Curriculum Vitae

Hao Yan
Assistant Professor
School of Computing, Informatics, and Decision Systems Engineering
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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

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

HONORS AND AWARDS

1. *QSR Best Referred Paper Award*, 2020, for the paper "Adaptive Partially-Observed Sequential Change Point Detection with Multiple Failure Modes".
2. *IEEE 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.
3. *IISE 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 IISE Transaction in Year 2019.
4. *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.

5. *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 Buckypaper"
6. *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".
7. *Best Paper Award in Data Mining Section of INFORMS* (2017, Applied Track) for the paper "Dynamic Multivariate Functional Data Modeling via Sparse Subspace Learning,"
8. *Best Student Paper Award Finalist in Quality, Statistics, and Reliability Section of INFORMS,* (2016) for the paper "AKMM: Adaptive Sensing for Online Anomaly Detection,"
9. *Best Paper Award Winner in the Quality, Statistics, and Reliability 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.
10. *Best Student Paper Award Winner in the Industrial and Systems Endgineering Research Conference (ISERC) in the Quality Control and Reliability Engineering (QCRE) division*, for the paper "Monitoring and Diagnostics of Streaming Images Via Recursive Smooth-Sparse Decomposition," May 2015.
11. *Best Student Paper Award Winner in the Data Mining Section of INFORMS*, for the paper "Image Defect Detection via Smooth Sparse Decomposition," Nov. 2014.

FUNDING ACTIVITIES

1. PI, "Photovoltaic Plant Predictive Maintenance Optimization under Uncertainties Using Probabilistic Information Fusion", Department of Energy (DOE), Total Amount: $750K+$380K (Cost Share).
2. Co-PI, "Hybridizing Data and Model Driven Approaches for Proactive Production Control", National Science Foundation (NSF), Total Amount: $ 400,747 (40%), Period of Contract: 04/01/2020-03/31/2023
3. Co-PI, "Information Fusion for Real-Time National Air Transportation System Prognostics under Uncertainty", NASA University Leadership Initiative, 01/01/2020 –12/30/2022
4. PI, "ATD: Collaborative Research: Adaptive and Rapid Spatial-Temporal Threat Detection over Networks", National Science Foundation (NSF), Amount: $68,378 (100%), Period of Contract: 9/1/2018-8/31/2021
5. PI, "Modeling Multi-Stage Manufacturing Processes and Related Problems.", Procter & Gamble Company, Amount: $25000 (100%), Period of Contract: 7/1/2019-7/1/2020

PUBLICATIONS, INTELLECTUAL PROPERTY, AND PRESENTATIONS

Journal Publications
Symbol: *Italic*: PI; **Bold**: my Ph.D. students;

Journal Publications (Accepted or Published)

J1. Wu, T., *Yan, H.*, Shao, X., "Adaptive Change Point Monitoring for High-Dimensional Data", *Statistica Sinica*, In Press

J2. *Yan, H.,* **Sergin, N.**, Lange, S., Brenneman, W., Ba, S., 2021, "Deep Independent Regularized Multi-stage Transition Model for Predictive Modeling of Weakly-Correlated Multi-Stage Manufacturing Systems", *Journal of Quality Technology*, In Press

J3. **Sergin, N.**, *Yan, H.*, 2021, "Deep Probabilistic Autoencoders for High-dimensional Process Monitoring", *Journal of Quality Technology*, In Press

J4. Zhao, Y., *Yan., H.*, Holte, S., Mei., Y, "Rapid Detection of Hot-spots via Tensor Decomposition with applications to Crime Rate Data", *Journal of Applied Statistics,* In Press

J5. *Yan, H.*, Grasso, M., Paynabar, K., Colosimo, B. M., 2021, "Real-time detection of clustered events in video-imaging data with applications to additive manufacturing". *IISE Transactions*, In Press

J6. 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". *IISE Transactions on Healthcare Systems Engineering*, In Press

J7. Zheng, Z., *Yan, H.*, Setzer, F., Shi, K., Mei., M., Li, J., 2020, "Anatomically Constrained Deep Learning for Automating Dental CBCT Segmentation and Lesion Detection", *IEEE Transactions on Automation Science and Engineering*, In Press

J8. 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), 5010-5017

J9. 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*, In Press

J10. Fang, X., *Yan, H.*, Gebraeel, N., & Paynabar, K., 2020, Multi-Sensor Prognostics Modeling for Applications with Highly Incomplete Signals, *IISE Transactions*, In press, 1–30.

J11. 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*, In press.

J12. 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*, 17(1), 273–283 (2020).

J13. Zhang, C., *Yan, H.*, Shi, J., 2020, "Dynamic Multivariate Functional Data Modeling via Sparse Subspace Learning", *Technometrics, In press* (This paper wons the Applied Track Best Paper Award in the in Data Mining Section of INFORMS)

J14. Reisi Gahrooei, M., Yan, H., and Paynabar, K., 2020, Comments on: On Active Learning Methods for Manifold Data, *TEST*, 29(1), 38–41 (2020). http://dx.doi.org/10.1007/s11749-019-00696-w

J15. *Yan, H.*, Paynabar, K., Shi, J., 2019. "AKM2D: An Adaptive Framework for Online Sensing And Anomaly Detection", *IIE Transactions,* pp 1-15. (This paper is one of the four finalists of Best Student Paper Award in Quality, Statistics, and Reliability Section of INFORMS).

J16. *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, *arXiv preprint arXiv:1807.10278.*

J17. 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.

J18. *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. (This paper received 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).

J19. Zhang, C., *Yan, H.*, Shi, J., 2018, "Multiple Sensor-Based Monitoring and Anomaly Detection", *Journal of Quality Technology,* Vol 50(4), pp344-362.

J20. 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.

J21. 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.

J22. Yan, H., Paynabar, K., Shi, J., 2017, "Anomaly Detection in Images with Smooth Background Via Smooth-Sparse Decomposition", *Technometics*, Vol. 59(1) pp102-114. (This paper received Best Student Paper Award in Data Mining Section of INFORMS 2014)

J23. *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

J24. 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.

J25. *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.

Journal Publications (Submitted or In Revision)

J26. Pang, Y., **Zhao X.**, *Yan, H.*, and Liu., Y, "Data-Driven Trajectory Prediction with WeatherUncertainties: A Bayesian Deep Learning Approach", *submitted to IEEE Transaction on Intelligent Transportation System*

J27. **Zhao, X.**, *Yan, H.*, Hu. Z., Du, D., "Deep Spatio-temporal Monitoring and Decomposition for Cardiac Electrical Conduction Simulation", *submitted to IISE Transaction*

J28. Li, Y., *Yan, H.*, Jin, R., "Multi-task Learning with Latent Variation Decomposition for Multi-variate Responses", *submitted to IISE Transaction*

J29. Guo, J., *Yan, H.*, Zhang, C., "Thompson Sampling based Partially Observable Online Change Detection via Bayesian Spike-Slab CompositeDecomposition" *submitted to Technometrics*

Journal Publications with My Students (Close to Submission)

J30. **Zhao X.**, Hu J., Mei Y., Yan H., "Adaptive Partially-Observed Sequential Change Point Detection with Multiple Failure Modes", *to be submitted to Technometrics*

J31. **Zhao X.**, Yan H., and Liu., Y, "Hierarchical Tree-based Sequential Event Prediction with Application in the Aviation Accident Report", *to be submitted to IEEE Transaction on Reliability*

Referred Conference Publication

C1. Zhao, X., *Yan, H.*, & Liu, Y. (2021, April). "Hierarchical Tree-based Sequential Event Prediction with Application in the Aviation Accident Report", *In 2021 IEEE 37th International Conference on Data Engineering*, pp. 1925-1930

C2. Huang, J., *Yan, H.*, Li, J., Stewart, H. M., & Setzer, F, "Combining Anatomical Constraints and Deep learning for 3-D CBCT Dental Image Multi-label Segmentation", *In 2021 IEEE 37th International Conference on Data Engineering*, pp. 2750-2755

C3. Li, Z., **Sergin, N.**, *Yan, H.*, Zhang, C., Tsung, F., "Tensor Completion for Weakly-dependent Data on Graph for Metro Passenger Flow Prediction*", Thirty-Fourth AAAI Conference on Artificial Intelligence, 2020*

C4. *Yan, H.*, Yeh, H., and **Sergin, N.**, Image-based Process Monitoring via Adversarial Autoencoder with Applications to Rolling Defect Detection, *IEEE 15th International Conference on Automation Science and Engineering (CASE)*

C5. *Yan, H.*, **Zhao, X.**, Hu. Z., Du, D., Physics-based Deep Spatio-temporal Metamodeling for Cardiac Electrical Conduction Simulation, *IEEE 15th International Conference on Automation Science and Engineering (CASE)*

C6. **Zhao, X.**, *Yan, H.*, Li, J., Pang, Y., Liu, Y., "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) 2019.*

C7. **Zhao, X.**, Kang, Y., *Yan, H.*, Feng, J., "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) 2019.*

C8. Zhao, Y., *Yan., H.*, Holte, S., Mei., Y, "Rapid Detection of Hot-spot by Tensor Decomposition on Space and Circular Time with Application to weekly Gonorrhea data", *The XIIIth International Workshop on Intelligent Statistical Quality Control, Hong Kong, 2019*

C9. 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.

C10. 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.

C11. 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)*

INVITED TALKS

Peer-reviewed Conference Presentations:

T1. **Sergin, N.**, "Image-based Process Monitoring via Adversarial Autoencoder with Applications to Rolling Defect Detection," *IEEE 15th International Conference on Automation Science and Engineering (CASE)*

T2. **Zhao, X.**, Physics-based Deep Spatio-temporal Metamodeling for Cardiac Electrical Conduction Simulation, *IEEE 15th International Conference on Automation Science and Engineering (CASE)*

T3. **Zhao, X.**, "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) 2019.*

T4. **Zhao, X.**, "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) 2019.*

Invited Conference Presentation:

T5. **Sergin, N.**, INFORMS Conference, "Graph-regularized Joint Tensor Subspace Clustering And Completion For Subway Ridership Analysis", Oct 2019, Seattle, WA

T6. **Sergin, N.**, INFORMS Conference, "High-dimensional Anomaly Detection With Adversarial Autoencoders", Oct 2019, Seattle, WA

T7. **Zhao***, X.* *Materials Characterization With Acoustic Emission Signatures, INFORMS 2019, Seattle*

T8. Yan., H., INFORMS Conference, "Anomaly Detection in Deep Spatio-temporal Metamodeling For Cardiac Electrical Conduction Simulation", Oct 2019, Seattle, WA

T9. **Zhao, X.,** INFORMS Conference, "Optimizing Multiple Condition Policy based on Real-time Degradation Signals via Model-based Reinforcement Learning", Oct 2019, Seattle, WA

T10. Yan, H.*,* "Spatio-Temporal Analysis of Video-Imaging Data for Hot-spot Detection in Metal Additive Manufacturing, May 2019, IISE Annual Conference,

T11. "Exploiting the Structure of High- Dimensional Data for Anomaly Detection", Arizona State University, Mar 2019, ASU Machine Learning Day,

T12. NSF Annual PI Meeting for Algorithm for Threat Detection, "Adaptive and Rapid Spatial-Temporal Threat Detection Over Networks", Nov 2018, Phoenix, AZ

T13. INFORMS Conference, "A Multitask Learning Based Decomposition Approach for Modeling Distributed Machines", Nov 2018, Phoenix, AZ

T14. INFORMS Conference, "A Wavelet-based Penalized Mixed-effects Model for Multichannel Profile Detection of In-line Raman Spectroscopy", Nov 2018, Phoenix, AZ

T15. INFORMS Conference, "Nonlinear Profile Monitoring via Variational Autoencoder", Nov 2018, Phoenix, AZ

T16. INFORMS Conference, "Real-time Anomaly Detection for Spatial-temporal Correlated Profile", Nov 2018, Phoenix, AZ

T17. "Exploiting the Structure of High- Dimensional Data for Anomaly Detection", Arizona State University, Sep 2018, Statistics Department

T18. Virginia Tech INFORMS Student Chapter Seminar Series, "Exploiting the Structure of High- Dimensional Data for Anomaly Detection", Apr 2018, Blacksberg, VA

T19. INFORMS Conference, "Structured Point Cloud Data Modeling Via Regularized Tensor Decomposition and Regression", Nov. 2017, Houston, TN.

T20. INFORMS Conference, "Unsupervised High-dimensional Profile Monitoring and Anomaly Detection via Variational Autoencoder", Nov. 2017, Houston, TN.
T21. INFORMS Conference, "Online Adaptive Sampling and Estimation for Clustered Anomaly Detection", Nov. 2016, Nashville, TN.
T22. INFORMS Conference, "Structured Point Cloud Data Modeling Via Regularized Tensor Decomposition and Regression", Nov. 2016, Nashville, TN.
T23. INFORMS Conference, "Real-time Monitoring and Diagnosis of High-Dimensional Data Streams via Spatio-Temporal Smooth Sparse Decomposition" Nov. 2015, Philadelphia, PA
T24. QPRC, "Monitoring and Diagnosis of High-Dimensional Data Streams via Recursive Smooth-Sparse Decomposition", June. 2015, Raleigh, NC
T25. ISERC, "Monitor and diagnostics of streaming images via recursive smooth-sparse decomposition", May. 2015, Nashville, TN
T26. INFORMS Conference, "Image Defect Detection via Smooth-Sparse Decomposition", Nov. 2014, San Francisco, CA
T27. INFORMS Conference, "Multiple sensor data fusion in degradation modeling under different operation conditions", Nov. 2014, San Francisco, CA.
T28. INFORMS Conference, "Image-based process monitoring and defect detection via smooth-sparse decomposition", Nov. 2014, San Francisco, CA.
T29. INFORMS Conference, "Image-based process monitoring using low rank tensor decomposition", Oct. 2013, Minneapolis, MN.

PROFESSIONAL ACTIVITIES AND SERVICE

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

Paper Competition Committee:

- Review committee for Data Mining Best Student Paper Competition of INFORMS 2015

- Review committee for 2019 IISE DAIS division's Best Student Paper Competition

Workshop Organizer:

- Quality, Statistics, and Reliability 20th year anniversary workshop, more than 100 participants around the world.

Journal Reviewing

- Statistica Sinica
- Technometrics
- IEEE Transactions on Industrial Electronics
- IISE Transaction
- Journal of Applied Statistics
- Journal of Simulation Computers & Industrial Engineering
- Journal of Manufacturing Systems
- Computers & Industrial Engineering
- Journal of Industrial and Production Engineering
- Quality and Reliability International
- Journal of Quality Technology

Conference Reviewing

- PHM Conference
- CASE Conference
- RA-L Conference

UNIVERSITY AND DEPARTMENT SERVICE

Arizona State University Tempe, AZ, USA

- Graduate Program Committee Fall 2019 – Present
- Undergraduate Program Committee Fall 2017 – Fall 2018
- Seminar Organizer Spring 2018 – Spring 2019

MENTORING ACTIVITIES

Academic Committee Chair

Current Thesis Advisee

1. Nurettin Sergin (Ph.D. student), School of Computing, Informatics and Decision Systems Engineering (CIDSE), "Anomaly Detection with High-dimensional Data", 2017 – present (funded research assistant)
2. Xinyu Zhao (Ph.D. student), CIDSE, "Temporal Data Analysis", 2018 – present (funded research assistant)

Previous Thesis Advisee, graduated

3. David Yeh (Masters student), CIDSE, "Image-based Process Monitoring via Generative Adversarial Autoencoder with Applications to Rolling Defect Detection", 2017 – 2019

Non-thesis M.S. students

1. Jay Bhanushali, "Anomaly detection in multi-station traffic time series data", graduated
2. Mayur Waghela, "Audio data classification", graduated

3. Pranshu Varshney, “Medical Image Segmentation via U-Net”, graduated

Academic Committee Member

Ph.D.

1. Jueming Hu, Mechanical Engineering, 2018 – present
2. Yuhao Wang, Mechanical Engineering, 2018 – present
3. Yunyi Kang, 2015 – present
4. Girish Jampani, CIDSE, 2015 – present
5. Hyungmin Rha, School of Mathematical and Statistical Science, 2015 – present
6. Xin Su, CIDSE, 2012— present
7. Nathan Gaw, CIDSE, 2014 – 2018, graduated
8. Hyunsoo Yoon, CIDSE, 2014 – 2018, graduated
9. Fei Gao, CIDSE, 2013 – 2019, graduated
10. Derya Kilinc, CIDSE, 2013 – 2019, graduated

Masters

1. Christian Seto, CIDSE, 2016 – 2018, graduated
2. David Yeh, CIDSE, 2017 – 2019, graduated

TEACHING ACTIVITIES

Arizona State University

• IEE 474 Quality Control	Fall 2019	72 students
• IEE 605 Foundation of Information Systems	Spring 2019	30 students
• IEE 572 Design and Analysis of Engineer Experiments	Fall 2018	60 students
• IEE 598 Data Science for System Informatics	Spring 2018	69 students
• IEE 572 Design and Analysis of Engineer Experiments	Fall 2017	106 students

Note: 1) I developed IEE 598 “Data Science for System Informatics” for graduate students, which combine 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. 2) I redesigned the class “IEE 605 Foundation of Information Systems” with many modern advanced data mining algorithms, such as expectation-maximization, probabilistic graphical models, and large-scale optimization.

Georgia Institution of Technology

- 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.

- 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