi, expected Summer 2026
7. Sam St John, expected Summer 2025

8. Matthew Alberts (co-chair), expected Summer 2025
  9. Rupam Kumar Dey (co-chair), expected Fall 2024
  10. Curtis Rookard, PhD Candidate, expected Fall 2024
  11. Rachel Wood, PhD Candidate, expected Summer 2024
  12. Victoria Platt, PhD Candidate, expected Summer 2024
  13. Aradhana Soni (co-chair), PhD Candidate, expected Spring 2024
14. Shahrbanoo Rezaei, Summer 2023, “Improving Mobility and Safety in Traditional and Intelligent Transportation Systems Using Computational and Mathematical Modeling”  
*Position:* Senior Data Scientist, Walmart
  15. Jeremy Watts, Spring 2023, “Machine Learning and Decision Making to Optimize Treatment Planning in Parkinson’s Disease”  
*Position:* Postdoctoral Researcher of Mathematics, College of Arts and Sciences, UTK
  16. Zeyu Liu (co-chair), Summer 2022, “Optimizing Strategic Planning With Long-Term Sequential Decision Making Under Uncertainty: A Decomposition Approach”  
*Position:* Tenure-track Assistant Professor of Industrial and Management Systems Engineering, West Virginia University
  17. Matthew Baucum, Summer 2021, “Improving Reinforcement Learning Techniques for Medical Decision Making.”  
*Position:* Tenure-track Assistant Professor of Business Analytics, Florida State University
  18. Franco van Wyk, Summer 2019, “Real-Time Prediction and Decision Making in Connected and Automated Vehicles Under Cyber-Security and Safety Uncertainties”  
*Position:* Head of Engineering and Data Science at rather.chat
  19. Alexandr Mikhail Sokolov (co-chair), Spring 2019, “Numerical Evaluation of Research Project Performance”  
*Position:* Assistant Professor of Engineering Management, College of Engineering and Computer Science, Arkansas State University
  20. Masoud Barah, Fall 2018, “Optimizing Green Infrastructure Resilience Under Precipitation and Population Growth Uncertainties”  
*Position:* Postdoctoral Research Fellow, Department of Industrial Engineering and Management Sciences, Northwestern University
- Doctoral Committee Membership
    - Zekai Wang, expected Spring 2024; Sajjad Amrollahi Biyouki, Fall 2023; Timothy Gallacher, Fall 2023; Jianxin Xie, Summer 2023; Jeremy Hale, Fall 2022; Rui Li, Fall 2021; Suresh Rangan, Fall 2020; Andrii Berdnikov, Fall 2020; Nooshin Hamidian, Fall 2019; Amelia Mcilvenna, Fall 2019; Mohammad Ramshani, Summer 2019; Tony Rodriguez, Spring 2019; Lynn Reed, Spring 2019; Hesam Shams, Summer 2018; Saurav Kumar Dubey, Summer 2017
  - Master’s (Thesis-Based) Committee Chairship
    1. Katy Daniels, expected Summer 2024
    2. Varisara Tansakul (co-chair), Fall 2017, “The Use of EHR Data in Early Detection Systems: A Case in Sepsis and In-Hospital Mortality Prediction”
    3. Maryam Zokaeinikoo (co-chair), Spring 2016, “Automatic Sleep Stages Classification”
  - Master’s (Project-Based) Committee Chairship
    3. Akanni Adimu, expected Spring 2025
    4. Ayaz Bayramov, expected Spring 2025
    5. Abigail Roberts, expected Spring 2025
    6. Meredith Werley, expected Fall 2024
    7. Jason Phillips, expected Fall 2024
    8. Benjamin G. Lee, expected Fall 2024
    9. Garrett J. Robichaux, expected Fall 2024
    10. Jeremy Ricks, expected Fall 2024
    11. Kayleigh A. Jowers, expected Summer 2024

12. Ainslie Lowry, expected Summer 2024
  13. Ben Hermanns, Fall 2023, “Reliability Analysis and Improvement for Carding Machine Metal Detection Security Production Line Stops”
  14. Cheyanne N. King, Summer 2023, “Data-Driven Decision-Making: The Road to Becoming a Data-Driven Enterprise in the Pulp and Paper Industry”
  15. Taylor A. Krakuszeski, Fall 2022, “Implementation of Digital Maintenance Task System for Lubrication Program Management”
  16. Sarah M. Biver, Fall 2022, “Process Design and Anomaly Detection of a Cyanobacteria Raceway System for Martian Settlement”
  17. Alex Hines, Summer 2022, “Gaussian Process Modeling for Virtual Sensor Monitoring in Nuclear Power Plants”
  18. Benjamin J. Schroeder, Spring 2022, “Reliability Growth Models in New Product Development for Large Agricultural Equipment Manufacturing”
  19. Ashley M. Williams, Fall 2021, “Model Based Systems Engineering Integrated with Reliability Analysis”
  20. Haley W. Penney, Summer 2021, “The Impact of Electrical Failures on A Production Line”
- Master’s Committee Membership
    - Neha Petal, Summer 2022; Nathan P. Bearden, Spring 2022; Lloyd D. Lee, Fall 2021; Sinan Meric, Fall 2021; Rejith Chacko, Fall 2020; Avinash Ayyalasomayajula, Spring 2020; Aju Joseph, Spring 2020; Fabio Abreu, Spring 2020; Lixia He Lambert, Summer 2018; Bernard Albe Knueven, Fall 2017; Lavanya Marella, Fall 2015
  - Undergraduate Research Advising
    - Maura O’Driscoll, Summer 2023–present; Tyler Cummings, Summer 2023–present; Jordan Huff, Fall 2019–Fall 2023; Katy Daniels, Summer 2022–Summer 2023; Ayrika Anderson, Fall 2022–Spring 2023; Regine M Gomez, Fall 2022–Spring 2023; Alaina Washington, Summer 2022–Fall 2022; Elexis Allen, Summer 2020–Spring 2022; Kalina Scarbrough, Summer 2019–Spring 2022; Mollie Turner, Fall 2019–Summer 2021; Teesha Brown, Fall 2019–Summer 2021; Julia Boylan, Fall 2020–Spring 2021; Paulina Urbanowicz, Fall 2020; Mya Pinson, Summer 2020–Fall 2020; Jason Pan, Summer 2019–Summer 2020; Lorna M Treffert, Fall 2018–Spring 2019; Danika Dorris, Summer 2016–Summer 2018; Wesley Smith, Fall 2017; Grant Powell, Spring 2017; Skyler Devine, Spring 2016

#### Haslam College of Business

- Doctoral Committee Membership
  - Senne Van Steelandt, Spring 2023

#### Department of Civil and Environmental Engineering

- Doctoral Committee Membership
  - Amin Mohammadnazar, Fall 2021; Iman Mahdi Nia, Fall 2021; Aaron Alexander Akin, expected Summer 2021; Nima Hoseinzadeh, Fall 2020
- Master’s Committee Membership
  - Matthew Weathers, Spring 2021

#### Department of Mechanical, Aerospace, and Biomedical Engineering

- Doctoral Committee Membership
  - Reza Yazdanpanah Abdolmalaki, Fall 2018; Reza Abiri, Fall 2017
- Master’s Committee Membership
  - Eduardo Reyes Miramontes, Spring 2023

#### Department of Electrical Engineering & Computer Science, Doctoral Committee Membership

- Chris Gropp, expected Spring 2024; Chad Effler, Summer 2020; Sudarshan Srinivasan, Fall 2019

Department of Chemical and Biomolecular Engineering, Master's Committee Membership  
– Charlie Koudelka, Fall 2022

## POSTDOCTORAL MENTORING

1. Jeremy Watts (co-mentor), Summer 2023–present

## AWARDS GIVEN TO MENTORED UNDERGRADUATE STUDENTS

*Award of Merit*, Exhibition of Undergraduate Research and Creative Achievement (EURECA), UTK, 2022 (awarded to mentored student Jordan Huff)

*Third place*, Global Undergraduate Student Technical Paper Competition, IISE, 2021 (awarded to mentored student Kalina Scarbrough)

*First place*, Mid-Atlantic Region, Regional Undergraduate Student Technical Paper Competition, IISE, 2021 (awarded to mentored student Kalina Scarbrough)

*Second place*, Undergraduate Research Poster Competition – Engineering category, Annual Virtual Tennessee Louis Stokes Alliance for Minority Participation (TLSAMP) Research Conference, 2021 (awarded to mentored student Elexis Allen)

*Third place*, Operations Research Division Undergraduate Student Research Dissemination Award, IISE, 2020 (awarded to mentored student Kalina Scarbrough)

*Second place*, Academic Engagement, 1794 Scholars Showcase Award, UTK, 2020 (awarded to mentored student Kalina Scarbrough)

*First place*, Operations Research Division Undergraduate Student Research Dissemination Award, IISE, 2017 (awarded to mentored student Danika Dorris)

## FUNDED RESEARCH: EXTERNAL

**Anahita Khojandi** (PI) \$423,703 out of \$423,703 (under contracting)

Co-PIs: -

Department of Energy (DOE), UT-Battelle - Oak Ridge National Laboratory (ORNL)  
Cybernetics project in support of work for the U.S. Department of Veterans Affairs (VA)  
Jan. 2024–July 2025

**Anahita Khojandi** (PI) \$50,000 out of \$50,000

Co-PIs: -

National Institutes of Health (NIH), Artificial Intelligence/Machine Learning Consortium to Advance Health Equity and Researcher Diversity (AIM-AHEAD) Program  
The AIM-AHEAD Fellowship Program in Leadership - Cohort 2  
Sept. 2023–June 2024

**Anahita Khojandi** (PI) \$174,330 out of \$174,330

Co-PIs: James Ostrowski

Silicon Valley Community Foundation, Cisco University Research Program Fund  
“Advancing Software Security from the Very Origin via Novel Graph-Based Machine Learning”  
Mar. 2023–June 2024

Glenn Daehn (PI) \$250,000 out of \$25,938,414

Co-PIs: Jian Cao, Jagannathan Sankar, John Lewandowski, Tony Schmitz

UTK co-Is: **Anahita Khojandi**, Jamie Coble, Bradley Jared, Vasileios Maroulas, Courtney Faber

National Science Foundation (NSF), EEC-2133630

“NSF Engineering Research Center for Hybrid Autonomous Manufacturing: Moving from Evolution to Revolution (HAMMER)”  
Aug. 2022–July 2027

- Jon Hathaway (PI) \$119,944 out of \$399,812  
Co-PIs: **Anahita Khojandi**, Michael Blum  
NSF, CBET-2206540  
“Collaborative Research: Reimagining Urban Watershed Management: A Systems Approach to Stormwater Control and Ecological Rehabilitation”  
Aug. 2022–July 2025
- Anahita Khojandi** (PI) \$11,589 out of \$11,589  
Co-PIs: -  
DOE, UT-Battelle - ORNL  
“Applying RL Algorithms to Simulated and Pre-captured Datasets Generated at the Center for Nanophase Materials Sciences”  
July 2022–Sept. 2022
- Tony Schmitz (PI) \$260,239 out of \$1,301,195  
Co-PIs: **Anahita Khojandi**  
DOE, Office of Energy Efficiency & Renewable (EERE)  
“Physics-Guided Machine Learning (PGML) for Improved Aerostructure Manufacturing”  
Aug. 2021–Aug. 2024
- Anahita Khojandi** (PI) \$10,000 out of \$10,000 (in-kind)  
Co-PIs: Theodoros Papamarkou, James Eales  
NIH, National Human Genome Research Institute (NHGRI), Genomic Data Science Analysis, Visualization, and Informatics Lab-Space (AnVIL)  
“Deep Learning for Accurate Tissue-Specific Prediction of Gene Expression in Large Deeply-Phenotyped Population”  
May 2021–Mar. 2022
- Anahita Khojandi** (PI) \$201,000 out of \$800,000  
Co-PIs: Jamie Coble, Klaus Blache, Mahboubeh Madadi, Vivek Agarwal, Vaibhav Yadav, Ronald Boring, Stephen Farlett, Erica Swift  
DOE, Nuclear Energy University Programs (NEUP)  
“A Holistic Artificial Intelligence Tool to Mitigate Human Factor Uncertainty in Operation and Maintenance”  
Oct. 2020–Sept. 2024
- Jon Hathaway (PI) \$34,951 out of \$69,903  
Co-PIs: **Anahita Khojandi**, Xueping Li, Olufemi Omitaomu  
NSF, CMMI-1634975  
Supplemental Support to “Optimizing Green Infrastructure Investment to Improve Urban Storm Water System Resilience under Environmental Uncertainty” for “Data Science Activities for the Civil, Mechanical and Manufacturing Innovation Communities”  
July 2020–July 2022
- James Ostrowski (PI) \$211,200 out of \$800,000  
Co-PIs: **Anahita Khojandi**, Jamie Coble, Diego Mandelli, Gerry Kindred, Damian Fantroy  
DOE, NEUP  
“Economic Risk-Informed Maintenance Planning and Asset Management”  
Oct. 2019–Sept. 2022
- Ritesh Ramdhani (PI) \$114,498 out of \$451,709  
Co-Is: **Anahita Khojandi**, Oleg Shylo  
NIH, National Institute of Neurological Disorders and Stroke (NINDS)  
“Computational Modeling of 60Hz STN DBS for Gait Disorder in Parkinson’s Disease”

Sept. 2019–Aug. 2022

**Anahita Khojandi** (PI) \$67,500 out of \$150,000  
 Co-PIs: Candace Brakewood, Christopher Cherry, Mingzhou Jin  
 Tennessee Department of Transportation (TDOT)  
 “Improvement of Park-And-Ride Facilities and Services in Metropolitan Areas of Tennessee”  
 Aug. 2019–Aug. 2021

Xi, Zhimin (PI) \$50,832 out of \$451,155  
 co-PI: **Anahita Khojandi**  
 Defense Advanced Research Project Agency (DARPA) D17AP00007  
 “New Theory in Model-Based Design: A Design Foundation Driven by Probability of Design Errors”  
 Dec. 2016–Dec. 2019

Jon Hathaway (PI) \$109,655.4 out of \$365,518  
 Co-PIs: **Anahita Khojandi**, Xueping Li, Olufemi Omitaomu  
 NSF, CMMI-1634975  
 “Optimizing Green Infrastructure Investment to Improve Urban Storm Water System Resilience under Environmental Uncertainty”  
 Aug. 2016–July 2022

#### FUNDED RESEARCH: INTERNAL

**Anahita Khojandi** (PI) \$50,000 out of \$50,000  
 Co-PIs: Robert Davis, Annette Carlisle  
 AI TENNessee Initiative  
 “Equitable Pharmacogenetic Prediction in Severe Asthma”  
 June 2023–June 2024

**Anahita Khojandi** (PI) \$25,000 out of \$50,000  
 Co-PI: Jon Hathaway  
 AI TENNessee Initiative  
 “Improving Temperature and Solar Irradiation Forecasting in the Tennessee River”  
 June 2023–June 2024

**Anahita Khojandi** (PI) \$91,000 out of \$182,000  
 Co-PIs: Vasileios Maroulas  
 SARIF Opportunities Fund  
 “Advanced Computational Modeling for Diagnosis and Treatment Planning”  
 Feb. 2023–Feb. 2025

Scott Emrich (PI) \$25,000 out of \$50,000  
 Co-PIs: **Anahita Khojandi**, Veronica Brown  
 Human Health and Wellness Initiative Seed Program, Office of Research, Innovation, and Economic Development (ORIED)  
 “Advancing Statistical Learning to Improve Precision Medicine”  
 Oct. 2022–Oct. 2023

Tony Schmitz & Nick Horvath (PI) \$70,000 out of \$350,000  
 Co-PIs: **Anahita Khojandi**, Jamie Coble, Bradley Jared, Ryan Dehoff, Jaydeep Karandikar, Andrzej Nycz, Scott Smith  
 Oak Ridge Institute, University of Tennessee (ORI@UT)  
 Continued funding for “AI-Informed Metrology for Digital Manufacturing”  
 Jan. 2022–Dec. 2022

- Anahita Khojandi (PI)** \$124,837 out of \$124,837  
 Co-PIs: -  
 Science Alliance, University of Tennessee  
 Continued funding for “Dynamic Deep Reinforcement Learning-Bayesian Framework”  
 Jan. 2021–May 2022
- Tony Schmitz & Nick Horvath (PI) \$70,000 out of \$350,000  
 Co-PIs: **Anahita Khojandi**, Jamie Coble, Bradley Jared, Ryan Dehoff, Jaydeep Karandikar, Andrzej Nycz, Scott Smith  
 Oak Ridge Institute, University of Tennessee (ORI@UT)  
 “AI-Informed Metrology for Digital Manufacturing”  
 Jan. 2021–Dec. 2021
- Jon Hathaway (PI) \$9,720 out of \$50,000  
 Co-PIs: **Anahita Khojandi**, Michael Blum  
 Office of Research & Engagement, University of Tennessee  
 “Expanding Horizons: Convergent Research to Transform Urban Watershed Management”  
 Nov. 2020–Dec. 2022
- Anahita Khojandi (PI)** \$11,520 out of \$11,520  
 Co-PIs: -  
 Science Alliance, University of Tennessee  
 College of Engineering Undergraduate Research  
 May 2020–Aug. 2020
- Anahita Khojandi (PI)** \$125,000 out of \$125,000  
 Co-PIs: -  
 Science Alliance, University of Tennessee  
 “Dynamic Deep Reinforcement Learning-Bayesian Framework”  
 Aug. 2019–Dec. 2020
- Anahita Khojandi (PI)** \$19,905 out of \$39,810  
 Co-PIs: Jon Hathaway  
 Institute for a Secure & Sustainable Environment (ISSE), University of Tennessee  
 “Multi-Sensor Data-Driven Inspection/Maintenance of Green Infrastructure”  
 July 2019–June 2021
- Anahita Khojandi (PI)** \$10,818 out of \$50,000  
 Co-PIs: Kelsey Ellis, Jon Hathaway, Xueping Li, Lisa R. Mason  
 Institute for a Secure & Sustainable Environment (ISSE), University of Tennessee  
 “Socially Responsible Storm Water Management in the Face of Climate Change Uncertainty”  
 Aug. 2016–Dec. 2017
- Anahita Khojandi (PI)** \$3,300 out of \$10,000  
 Co-PIs: Oleg Shylo, Nicole McFarlane, Georgia Tourassi  
 Neuroscience Network of East Tennessee (NeuroNet), University of Tennessee  
 “A Path to Large-Scale, Non-Intrusive, Objective Sleep Evaluation: A Wearable Device”  
 Aug. 2016–May 2017
- Anahita Khojandi (PI)** \$5,000 out of \$10,000  
 Co-PIs: Rebecca S. Koszalinski, Xueping Li  
 College of Nursing, University of Tennessee  
 “Evidence-based, Data-driven Predictive Models for Early Detection of Sepsis: A Pilot Study”  
 Apr. 2016–June 2016

**Anahita Khojandi (PI)** \$25,000 out of \$50,000  
 Co-PI: Xueping Li  
 Science Alliance, University of Tennessee  
 “Multi-Method Cognitive Simulators for Urban Dynamics”  
 Jan. 2016–Dec. 2016

**Anahita Khojandi (PI)** \$500  
 Tennessee Teaching and Learning Center, University of Tennessee  
 Teaching for Innovation Grant  
 Academic Year 2016–2017

## TEACHING

Department of Industrial and Systems Engineering, University of Tennessee

- IE 200: Engineering Statistics – Undergraduate level  
 Spring 2016 (28 students – 2.8/5), Spring 2017 (39 students – 3.5/5), Spring 2018 (36 students – 4.5/5), Spring 2019 (35 students – 4.6/5), Spring 2020 (33 students – 4.3/5)
- IE/CBE/ME/MSE/NE 483: Introduction to Reliability Engineering – Undergraduate/graduate level  
 Fall 2015 (132 students – 2.7/5), Fall 2016 (104 students – 4.3/5), Fall 2017 (151 students – 4.1/5),  
 Fall 2018 (134 students – 4.3/5), Fall 2019 (108 students – 3.9/5), Fall 2020 (78 students – 3.8/5),  
 Fall 2021 (99 students – 4.3/5), Fall 2022 (99 students – 4.4/5), Fall 2023 (66 students – 4.2/5)
- IE 465/565: Applied Data Science – Undergraduate/graduate level  
 Spring 2021 (28 students – 4.6/5), Spring 2023 (29 students – 4.4/5), Spring 2024 (25 students)
- DSE 597/697: Special Topics – Data Science for Additive Manufacturing (Data Science/Machine Learning Module) – Graduate level  
 Spring 2021 (8 students)
- IE 607: Stochastic Processes – PhD level  
 Spring 2015 (13 students – 4.5/5), Spring 2017 (11 students – 4.7/5), Spring 2019 (16 students – 4.8/5)
- IE 691: Advanced Topics: Decision Making – PhD level  
 Spring 2020 (5 students – 4.9/5),
- Bootcamp: Artificial Intelligence in Healthcare  
 April 2019
- Workshop: Introduction to Deep Learning  
 May 2016

Department of Industrial Engineering, University of Pittsburgh  
 ENGR-0020: Probability and Statistics for Engineers-I – Undergraduate level  
 Summer 2011 (40 students – 4.1/5)

Society for Medical Decision Making (SMDM), 40th Annual North American Meeting, Montreal, Canada  
 Shortcourse: Using Machine Learning to Predict At-Risk Patients  
 Oct. 2018

Second School of Advanced Studies in Health Technology Assessment, sponsored by Brazilian Ministry of Health, São Paulo, Brazil  
 Workshop: Using Machine Learning with Real World Data  
 Jan. 29–31, 2020



## PROFESSIONAL SOCIETY MEMBERSHIPS

Institute for Operations Research and the Management Sciences (INFORMS) – INFORMS Health Applications Society (HAS), INFORMS Women in OR/MS Forum (WORMS), INFORMS Minority Issues Forum (MIF), IEEE – IEEE Engineering in Medicine and Biology Society (EMBS), Institute of Industrial and Systems Engineers (IISE)

## SERVICE TO THE PROFESSION

### INFORMS Leadership

- *Vice President of Membership and Professional Recognition*, INFORMS, 2024–present
- *Faculty Advisor*, INFORMS Student Chapter at UTK, 2022–present
- *Member*, Pierskalla Award Committee, HAS, INFORMS, 2023
- *Nominee for Vice President of Membership and Professional Recognition*, 2023 Slate for 2024 Board of Directors, INFORMS, 2023
- *Chair*, DEI Committee, INFORMS, 2022, 2023
- *Reviewer*, Ambassador Program, DEI Committee, INFORMS, 2020, 2021, 2022, 2023
- *Judge*, INFORMS Interactive Session Competition, INFORMS Annual Meeting, 2014, 2017, 2021, 2022
- *Cluster Co-Chair*, HAS Track, INFORMS Annual Meeting, 2020, 2022
- *Panelist and Representative of Diversity, Equity and Inclusion (DEI) Committee*, Decision Analysis Society Webinar, March 2022
- *Panelist*, Academic Job Search Panel, INFORMS Annual Meeting, 2021
- *Sponsored Sessions Chair*, Organizing Committee, INFORMS Annual Meeting, 2021
- *Cluster Co-Chair*, HAS Track, INFORMS Healthcare Conference, 2021
- *Member*, Nominating Committee, INFORMS, 2021
- *Sub-Committee Chair*, Ambassador Program, DEI Committee, INFORMS, 2020, 2021
- *Vice Chair*, DEI Committee, INFORMS, 2020, 2021
- *Panelist*, Joint Panel MIF/DEI: Diversity Statements and Beyond, INFORMS Annual Meeting, Seattle, WA, 2019
- *Volume Co-editor*, Editor's Cut, Diversity & Inclusion: Analytics for Social Impact, INFORMS, 2019
- *Celebrity Judge*, INFORMS MIF Annual Student Poster Competition, INFORMS Annual Meeting, 2018, 2019
- *Council Member*, HAS, INFORMS, 2019, 2020
- *Co-Chair*, Job Market Session, HAS, INFORMS Annual Meeting, 2019, 2020
- *Cluster Chair*, Health Analytics, INFORMS Computing Society (ICS) Conference, 2019
- *President*, JFIG, INFORMS, 2018–2019
- *Cluster Chair*, JFIG, INFORMS Annual Meeting, 2018
- *Vice President/President-Elect*, JFIG, INFORMS, 2017–2018
- *Member*, DEI Committee, INFORMS, 2017–2021
- *Panelist*, WORMS Panel: Female Professional Development, INFORMS Annual Meeting, 2017
- *Co-Chair of Arrangements*, Organizing Committee, INFORMS Annual Meeting, 2016
- *Media Coordinator*, JFIG, INFORMS, 2015–2017
- *Session Chair*, INFORMS Annual Meeting, 2011–2022

- *Session Chair*, INFORMS Healthcare, 2013, 2015

#### Other Leadership

- *Member*, IIE Transactions Best Paper Award, 2021
- *Member*, Awards Committee, SMDM, 2021
- *Mentor*, Google Summer of Code, “Deep Learning Model for Sepsis Prediction Using High-Frequency Data,” 2019
- *Session Chair*, IISE Annual Conference & Expo, 2019

#### Editorial Appointments

- Associate Editor, *Optimization Letters*, 2022–present
- Associate Editor, Health Care Department, *IISE Transactions*, Focused Issue on Operations Engineering and Analytics, 2020–present
- Topic Editor, *Frontiers in Aging Neuroscience*, Research Topic: “Advancing the Treatment Landscape in Parkinson’s Disease Using Sensor Technology and Data-Driven Modeling,” 2021–2022

*Ad hoc Referee* for Ambient Intelligence and Humanized Computing; Applied Clinical Informatics; Applied Sciences; Breast Cancer Research; Engineering Economist; European Journal of Operational Research; Health Systems; IEEE Transactions on Intelligent Transportation Systems; IEEE Transactions on Reliability; IIE Transactions; IIE Transactions on Healthcare Systems Engineering; JAMA Network Open; JMIR mHealth and uHealth; Journal of Ambient Intelligence and Humanized Computing; Journal of Global Optimization; Management Science; Nature Machine Intelligence; Omega, The International Journal of Management Science; Operations Research; Optimization Letters; PLOS Digital Health; Proceedings of the ISERC; Production and Operations Management; Wiley

#### Invited Proposal Reviewer

- National Science Foundation (NSF): Operations Engineering (OE), Smart Health and Biomedical Research in the Era of Artificial Intelligence and Advanced Data Science (SCH), Cyber-Physical Systems (CPS), Industry-University Cooperative Research Centers Program (IUCRC), and SBIR/STTR programs;
- Department of Energy (DOE);
- National Institutes of Health (NIH): NHGRI’s Genomic Data Science Analysis, Visualization, and Informatics Lab-Space (AnVIL)

### SERVICE TO THE UNIVERSITY OF TENNESSEE

*Future Mobility Hiring Committee Member*, Tickle College of Engineering, Fall 2023–Spring 2024

*Director of the Reliability and Maintainability Engineering Program*, Spring 2021-Fall 2023

*Reviewer*, GE2 Research Seed Funding, University of Tennessee, Fall 2023

*ScAI Cluster Hiring Committee Member*, College of Arts & Sciences and Tickle College of Engineering, Spring 2023

*ISE Department Head Search Committee Member*, Tickle College of Engineering, Fall 2022

*Member*, Peer-Teaching Evaluation Committee, ISE, Fall 2019, Fall 2021, Spring 2021, Fall 2022

*Member*, Distance PhD Admission Review Committee, ISE, Fall 2022

*Presenter*, Meeting of the External Advisory Council of the Office of Research, Innovation and Economic Development (ORIED), Fall 2022

*Panelist*, Academic Time Management, Junior Faculty Advancement Series (JFAS), Fall 2022

*Faculty Mentor*, Department of Industrial and Systems Engineering (ISE), Spring 2022–present

*Human Health and Wellness Committee Member*, University of Tennessee, Fall 2021

*Steering Committee Member*, Graduate Minor in Neurocomputation, University of Tennessee, Fall 2021-Spring 2022

*ISE Department Review Representative*, Institutional Review Board (IRB), Fall 2020–present

*Reviewer*, Support for Affiliated Research Teams (StART) program, Summer 2021

*TCE Dean Search Committee Member*, Tickle College of Engineering, Spring 2021

*Member*, Tickle College of Engineering Academic and Student Affairs Advisory Board for Women in Engineering, Spring 2021, Fall 2021

*Coordinator*, Women Faculty Group, Tickle College of Engineering, 2020–2021

*Member*, Faculty Affairs Advisory Committee, Tickle College of Engineering, 2020–2021

*Attendee*, WomEngineers Virtual Welcome Event, Tickle College of Engineering, Fall 2020

*Reviewer*, Blavatnik National Awards, University of Tennessee, Fall 2018

*Judge*, Exhibition of Undergraduate Research and Creative Achievement (EURCA), 2017–2021

*WomEngineer's Leadership Council Member*, Tickle College of Engineering, June 2016–Dec. 2020

*Faculty Search Committee Member*, ISE, 2015, 2017

*Undergraduate Scholarship Committee Member*, ISE, 2017, 2018, 2020

*Sophomore Gateway Committee Member*, ISE, 2016–2017

*Panelist*, Women in STEAM Panel, McClung Museum, Oct. 2017

*Seminar Committee Member*, NeuroNET, 2015–2016

*Faculty advisor to*

- Women in Industrial and Systems Engineering (WISE), Aug. 2014–present
- Iranian Student Association of UTK, Oct. 2014–2017, July 2019–present
- INFORMS Student Chapter, Mar. 2022–present