

Curriculum Vitae – Hao Yan
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I. EDUCATION

- Ph.D.** Industrial Engineering, Georgia Institute of Technology, 2017, Minor: Machine Learning
Ph.D. advisors: Dr. Jianjun Shi and Dr. Kamran Paynabar
- M.S.** Statistics, Georgia Institute of Technology, 2015
- M.S.** Computational Science and Engineering, 2016
- B.S.** Economics, Peking University, 2011
- B.S.** Physics, Peking University, 2011

II. Professional Experiences

Arizona State University, Tempe, AZ

Assistant Professor, August 2017 – Present

- Faculty member in the School of Computing, Informatics, and Decision Systems Engineering

Graduate Research Assistant Jan 2012 –Aug 2017

- Lab manager and research assistant in the System Informatics and Control Lab in Georgia Institution of Technology

Teaching Assistant, 2012 – 2014

- Teaching assistant for a graduate-level course in data science and statistics

III. Honors, Awards, And Recognitions

A. NATIONAL SOCIETIES AWARDS/HONORABLE MENTIONS

- A1. Institute of Industrial and Systems Engineers (IISE) Data Analytics and Information Systems (DAIS) Division Teaching Award, 2022
- A2. IISE DAIS Best Track Paper Competition, 2023, for the paper “Interpretation and visualization of distance covariance with the additive decomposition of correlations formula”

- A3. IIE Quality Control & Reliability Engineering (QCRE) Best Track Paper Competition Finalist, 2023, for the paper “Graph-aware Tensor Topic Models for Individualized Passenger Travel Pattern Clustering”
- A4. 16th Institute for Operations Research and the Management Science (INFORMS) Hybrid Workshop on Data Mining and Decision Analytics theoretical track finalist, 2021, for the paper “Tensor Topic Models with Graphs and Their Applications on Individualized Travel Patterns”.
- A5. Institute of Electrical and Electronics Engineers (IEEE) Conference on Automation Science and Engineering (CASE) Best Paper Award, 2020, for the paper “Long-Short Term Spatiotemporal Tensor Prediction for Passenger Flow Profile”. The chosen paper is selected among all papers submitted to IEEE CASE 2020.
- A6. IIE Transactions Best Paper Award with Focus Issue on Quality and Reliability Engineering, 2019 for the paper “Weakly correlated profile monitoring based on sparse multi-channel functional principal component analysis”. The chosen paper is selected from among all publications submitted to IIE Transaction in Year 2019.
- A7. American Society of Quality (ASQ) Brumbaugh Award, 2019, for the paper “Multiple Sensor-Based Monitoring and Anomaly Detection”, *Journal of Quality Technology*. This award has been presented since 1949, is given to “the paper making the *largest single contribution to the development of industrial application of quality control.*” The chosen paper is selected from among publications in the seven journals published by ASQ in a given year.
- A8. IEEE Transactions on Automation Science and Engineering Best Paper Award, for the paper “Generalized Wavelet Shrinkage of Inline Raman Spectroscopy for Quality Monitoring of Continuous Manufacturing of Carbon Nanotube Bucky paper”.
- A9. Best Paper Award in Data Mining Section of INFORMS (2018, Theoretical Track) for the paper “Multiple Tensor-on-Tensor Regression: An Approach for Modeling Processes with Heterogeneous Sources of Data”.
- A10. Best Paper Award in Data Mining Section of INFORMS (2017, Applied Track) for the paper “Dynamic Multivariate Functional Data Modeling via Sparse Subspace Learning,”
- A11. Best Student Paper Award Finalist in Quality, Statistics, and Reliability (QSR) Section of INFORMS, (2016) for the paper “AKMM: Adaptive Sensing for Online Anomaly Detection,”
- A12. Best Paper Award Winner in the QSR Refereed Track of INFORMS for the paper “Real-time Monitoring and Diagnosis of High-Dimensional Data Streams via Spatio-Temporal Smooth Sparse Decomposition,” Oct 2015.
- A13. Best Student Paper Award Winner in the IIE Quality Control and Reliability Engineering (QCRE) division, for the paper “Monitoring and Diagnostics of Streaming Images Via Recursive Smooth-Sparse Decomposition,” May 2015.
- A14. Best Student Paper Award Winner in the Data Mining Section of INFORMS, for the paper “Image Defect Detection via Smooth Sparse Decomposition,” Nov. 2014.

B. AWARDS/HONORABLE MENTIONS FOR ADVISED STUDENTS

- A15. IIE QCRE Best Student Paper Competition finalist, May 2022, for my Ph.D. student **Jiuyun Hu’s** “Tensor Completion for High-dimensional Data with Graph-structured and Weakly-dependent Sample Dimension”.
- A16. 16th INFORMS Hybrid Workshop on Data Mining and Decision Analytics applied track Runner-up (2nd place), Sep 2021, for my Ph.D. student **Dorukhan Sergin’s** paper “Low-rank and Sparse Tensor Decomposition with Ridge Regularized Subspace Clustering for Metro Passenger Flow Modeling”.
- A17. INFORMS QSR Best Referred Paper Award, Oct 2020, for my Ph.D. student **Xinyu Zhao’s** paper “Adaptive Partially-Observed Sequential Change Point Detection with Multiple Failure Modes”.

IV. PUBLICATIONS, INTELLECTUAL PROPERTY, AND PRESENTATIONS

SUMMARY OF PUBLICATIONS AND INTELLECTUAL PROPERTY

Abstracts published in conference proceedings: 39
Invited Book Chapters Submitted / In Preparation: 2
Invited Journal Publications: 1
Refereed Conference Papers: 14
Total Journal Publications (Published, In press, or Accepted): 36
Journal Publications (Published, In press, or Accepted) from ASU: 23
Journal Publications Prior to ASU (All Published): 13
Manuscripts Submitted / In Revision from ASU: 9
Manuscripts in Preparation from ASU to be submitted before 07/01/23: 5

SUMMARY OF PRESENTATIONS

Invited Presentations –
External: 7 Invited
Presentations – ASU Internal: 2
Invited Conference Presentations, including students:
39

LEGEND

(*) Corresponding Author
Bold Font: ASU Ph.D. Student for whom Dr. Yan is the primary advisor
Bold Italic Font: ASU Ph.D. Student for whom Dr. Yan is a co-advisor or has significant mentoring responsibility
Underline Font: ASU Master’s Student for whom Dr. Yan is the primary advisor
(+) Equal Contributions
(~) Presenting author

A. Papers

A1. Published and Accepted Journal Papers

- J1. **Huang, J., Pang, Y.,** Liu, Y., Yan, H. *, 2023, “Posterior Regularized Bayesian Neural Network Incorporating Soft and Hard Knowledge Constraints”, *Knowledge-Based Systems*, pp110043.
- J2. Biehler, M.*, Yan, H., Shi, J., 2023, “ANTLER: Bayesian Nonlinear Tensor Learning and Modeler for Unstructured, Varying-Size Point Cloud Data”, *IEEE on Automation Science and Engineering*, in press
- J3. Guo, J., Yan, H., Zhang, C.*, 2022, “Thompson Sampling based Partially Observable Online Change Detection via Bayesian Spike-Slab Composite Decomposition” *Technometrics*, Vol 65(2), pp179-191. **(Win 2021 INFORMS Data Mining Section Best Paper Competition Finalist)**
- J4. **Zhao, X., Hu, J.,** Mei, Y., Yan, H. *, 2022, “Adaptive Partially-Observed Sequential Change Detection and Isolation”, *Technometrics*, Vol 64(4), pp502-512 **(Win 2020 INFORMS QSR Best Referred Paper Award)**.
- J5. **Hu, J.,** Mei, Y., Holte, S., Yan, H. *, 2022, “Adaptive Resources Allocation CUSUM¹ for Binomial Count Data Monitoring with Application to COVID-19 Hotspot Detection”, *Journal of Applied Statistics*, In Press.
- J6. **Zhao, X.,** Yan, H. *, Hu, Z., Du, D., 2022, “Deep Spatio-temporal Monitoring and Decomposition for Cardiac Electrical Conduction Simulation”, *IISE (Institute of Industrial and Systems Engineers) transactions on Healthcare Systems Engineering*, Vol 12(2), pp150-164.
- J7. **Pang, Y., Zhao X.,** Yan, H., Jueming H., and Liu., Y*, 2022, “Bayesian Spatio-Temporal Graph Transformer Network (B-Star) for Multi-Aircraft Trajectory Prediction”, *Knowledge-Based Systems*, Vol 249, pp108998.

¹ CUSUM stands for “Cumulative Sum”

- J8. Li, Z.*, Yan, H., Zhang, C., Tsung, F., 2022, "Individualized Passenger Travel Pattern Multi-clustering based on Graph Regularized Tensor Latent Dirichlet Allocation", *Data Mining and Knowledge Discovery*, Vol 36 (4), pp1247-1278. **(Win 2021 INFORMS Data Mining and Decision Analytics theoretical track finalist)**
- J9. Li, Y.*, Yan, H., Jin, R. 2022, "Multi-Task Learning with Latent Variation Decomposition for Multivariate Responses in a Manufacturing Network." *IEEE Transactions on Automation Science and Engineering*, Vol 20(1), pp285-295
- J10. Wu, T., Yan, H., Shao, X.*, 2022, "Adaptive Change Point Monitoring for High-Dimensional Data", *Statistical Sinica*, Vol 32, pp1583-1610.
- J11. Zhao, Y., Yan., H., Holte, S., Mei., Y*, 2022, "Rapid Detection of Hot-spots via Tensor Decomposition with Applications to Crime Rate Data", *Journal of Applied Statistics*, Vol 49(7), pp1636-1662.
- J12. Yan, H. *, Grasso, M., Paynabar, K., Colosimo, B. M., 2022, "Real-time detection of clustered events in video-imaging data with applications to additive manufacturing", *IIEE Transactions*, Vol 54(5), pp 464-480.
- J13. Du, J. *, Yan, H., Chang, T., Shi, J., 2021, "A Tensor Voting Based Surface Anomaly Classification Approach by Using 3D Point Cloud Data", *Journal of Manufacturing Science and Engineering*, Vol 144(5).
- J14. **Pang, Y.***, **Zhao X.**, Yan, H., and Liu., Y, 2021, "Data-Driven Trajectory Prediction with Weather Uncertainties: A Bayesian Deep Learning Approach", *Transportation Research Part C*, Vol 130, pp103326.
- J15. Yan, H.* , **Sergin, N.**, Lange, S., Brenneman, W., Ba, S., 2021, "Deep Multistage Multi-Task Learning for Quality Prediction and Diagnostics of Multistage Manufacturing Systems.", *Journal of Quality Technology*, Vol 53(5), pp526-544.
- J16. **Sergin, N.**, Yan, H.* , 2021, "Toward a better monitoring statistic for profile monitoring via variational autoencoders", *Journal of Quality Technology*, Vol 53(5), pp454-473.
- J17. Lahoti, G.* , Chen, J., Yue, X., Yan, H., Ranjan, C., Qian, Z., Zhang, C., Wang, B., 2021, "Image Decomposition-based Sparse Extreme Pixel-level Feature Detection with Application to Medical Images", *IIEE Transactions on Healthcare Systems Engineering*, Vol 11(4), pp338-354.
- J18. Fang, X.* , Yan, H., Gebrael, N., & Paynabar, K., 2021, "Multi-Sensor Prognostics Modeling for Applications with Highly Incomplete Signals", *IIEE Transactions*, Vol 53 (5) pp597-613.
- J19. Zheng, Z., Yan, H., Setzer, F., Shi, K., Mei., M., Li, J.* , 2020, "Anatomically Constrained Deep Learning for Automating Dental CBCT² Segmentation and Lesion Detection", *IEEE Transactions on Automation Science and Engineering*, 18(2), pp603-614.
- J20. Li, Z.* , Yan, H., Chen, Z., Tsung, F., 2020, "Long-Short Term Spatiotemporal Tensor Prediction for Passenger Flow Profile", *IEEE Robotics and Automation Letters*, 5(4), pp5010-5017. **(Win 2020 IEEE CASE Best Paper Award)**
- J21. Setzer, F.* , Shi, K., Zheng, Z., Li., J., Yan, H., Yoon, H., Mei., M., Li, J., 2020, "Artificial Intelligence for the computer-aided detection of apical periodontitis in CBCT images", *Journal of Endodontics*, Vol 46(7), pp 987-993.
- J22. Gahrooei, M. R.* , Yan, H., Paynabar, K., Shi, J., 2020, Multiple Tensor-on-Tensor Regression: An Approach for Modeling Processes With Heterogeneous Sources of Data, *Technometrics*, Vol 63(2), pp 147-159.
- J23. Kang, Y., Yan, H., and Ju, F.* , 2020, "Performance Evaluation of Production Systems Using Real-Time Machine Degradation Signals", *IEEE Transactions on Automation Science and Engineering*, Vol 17(1), pp 273–283.
- J24. Zhang, C.* , Yan, H., Shi, J., 2020, "Dynamic Multivariate Functional Data Modeling via Sparse Subspace Learning", *Technometrics*, Vol 63(3), pp 370-383. **(Win the Applied Track Best Paper Award in the Data Mining Section of INFORMS)**
- J25. Reisi Gahrooei, M., Yan, H., and Paynabar, K.* , 2020, "Comments on: On Active Learning Methods for Manifold Data"s, *TEST*, Vol 29(1), pp38–41.

² CBCT stands for Cone-beam computed tomography systems

- J26. Yan, H., Paynabar, K.*, Shi, J., 2019, "AKM2D: An Adaptive Framework for Online Sensing And Anomaly Detection", *IISE Transactions*, Vol 52(9), pp 1032-1046. (This paper is one of the four finalists of Best Student Paper Award in the Quality, Statistics, and Reliability Section of INFORMS).
- J27. Yan, H., Pacella, M., Paynabar, K.*, 2019, "Structured Point Cloud Data Modeling via Regularized Tensor Decomposition and Regression", *Technometrics*, Vol. 61(3), pp 385-395.
- J28. Zhang, C., Yan, H., Shi, J.*, 2018, "Weakly correlated profile monitoring based on sparse multi-channel functional principal component analysis", *IISE Transactions*, Vol 50(10), pp 878-891.
- J29. Yan, H., Paynabar, K.*, Shi, J., 2018, "Real-time Monitoring of High-Dimensional Functional Data Streams via Spatio-Temporal Smooth Sparse Decomposition", *Technometrics*, Vol. 60(2), pp181-197. (**Win Best Paper Award in the QSR Refereed Track of INFORMS 2015 and Best Student Paper Award in the Industrial and Systems Engineering Research Conference 2015**).
- J30. Zhang, C., Yan, H., Shi, J.*, 2018, "Multiple Sensor-Based Monitoring and Anomaly Detection", *Journal of Quality Technology*, Vol 50(4), pp344-362.
- J31. Yue, X., Wang, K., Yan, H., Zhang, C., Liang, R., Shi, J.*, 2017, "Generalized Wavelet Shrinkage of in-line Raman Spectroscopy for Quality Monitoring of Continuous Nano-manufacturing for Carbon Nanotube Buckypaper", *IEEE Transactions on Automation Science and Engineering*, Vol. 14(1), pp196-207.
- J32. Yue, X., Yan, H., Liang, R., Shi, J.*, 2017, "A Wavelet-based Penalized Mixed-effects Model for Multichannel Profile Detection of In-line Raman Spectroscopy", *IEEE Transactions on Automation Science and Engineering*, Vol. 15(3), pp1258-1271.
- J33. Yan, H., Paynabar, K.*, Shi, J., 2017, "Anomaly Detection in Images with Smooth Background Via Smooth-Sparse Decomposition", *Technometrics*, Vol. 59(1) pp102-114. (**Win Best Student Paper Award in Data Mining Section of INFORMS 2014**)
- J34. Yan, H., Liu, K., Zhang, X., Shi, J.*, 2016, "Multiple Sensor Data Fusion in Degradation Modeling Under Different Operational Conditions", *IEEE Transactions on Reliability*, Vol. 65(3), pp1416-1426.
- J35. Mesnil, O., Yan, H., Ruzzene, M., Paynabar, K., Shi, J. †, 2016, "Fast wavenumber measurement for accurate and automatic location and quantification of defect in composite", *Structural Health Monitoring*, Vol. 15(2), pp223-234.
- J36. Yan, H., Paynabar, K*, Shi, J., 2015, "Image-based Process Monitoring using Low-rank Tensor Decomposition", *IEEE Transactions on Automation Science and Engineering*, Vol. 12(1), pp216-227.

A2. Papers Submitted/In Revision

- J37. **Sergin, N., Huang, J.**, Yan, H.*, "Detecting Novel Faults with Deep Neural Network-based Fault Classifiers using Hierarchical Labels", *in 2nd revision in IISE Transaction*.
- J38. Guo, J, Yan, H., Zhang, C. *, "Thompson Sampling based Partially Observable Online Change Detection for Exponential Families", *in 1st revision in INFORMS on Journal Data Science*.
- J39. **Sergin, N., Hu, J.**, Li, Z., Zhang, C., Tsung, F., Yan, H.*, "Low-Rank Robust Subspace Tensor Clustering for Metro Passenger Flow Modeling", *in 1st revision in INFORMS on Journal Data Science*.
- J40. **Zhao, X.**, Yan, H., Liu Y., "Hierarchical Multi-label Classification for Fine-level Event Extraction from Aviation Accident Reports", *in 1st revision in INFORMS on Journal Data Science*.
- J41. Zhang, Q., Yan, H., Liu Y., "Power Generation Forecasting for P.V. Solar Plants Based on Dynamic Bayesian Networks by Fusing Multi-source Information", *submitted to Energy*.
- J42. Kang, Y., **Zhao, X.**, Feng, J., Yan, H.*, "Optimizing Multiple Condition Policy based on Real-time Degradation Signals via Model-based Reinforcement Learning", *submitted to IEEE Transaction on Reliability*
- J43. **Zhao, X.**, Yan, H. *, Liu Y., "Aviation Event Hierarchical Embedding for Event Prediction and Risk Quantification", *submitted to Transportation Research Interdisciplinary Perspectives*.
- J44. **Zhao, X.**, Yan, H. *, Liu Y., "Event Extraction for Aviation Accident Report based on BERT-based Multi-label Classification", *submitted to IEEE Access*.
- J45. Li, Z. *, Yan, H., Zhang, C., Tsung, F., "Choose A Table: Tensor Dirichlet Process Multinomial Mixture Model with Graphs for Passenger Trajectory Clustering", *submitted to Transportation Research Part C*.

- J46. **Hu, J.**, Yan, H.* , Li, Z., Zhang C., “Tensor Completion for High-dimensional Data with Graph-structured and Weakly-dependent Sample Dimension”, *submitted to IEEE Transactions on Automation Science and Engineering*

A3. Papers In Preparation and Ready to Submit

- J47. Setzer, F.* , **Huang, J.**, Li, J., Yan, H., Mei., M., Li, J., “Active Learning for multi-segmentation for CBCT imaging”, *to be submitted to Journal of Endodontics*
- J48. **Hu, J.**, Yan, H.* , Kontar, R., “Personalized Tucker Decomposition”, *to be submitted to Technometrics.*
- J49. **Yang, S.**, Yan, H. * , Liu Y., “Sequential Optimization for Dynamic Causal Networks”, *to be submitted to IISE Transaction.*
- J50. **Huang, J.**, Yan, H.* , Liu Y., “Dynamic Bayesian Neural Network Combining Both Aleatoric and Epistemic Constraints”, *to be submitted to IISE Transaction.*
- J51. Wang, A.* , Yan, H., Du, J., “Interpretation and visualization of distance covariance with additive decomposition of correlations formula” *to be submitted to Technometrics*

A4. Referred Conference Publication or Symposium Proceedings

- C1. **Zhao, X.~**, Yan, H.* , Liu, Y., 2022, “Event Extraction for aviation accident reports through attention-based multi-label classification”, In AIAA AVIATION 2022 Forum, pp 3831.
- C2. Wang, B.~, Tsung F., **Yan, H.**, 2022, “Attention-based Representation Learning for Time Series with Principal and Residual Space Monitoring”, In IEEE 18th International Conference on Automation Science and Engineering (CASE), pp1833 - 1839
- C3. **Zhao, X.~**, Yan, H.* , Liu, Y., 2021, “Hierarchical Tree-based Sequential Event Prediction with Application in the Aviation Accident Report”, In 2021 IEEE 37th International Conference on Data Engineering (ICDE), pp1925-1930.
- C4. **Huang, J.~**, Yan, H.* , Li, J., Stewart, H. M., & Setzer, F, 2021, “Combining Anatomical Constraints and Deep learning for 3-D CBCT Dental Image Multi-label Segmentation”, In 2021 IEEE 37th International Conference on Data Engineering (ICDE), pp2750-2755.
- C5. Li, Z. *~, **Sergin, N.**, Yan, H., Zhang, C., Tsung, F., 2020, “Tensor Completion for Weakly-dependent Data on Graph for Metro Passenger Flow Prediction”, *Thirty-Fourth AAAI Conference on Artificial Intelligence*, Vol 34(4).
- C6. **Huang, J.~**, **Sergin, N.**, Dua, A., Tavakoli., EB, Yan, H.* , Ren, F., & Ju, F., 2020, “Edge Computing Accelerated Defect Classification Based on Deep Convolutional Neural Network With Application in Rolling Image Inspection.” *Proceedings of the ASME 2020 15th International Manufacturing Science and Engineering Conference. Vol 84263*, pp V002T07A037.
- C7. Yan, H.* , **Yeh, H.**, and **Sergin, N.~**, 2019, “Image-based Process Monitoring via Adversarial Autoencoder with Applications to Rolling Defect Detection”, *IEEE 15th International Conference on Automation Science and Engineering (CASE)*, pp311-316.
- C8. Yan, H.* , **Zhao, X.~**, Hu, Z., Du, D., 2019, “Physics-based Deep Spatio-temporal Metamodeling for Cardiac Electrical Conduction Simulation”, *IEEE 15th International Conference on Automation Science and Engineering (CASE)*, pp152-157.
- C9. **Zhao, X.~**, Yan, H.* , Li, J., Pang, Y., Liu, Y., 2019, “Spatio-temporal Anomaly Detection, Diagnostics, and Prediction of the Air-traffic Trajectory Deviation using the Convective Weather”, *Annual Conference of the Prognostics and Health Management Society (PHM)*, Vol 11.
- C10. **Zhao, X.~**, Kang, Y., Yan, H.* , Feng, J., 2019, “Semi-supervised Constrained Hidden Markov Model Using Multiple Sensors for Remaining Useful Life Prediction and Optimal Predictive Maintenance” *Annual Conference of the Prognostics and Health Management Society (PHM)*, Vol 11(1).
- C11. Zhao, Y.~, Yan, H.* , Holte, S., Mei., Y*, 2019, “Rapid Detection of Hot-spot by Tensor Decomposition on Space and Circular Time with Application to weekly Gonorrhoea data”, *The XIIIth International Workshop on Intelligent Statistical Quality Control, Hong Kong.*

- C12. Mesnil, O.*~, Yan, H., Ruzzene, M., Paynabar, K., Shi, J., 2015, "Guided Wavefield Reconstruction from Sparse Measurements Using Compressed Sensing", *International Workshop on Structural Health Monitoring*, Sep 2015, Stanford, United States.
- C13. Mesnil, O.*~, Yan, H., Ruzzene, M., Paynabar, K., Shi, J., 2014, "Frequency Domain Instantaneous Wavenumber Estimation for Damage Quantification in Layered Plate Structures", *EWSHM - 7th European Workshop on Structural Health Monitoring*, Jul 2014, Nantes, France.
- C14. Kang, Y.~, Yan, H., Ju, F. *, 2018, "Real-time production performance analysis using machine degradation signals: a two-machine case", *IEEE 14th International Conference on Automation Science and Engineering (CASE)*.

B. INVITED TALKS

B1. Invited Seminars

- T1. University of Cologne, Cologne Institute for Information Systems Research Seminar Series, "Knowledge-constrained learning and anomaly detection based on high-dimensional data", Nov 2022
- T2. Gates Foundation Seminar, "Sequential Hotspot Detection in Spatio-temporal Systems", Oct 2022
- T3. Ebay Seminar Series, "Modern High-dimensional Anomaly Detection", March 2022
- T4. University of Cologne, "Knowledge-constrained Deep Learning", April 2022
- T5. Fred Hutchinson Cancer Research Center Seminar, "Sequential Hotspot detection in the Spatio-temporal Systems", April 2021
- T6. Chinese Academy of Science Quality and Data Science Center Seminar Series in Academy of Mathematics and System Science, "Knowledge-infused Deep Learning for High-dimensional Data Monitoring and Modeling", Jan 2021,
- T7. ASU 1st Machine Learning Day, West Campus, "Exploiting the Structure of High-Dimensional Data for Anomaly Detection", Arizona State University, Mar 2019.
- T8. ASU Statistics Department, "Exploiting the Structure of High-Dimensional Data for Anomaly Detection", Arizona State University, Sep 2018,
- T9. Virginia Tech INFORMS Student Chapter Seminar Series, "Exploiting the Structure of High-Dimensional Data for Anomaly Detection", Apr 2018, Blacksburg, VA

B2. Invited Conference Presentation

- T1. Institute for Operations Research and the Management Science (INFORMS) Conference, "Adaptive Sampling and Anomaly Detection for High-dimensional Data with Partial Knowledge on Anomaly Patterns", Oct 2022, Indianapolis, IN
- T2. International Chinese Statistical Association (ICSA) Applied Statistics Symposium, "Multi-clustering Individualized Passenger Travel Pattern Multi-Clustering based on Tensor Latent Dirichlet Allocation with Graph Structure", June 2022, Gainesville, FL
- T3. Institute of Industrial and Systems Engineers (IISE) Annual Conference, "Choose A Table: Tensor Dirichlet Process Multinomial Mixture Model with Graphs for Passenger Trajectory Clustering", May 2022, Seattle, WA
- T4. IISE Annual Conference, "Tensor Decomposition and Completion for weakly-dependent data on graph", May 2022, Seattle, WA
- T5. INFORMS Conference, "Deep Multistage Multitask Learning for Quality Prediction Of Multistage Manufacturing Systems", Oct. 2021, Anaheim, CA
- T6. ICSA Applied Statistics Symposium, "High-dimensional Anomaly Detection in the Complex Spatio-temporal Systems", 2021, Virtual
- T7. European Network for Business and Industrial Statistics (ENBIS), "Deep Multistage Multi-Task Learning for Quality Prediction and Diagnostics of Multistage Manufacturing Systems", 2021
- T8. INFORMS Conference, "Physics-based Deep Spatio-temporal Metamodeling for Cardiac Electrical Conduction Simulation", Nov 2020, Virtual

- T9. INFORMS Conference, “Anomaly Detection in Deep Spatio-temporal Metamodeling For Cardiac Electrical Conduction Simulation”, Oct 2019, Seattle, WA
- T10. NSF Annual P.I. Meeting for Algorithm for Threat Detection, “Adaptive and Rapid Spatial-Temporal Threat Detection Over Networks”, Nov 2018, Washington, DC
- T11. IISE Annual Conference, “Spatio-Temporal Analysis of Video-Imaging Data for Hot-spot Detection in Metal Additive Manufacturing”, May 2019, Orlando, FL
- T12. INFORMS Conference, “A Multitask Learning Based Decomposition Approach for Modeling Distributed Machines”, Nov 2018, Phoenix, AZ
- T13. INFORMS Conference, “A Wavelet-based Penalized Mixed-effects Model for Multichannel Profile Detection of In-line Raman Spectroscopy”, Nov 2018, Phoenix, AZ
- T14. INFORMS Conference, “Nonlinear Profile Monitoring via Variational Autoencoder”, Nov 2018, Phoenix, AZ
- T15. INFORMS Conference, “Real-time Anomaly Detection for Spatial-temporal Correlated Profile”, Nov 2018, Phoenix, AZ
- T16. INFORMS Conference, “Structured Point Cloud Data Modeling Via Regularized Tensor Decomposition and Regression”, Nov. 2017, Houston, TN.
- T17. INFORMS Conference, “Unsupervised High-dimensional Profile Monitoring and Anomaly Detection via Variational Autoencoder”, Nov. 2017, Houston, TN.
- T18. INFORMS Conference, “Online Adaptive Sampling and Estimation for Clustered Anomaly Detection”, Nov. 2016, Nashville, TN.
- T19. INFORMS Conference, “Structured Point Cloud Data Modeling Via Regularized Tensor Decomposition and Regression”, Nov. 2016, Nashville, TN.
- T20. INFORMS Conference, “Real-time Monitoring and Diagnosis of High-Dimensional Data Streams via Spatio-Temporal Smooth Sparse Decomposition” , Nov. 2015, Philadelphia, PA
- T21. QPRC, “Monitoring and Diagnosis of High-Dimensional Data Streams via Recursive Smooth-Sparse Decomposition”, June. 2015, Raleigh, NC
- T22. ISERC, “Monitor and diagnostics of streaming images via recursive smooth-sparse decomposition”, May. 2015, Nashville, TN
- T23. INFORMS Conference, “Image Defect Detection via Smooth-Sparse Decomposition”, Nov. 2014, San Francisco, CA
- T24. INFORMS Conference, “Multiple sensor data fusion in degradation modeling under different operation conditions”, Nov. 2014, San Francisco, CA
- T25. INFORMS Conference, “Image-based process monitoring and defect detection via smooth-sparse decomposition”, Nov. 2014, San Francisco, CA
- T26. INFORMS Conference, “Image-based process monitoring using low-rank tensor decomposition”, Oct. 2013, Minneapolis, MN

B3. Invited Conference Presentation by my Ph.D. students

- T27. INFORMS Conference, **Xinyu Zhao**, “Aviation Event Hierarchical Embedding for Event Prediction and Risk Quantification”, Oct 2022, Indianapolis, IN
- T28. INFORMS Conference, **Jiuyun Hu**, “Tensor Completion for High-dimensional Data with Graph-structured and Weakly-dependent Sample Dimension”, Oct 2022, Indianapolis, IN
- T29. INFORMS Conference, **Jiayu Huang**, “Knowledge-constrained Machine Learning for Modeling and Prediction of Complex Systems”, Oct 2022, Indianapolis, IN
- T30. INFORMS Conference, **Xinyu Zhao**, “Adaptive Partially-observed Sequential Change Point Detection For Covid-19 Hotspots Detection”, Oct. 2021, Anaheim, CA
- T31. INFORMS Conference, **Jiuyun Hu**, “Public Transportation Analysis Via Tensor Decomposition And Spectral Clustering”, Oct. 2021, Anaheim, CA

- T32. INFORMS Conference, **Jiayu Huang**, “Knowledge-constrained Bayesian Neural Networks”, Oct. 2021, Anaheim, CA
- T33. INFORMS Conference, **Jiayu Huang**, “Multi-label Classification For Aviation Accident Reports”, Oct. 2021, Anaheim, CA
- T34. INFORMS Conference, **Xinyu Zhao**, “Adaptive Partially-Observed Sequential Change Point Detection with Multiple Failure Modes”, Nov. 2020, Virtual
- T35. INFORMS Conference. **Xinyu Zhao**, “Aviation Failure Event Prediction with Hierarchical Embedding”, 2020
- T36. INFORMS Conference, **Xinyu Zhao**, “A Multi-armed Bandit Approach For Rapid Change Detection Of High-dimensional Data With Multiple Failure Patterns”, Nov 2020, Virtual
- T37. IEEE 15th International Conference on Automation Science and Engineering, **Durokhan Sergin**, “Image-based Process Monitoring via Adversarial Autoencoder with Applications to Rolling Defect Detection”, 2019
- T38. Annual Conference of the Prognostics and Health Management Society (PHM) 2019, **Xinyu Zhao**, “Spatio-temporal Anomaly Detection, Diagnostics, and Prediction of the Air-traffic Trajectory Deviation using the Convective Weather”
- T39. Annual Conference of the Prognostics and Health Management Society (PHM) 2019, **Xinyu Zhao**, “Semi-supervised Constrained Hidden Markov Model Using Multiple Sensors for Remaining Useful Life Prediction and Optimal Predictive Maintenance”

V. PROFESSIONAL ACTIVITIES AND SERVICE

SUMMARY OF PROFESSIONAL ACTIVITIES AND SERVICE

Associate Editor for 1 peer-reviewed journals
 1 International/national conferences committees
 17 International/national conferences sessions organized
 18 International/national conference sessions
 Peer Reviewer for 23 Journals
 Proposal Review Service for 1 Funding Agencies
 2 Engineering School-level Committees
 10 Unit-level Committees.
 3 Program-level leadership

A. Professional Contributions and Training

A1. Editor or Associated Editors Role

- 2021 – present IISE Transaction Associate Editors

A2. Reviewer for Journals and Conferences Proceedings

1.	2018 - Present	IISE Transaction	47 times
2.	2018 - Present	IEEE Transactions on Automation Science and Engineering	31 times
3.	2019 - Present	Technometrics	18 times
4.	2018 - Present	Journal of Quality Technology	6 times
5.	2019 - Present	Journal of Intelligent Manufacturing	6 times
6.	2021 - Present	Journal of Endodontics	8 times
7.	2018 - Present	IEEE International Conference on Automation Science and Engineering	3 times
8.	2018 - Present	IEEE Robotics and Automation Letters	3 times
9.	2021 - Present	Journal of Applied Statistics	3 times

10. 2018 - Present	Journal of Simulation	2 times
11. 2020 - Present	Journal of Machine Learning Research	2 times
12. 2021 - Present	Electronics	2 times
13. 2017 - Present	Journal of Industrial and Production Engineering	2 times
14. 2018 - Present	Statistical Sinica	1 time
15. 2018 - Present	IEEE Transactions on Industrial Electronics	1 time
16. 2018 - Present	Quality and Reliability Engineering International	1 time
17. 2019 - Present	Manufacturing Letters	1 time
18. 2020 - Present	Information	1 time
19. 2020 - Present	IEEE Transactions on Signal Processing	1 time
20. 2020 - Present	Additive Manufacturing	1 time
21. 2020 - Present	IEEE Transactions on Knowledge and Data Engineering	1 time
22. 2020 - Present	IEEE Transactions on Intelligent Transportation Systems	1 time
23. 2022 - Present	Computers & Industrial Engineering	1 time

A3. Conference Reviewing

- PHM Conference
- IEEE CASE Conference
- IEEE RA-L

A4. Review for Best Paper Competition

- INFORMS, Data Mining Best Student Paper Competition, 2015 (5 times)
- INFORMS, Data Mining Best Paper Competition, 2022 (3 times)
- INFORMS, QSR Best Paper Competition, 2021 (4 times)
- IISE, QCRE Best Track Paper Competition, 2021 (3 times)
- IISE, DAIS division's Best Student Paper Competition, 2019 (4 times)

A5. Conference Organization

1. Chair and Organize "QSR Student Introduction and Interaction Session", INFORMS Annual Meeting 2022, Indianapolis, IN
2. Chair and Organize "QSR Student Poster Competition", INFORMS Annual Meeting 2022, Indianapolis, IN
3. Chair and organizer of a session on "High-dimensional Data Analytics for Modeling, Monitoring, and Control", INFORMS Annual Meeting 2022, Indianapolis, IN
4. Chair and organizer of a session on "Spatio-temporal Analysis for System Modeling and Anomaly Detection", IISE Annual Conference 2022, Seattle, WA
5. Chair and organizer of a session on "Data-driven Smart Transportation", INFORMS Annual Meeting 2021, Anaheim, CA
6. Chair and organizer of a session on "Advanced Machine Learning Techniques in Manufacturing Systems", INFORMS Annual Meeting 2021, Anaheim, CA
7. Chair and organizer of a session on "Modern Analysis of Spatio-temporal Data", INFORMS Virtual Annual Meeting 2020
8. Chair and organizer of a session on "High-dimensional data analytics in system monitoring and modeling", INFORMS Virtual Annual Meeting 2020
9. Chair and organizer of a session on "Spatio-temporal Data Analytics", INFORMS Annual Meeting, Seattle, 2019

10. Chair and organizer of a session on “Spatio-temporal Data Analytics”, IISE Annual Meeting, Seattle, 2019
11. Chair and organizer of a session on “Machine Learning for Manufacturing Informatics”, INFORMS Annual Meeting, Phoenix, 2018
12. Chair and organizer of a session on “High-Dimensional Functional Data Analysis”, INFORMS Annual Meeting, Phoenix, 2018
13. Organizer of Workshop of Quality, Statistics and Reliability 20th year anniversary workshop, 2018
14. Special Session Organizer on “Real-Time Modeling, Monitoring, and Control of Advanced Manufacturing Systems” at the 14th IEEE International Conference on Automation Science and Engineering 2018
15. Chair and organizer of a session on “Machine Learning for Manufacturing Informatics”, INFORMS Annual Meeting, Houston, 2017
16. Chair and organizer of a session on “High-Dimensional Functional Data Analysis”, INFORMS Annual Meeting, Houston, 2017
17. Chair and organizer of a session on “High-Dimensional Functional Data Analysis”, INFORMS Annual Meeting, Nashville, 2016

A6. Service to the Professional Organization:

1. Council Member, INFORMS QSR, 2022 – 2024
2. Organizing committee, 1st ICQSR conference
3. Chair, “INFORMS QSR Public Communication Committee”, 2022 - 2024
4. Student Introduction & Interaction Session committee, INFORMS QSR, 2022
5. Public Communication Subcommittees, INFORMS QSR, 2022-now
6. Membership growth program committee, INFORMS QSR, 2019-2020
7. Panel Reviewer for Department of Energy SBIR/STTR Program, 2022
8. Panel Reviewer for Department of Energy NEUP Program, 2022
9. Panel Reviewer for Department of Energy SETO Program, 2020
10. Quality, Statistics, and Reliability 1st workshop, INFORMS 2021
11. Quality, Statistics, and Reliability 20th-year anniversary workshop, with more than 100 participants from around the world.

A7. Professional Training

- 34th National Effective Teaching Institute Training Workshop, January 3-5, 2018, San Diego, CA
- ASU Career Proposal Workshop, 2019

A8. University and Department Service at Arizona State University

- | | |
|--------------------------------------------------------------------------|---------------------------|
| • Data Science, Analytics, and Engineering MS Graduate Program Committee | Spring 2023 – Spring 2024 |
| • Data Science, Analytics, and Engineering Graduate Admission Committee | Spring 2023 – Spring 2024 |
| • Industrial Engineering Seminar Organizer | Spring 2022 – Spring 2023 |
| • Data Science, Analytics, and Engineering Graduate Program Committee, | Fall 2022 – Fall 2024 |
| • Tenure Track Faculty Search Committee, | Fall 2022 – Fall 2023 |
| • Industrial Engineering Seminar Organizer | Fall 2022 – Fall 2023 |
| • Industrial Engineering Graduate Program Committee | Fall 2021 – Fall 2022 |
| • Industrial Engineering Undergraduate Program Committee | Fall 2020 – Fall 2021 |
| • Industrial Engineering Graduate Program Committee | Fall 2019 – Fall 2020 |
| • Tenure Track Faculty Search Committee | Fall 2020– Fall 2021 |
| • Industrial Engineering Undergraduate Program Committee | Fall 2017 – Fall 2018 |
| • Industrial Engineering Seminar Organizer | Spring 2018 – Spring 2019 |

VI. PERSONNEL: STUDENT SUPERVISION / MENTORING, TEACHING, DISSERTATION COMMITTEES, RESEARCHERS, AND OUTREACH

SUMMARY OF MENTORING (including co-mentored personnel):

Ph.D. Students Graduated: 2
Ph.D. Students Current: 4
M.S. Thesis Students Graduated: 3
M.S. Project Students Graduated: 3
M.S. Project Students Current: 2
Undergraduate Students (Research): 1
Student Fellowships and Awards: 4

SUMMARY OF TEACHING:

Undergraduate Courses Taught, including New Course Development: 1
Graduate Courses Taught, including New Course Development: 4
Average Teaching Evaluation Score for Undergraduate Courses taught at ASU:
3.5
Average Teaching Evaluation Score for Graduate Courses taught at ASU: 4.2

A. Teaching Activities

A1. Course Taught

- Instructor, IEE 577/CSE 598/IEE598 Data Science for System Decision Analytics, Spring 2018, Spring 2020, Spring 2021, Spring 2022
 - I developed IEE 598 “Data Science for System Informatics”, for graduate students, which combines knowledge in data science, programming, large-scale optimization, and decision making for system informatics. Some of the topics include how to handle large datasets in optimization and how to interpret the results by data mining algorithms.
 - The developed course has been evaluated by IISE DAIS committee and won *IISE Data Analytics and Information Systems (DAIS) Division Teaching Award*.
- Instructor, IEE 605 Foundation of Information Systems: Spring 2019, Spring 2021
 - “IEE 605 Foundation of Information Systems” with many modern advanced data mining algorithms, such as expectation-maximization, probabilistic graphical models, and large-scale optimization.
- Instructor, IEE 474 Quality Control, Fall 2021, Fall 2020, Fall 2019
- Instructor, IEE 572 Design and Analysis of Engineering Experiment, Fall 2017, Fall 2018

A2. Course Evaluation

Course	Semester	# Student	Instructure Evaluation	Course Evaluation
• IEE 577 Data Science for System Decision Analytics	Spring 2023	75 students	4.07/5	4.24/5
• IEE 474 Quality Control	Fall 2022	54 students	3.17/5	3.37/5
• CSE 598 Data Science for System Decision Analytics	Spring 2022	30 students	4.45/5	4.55/5
• IEE 577 Data Science for System Decision Analytics	Spring 2022	72 students	4.52/5	4.54/5
• IEE 474 Quality Control	Fall 2021	44 students	3.96/5	3.91/5
• IEE 577 Data Science for System Decision Analytics	Spring 2021	45 students	4.37/5	4.45/5
• IEE 605 Foundation of Information Systems	Spring 2021	13 students	4.09/5	4.21/5
• IEE 474 Quality Control	Fall 2020	74 students	3.96/5	3.63/5

• IEE 577 Data Science for System Decision Analytics	Spring 2020	41 students	4.35/5	4.29/5
• IEE 474 Quality Control	Fall 2019	72 students	2.83/5	2.89/5
• IEE 605 Foundation of Information Systems	Spring 2019	30 students	4.02/5	4.31/5
• IEE 572 Design and Analysis of Engineer Experiments	Fall 2018	60 students	4.09/5	4.3/5
• IEE 598 Data Science for System Informatics	Spring 2018	69 students	4.43/5	4.62/5
• IEE 572 Design and Analysis of Engineer Experiments	Fall 2017	106 students	3.76/5	3.72/5

A3. Course Module development

- Co-develop an online short course, “A.I. for Air Traffic Safety Enhancement”, Starting Feb 7, 2023
 - The course module is developed as a product of the NASA ULI Project and distributed on the American Institute of Aeronautics and Astronautics website (aiaa.org). The Member Price is \$895 USD.
 - My part of the course module involves a class on how to develop natural language processing (NLP) techniques to analyze the aviation accident report for accident event extraction and risk quantification.
- Georgia Tech, ISYE 7204, “Informatics in Production and Service System”, Fall 2016, **Guest Lecturer**, developed and lectured a 10-lecture module on high-dimensional data analytics and parallel processing (including lectures, homework, lab, and exams) for a Ph.D. level course: ISYE 7204 Fall 2016, Georgia Institute of Technology.
- Georgia Tech, ISYE 7204, “Informatics in Production and Service System”, Fall 2014, **Guest Lecturer**, developed and lectured an 8-lecture module on High-dimensional Statistics (including lectures, homework, lab, and exams) for a Ph.D. level course

B. Mentoring Activities

B1. Ph.D. Students

1. Nurettin Dorukhan Sergin, Industrial Engineering, School of Computing and Augmented Intelligence, Graduated
 - Thesis: “Outlier-Aware Applications in High-Dimensional Industrial Systems”, 2017 Fall – 2021 Summer
 - Graduation Date: 07/2021
 - Current Position: Meta
 - Award: Best Paper Competition Finalist in 16th INFORMS Hybrid Workshop on Data Mining, and Decision Analytics applied track finalist, 2021, for the paper “Low-rank and Sparse Tensor Decomposition with Ridge Regularized Subspace Clustering for Metro Passenger Flow Modeling”.
2. Xinyu Zhao, Industrial Engineering, SCAI, 2018 Fall – 2022 Summer, Graduated
 - Thesis: “Sequential Failure Event Modeling and Prediction in Aviation Accident Analysis”
 - Graduation Date: 07/2022
 - Current Position: Zillow
 - Award: QSR Best Referred Paper Award, 2020, for the paper “Adaptive Partially-Observed Sequential Change Point Detection with Multiple Failure Modes”.
3. Jiuyun Hu, Industrial Engineering program, 2020 Spring – present (funded research assistant)
 - Tentative Thesis: “Tensor-based Spatio-temporal Analysis”
 - Award: IISE QCRE Best Student Paper Competition finalist for the paper “Tensor Completion for High-dimensional Data with Graph-structured and Weakly-dependent Sample Dimension”
 - Expected Graduation: 07/2024

4. Jiayu Huang, Industrial Engineering program, SCAI, 2020 Fall – present (funded research assistant)
 - Tentative Thesis: “Knowledge-driven Bayesian Neural Network”
 - Expected Graduation Date: 07/2024
5. Shuai Feng, Industrial Engineering program, SCAI, 2022 Fall – present (funded research assistant)
 - Tentative Thesis: “Structural Learning in High-dimensional data”
 - Expected Graduation Date: 07/2027
6. Siqin Yang, Data Science, Analytics, and Engineering program, 2022 Fall – present (funded research assistant)
 - Tentative Thesis: “Uncertainty Quantification for Sequential Statistical Models”
 - Expected Graduation Date: 07/2027

B2. M. S. Theses Chaired and Co-chaired

1. David Yeh, Chair, Master student in SCAI, 2017 – 2019, Graduated
 - Thesis: “Image-based Process Monitoring via Generative Adversarial Autoencoder with Applications to Rolling Defect Detection”
 - Current Position: American Express, Phoenix
2. Huifeng Sun, Co-chair, Masters student in Statistics, 2018 – 2020, Graduated
 - Thesis: “Simultaneous Material Microstructure Classification and Discovery using Acoustic Emission Signals”
 - Current Position: Data Scientist, Insight, Tempe, AZ
3. Alexis Wade, Co-chair, 4+1 IE Master students, 2020 – 2022, Graduated
 - The student is partially funded to assist the Fulton School of Engineering (FSE) in improving retention rates among first-time freshmen
 - Thesis: “Developing a Machine Learning Framework for Student Persistence Prediction”
 - Current Position: Amazon

B3. Non-thesis M.S. students

1. Ajeey Musuwathi Rajkumar, Graduated Master student in Industrial Engineering, 2020 – 2022
 - Topic: “3D Segmentation for CBCT Image Segmentation”,
 - Funding: Supported by the Master Opportunity for Research in Engineering (MORE) program.
2. Jay Bhanushali, Graduated Master student in Industrial Engineering, 2019 – 2021
 - Topic: “Anomaly detection in multi-station traffic time series data”
3. Pranshu Varshney, Graduated Master student in Industrial Engineering, 2018 – 2020
 - Topic: “Medical Image Segmentation via U-Net”

B4. Academic Committee Member

Ph.D. students

1. Nan Xu, Mechanical Engineering, 2020 Spring – present
2. Rahul Rathnakumar, Mechanical Engineering, 2020 Spring – present
3. Qihang Xu, Mechanical Engineering, 2020 Fall – Present
4. Esam Alhomaidi, Industrial Engineering, 2019 Spring – 2023 Spring
5. Qiongfang Zhang, Mechanical Engineering, 2019 Fall – present
6. Yutian Pang, Mechanical Engineering, 2018 Fall – present
7. Jueming Hu, Mechanical Engineering, 2018 Fall – present
8. Jie Chen, Mechanical Engineering, 2018 Fall – 2022 Spring

9. Yanzhe Xu, Industrial Engineering, 2017 Fall – 2022 Summer
10. Rodrigo Ulloa, Industrial Engineering, 2017 Fall – 2022 Summer
11. Xin Su, Industrial Engineering, 2016 Spring – 2020 Fall
12. Yuhao Wang, Mechanical Engineering, 2016 Spring – present
13. Xufeng Yao, Industrial Engineering, 2016 Fall – 2021 Spring
14. Girish Jampani Hanumantha, Industrial Engineering, 2015 Spring – 2020 Summer
15. Fei Gao, Industrial Engineering, 2015 Fall – 2019 Fall
16. Yunyi Kang, Industrial Engineering, 2015 Fall – 2020 Summer
17. Hyungmin Rha, Statistics, 2015 Fall – 2020 Spring
18. Hyunsoo Yoon, Industrial Engineering, 2014 Fall – 2018 Fall
19. Nathan Gaw, Industrial Engineering, 2014 Fall – 2019 Summer
20. Qinan Chang, Industrial Engineering, 2014 Fall – 2019 Spring
21. Derya Kilinc, Industrial Engineering, 2013 Fall – 2019 Summer

Master students

1. Eeshan Sudesh Deshpande, Industrial Engineering, 2019 Fall – 2021 Spring
2. Christian Seto, Industrial Engineering, 2017 Fall – 2018 Spring

VII. RESEARCH SUPPORT

SUMMARY OF RESEARCH SUPPORT

Total amount of all pending proposals in which Prof Yan is the PI or co-PI: \$5,245,077

Total amount of all awards in which Prof Yan is the PI or co-PI: \$6,350,522

Prof. Yan's share (recognition) in all awards as PI or co-PI: \$1,492,493

Total amount of all awards in which Prof Yan is the PI: \$1,089,049

Prof Yan's share (recognition) of the total award amount received at ASU as PI or co-PI as of 5/17/2023: \$1,268,913

Prof Yan's share (recognition) of research expenditures as of 5/17/2023: \$947,417

- G1. Co-I, "Novel threat detection methodology to detect HIV outbreaks in Washington", National Institutions of Health R21, 9/1/2022 – 8/31/2024, team: **Sarah Holte, Roxanne P. Kerani**, Hao Yan, Yajun Mei, Total Amount: \$252,281.00 (75%)
- G2. Co-I, "AIDen: An AI-empowered detection and diagnosis system for jaw lesions using CBCT", National Institutions of Health STTR Phase I, team: **Jing Li, Frank Setzer**, Hao Yan, Fleming Lure, Mel Mupparapu, 9/1/2022 – 8/31/2023. \$299,987 (20%)
- G3. Co-PI, "Knowledge-guided Automation for Integrity Management of Aging Pipelines (KAI-MAP) for Hydrogen Transport", Department of Transportation, team: **Yongming Liu**, Yiming Deng, Hao Yan, Total Amount \$844,726 (30%), 09/01/2022-08/31/2025
- G4. P.I., "Photovoltaic Plant Predictive Maintenance Optimization under Uncertainties Using Probabilistic Information Fusion", Department of Energy (DOE), team: **Hao Yan**, Yongming Liu, Total Amount: \$1,130M (50%), 07/01/2022-06/31/2025
- G5. Co-PI, "Hybridizing Data and Model Driven Approaches for Proactive Production Control", National Science Foundation (NSF), team: **Feng Ju**, Hao Yan, Total Amount: \$ 400,747 (30%), Period of Contract: 04/01/2020-03/31/2023
- G6. Co-PI, "Information Fusion for Real-Time National Air Transportation System Prognostics under Uncertainty", NASA University Leadership Initiative, team: **Yongming Liu**, Aditi Chattopadhyay, Nancy Cooke, Jingrui He, Mary Niemczyk, Pingbo Tang, Lei Ying, Hao Yan, Sankaran Mahadevan, PK Menon, Barron Bichon, \$10M (10%), 01/01/2020 –09/30/2023.

- G7. P.I., National Science Foundation (NSF), "ATD: Collaborative Research: Adaptive and Rapid Spatial-Temporal Threat Detection over Networks", Amount: \$68,378 (100%), team: **Hao Yan, Yajun Mei**, Sarah Holte, Period of Contract: 9/1/2018-8/31/2021 (Completed),
- G8. P.I., Procter & Gamble Company, "Modeling Multi-Stage Manufacturing Processes and Related Problems.", Amount: \$25000 (100%), Period of Contract: 7/1/2019-7/1/2020 (Completed), team: **Hao Yan**