Yili Hong

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Education

- Ph.D.   Iowa State University, Statistics   08/2009
- M.S.   Iowa State University, Statistics   12/2005
- B.S.   University of Science and Technology of China (USTC), Statistics   07/2004

Current Research Interests

- Reliability Analysis; Robustness of Artificial Intelligence Systems; Engineering Statistics
- Machine Learning; Statistical Computing
- Survival Analysis; Longitudinal Data Analysis; Spatial Data Analysis; Biostatistics

Working History

- Professor, Department of Statistics, Virginia Tech   08/2020-*present*
- Affiliate Faculty, National Security Institute, Virginia Tech   08/2022-*present*
- Affiliate Faculty, Grado Department of Industrial and
  Systems Engineering, Virginia Tech   11/2022-*present*
- Co-Director, VT-Statistics and Artificial Intelligence
  Laboratory (VT-SAIL)   08/2019-*present*
- Associate Professor, Department of Statistics, Virginia Tech   08/2014-07/2020
- Assistant Professor, Department of Statistics, Virginia Tech   08/2009-07/2014
- Visiting Research Fellow, Department of Statistics and Applied
  Probability, National University of Singapore   06/2010-07/2010
- Research Assistant, Department of Statistics, Iowa State University   08/2005-07/2009
- Summer Intern, Procter & Gamble Pharmaceuticals, Mason, OH   05/2007-08/2007
- Teaching Assistant, Department of Statistics, Iowa State University   08/2004-07/2005

Awards and Honors

- Outstanding Contribution Award for paper published in   01/2018
  Accident Analysis and Prevention, Transportation Research Board
- ASA Physical and Engineering Sciences Award, ASA   05/2017

- The 2016 Wilcoxon Award for best practical application paper 08/2016
  in the 2015 issues of *Technometrics*, ASA and ASQ
- The Stan Ofsthun Award for the best RAMS paper in reliability engineering 01/2015
  Society of Reliability Engineering
- Best Reliability Paper in Quality Engineering, ASQ Reliability Division 05/2014
- ISI Elected Member, International Statistical Institute (ISI) 03/2014
- NISS/ASA Best y-BIS Paper Award, ISBIS 06/2012
- DuPont Young Professor Award, DuPont 06/2011
- The Zaffarano Prize for Graduate Student Research, Iowa State University 04/2010
- George W. Snedecor Award in Statistics, Iowa State University 04/2007
- Holly C. & E. Beth Fryer Award in Statistics, Iowa State University 08/2006
- Graduate Research Excellence Award, Iowa State University 08/2009
- The Laha Travel Award to the Joint Statistical Meetings, 08/2009
  Institute of Mathematical Statistics
- Student Travel Award, the 2008 Spring Research Conference 05/2008
  on Statistics in Industry and Technology, Atlanta, GA
- Alumni Scholarship, Iowa State University 08/2004
- Excellent Undergraduate Thesis Award, USTC 07/2004
- Excellent Undergraduate Research Program Award, USTC 01/2004

Editorial Activities

- *Journal of Quality Technology*, Editorial Review Board Member, since 2016.
- *Technometrics*, Associate Editor, 2013-2022.
- *Journal of Quality Technology*, Guest Editor, 2015-2018,
  for a special issue on Big Data in Reliability.
- *International Journal of Reliability, Quality and Safety Engineering (IJRQSE)*,
  Editorial Review Board Member, since 2020.
- *Behaviormetrika*, Associate Editor, 2017-2023.

Research Grants

1. Co-PI for "CSR: Large: VarSys: Managing Variability in High-performance Computing Systems (Phase II)", NSF-CNS, $1,189,778, 08/10/2018-09/30/2023.

2. Co-PI for "Comprehensive Assessment and Diagnostics for Federated AI Algorithms in Cyber Physical Systems," COVA-CCI (Commonwealth Cyber Initiative-Coastal Virginia), Co-PI, $50,000, 07/01/2021-05/31/2023, (sub-award from ODU).

3. Co-PI for "Investigating Robustness and Uncertainty of AI Algorithms in Cyber Physical Systems," CCI (Commonwealth Cyber Initiative), $25,000, 07/01/2021-12/31/2022, (sub-award from ODU).

4. PI for "Building Flexible Small-Scale GPU Computing Power for VT Statistics and Artificial Intelligence Laboratory (VT-SAIL)", VT-COS Equipment Grant, $20,838, 12/21/2021-06/30/2022.

5. Co-PI for "Affiliating VT-SAIL Lab with Academy of Data Science," VT-Academy of Data Science Seed Grant. $15,000, 07/01/2021-06/30/2022.

6. PI for "Integrating System Physics with Sensor Data for Health Prognostics of Complex Engineered Systems," NSF, $182,967, 08/01/2019-07/31/2022, (sub-award from Univ. of Arkansas).

7. Co-PI for "Investigation on the Robustness of Machine Learning and Artificial Intelligence Algorithms," NSF, $93,110, 11/01/2019-09/30/2020.

8. Co-PI for "Enabling Resilient and Secured High Performance Computing through Scalable and Parallel Deep Learning System," VT-ICTAS, $80,000, 07/01/2019-06/30/2021.

9. Co-PI for "Automatic Identification of Limnonectes Species Using Image Analysis and Data Analytic Classification Systems," 4VA, $17,708, 02/01/2019-08/31/2020.

10. PI for "Advanced Text Analytics for Anomaly Detections in Warranty Claims," After. Inc., $27,406, 08/10/2017-01/31/2018.

11. Co-PI for "Data-driven Modeling and Optimization for Energy-Smart Manufacturing," NSF-CMMI, $300,000, 09/01/2016-08/31/2020.

12. Co-PI for "CSR: Large: VarSys: Managing Variability in High-performance Computing Systems (Phase I)", NSF-CNS, $1,189,778, 08/10/2016-08/09/2019.

13. Co-PI for "Health Consequences of Disaster-Related Disruptions in Home and Community-Based Supports," DHHS-ASPR, $172,887, 02/15/2015-02/14/2017.

14. Co-Investigator for "The Effects of Light vs Deep Anesthesia on Postoperative Cognitive Outcomes," NIH-R21, $20,698, 06/01/15-05/31/16.

15. PI for "Reliability Prediction Based on Dynamic Data Collected with Modern Technology," NSF-CMMI-MES, $210,234, 07/01/2011-06/30/2014.

16. PI for "Statistical Methods for Modern Reliability Data," DuPont Young Professor Grant, $75,000, 08/15/2011-08/14/2014.

17. Co-PI for "Environmental Variability and Disease Emergence: Spatial Patterns of Lyme Disease Emergence in Virginia," NSF-BCS-GSS, $199,998, 09/15/2011-08/31/2013.

Publications

Peer-reviewed Journal Articles

Student co-authors are underlined

1. Wang, Y., Xu, L., **Hong, Y.**, Pan, R., Chang, T. H., Lux, T. C. H., Bernard, J., Watson, L. T., and Cameron, K. (2023), Design Strategies and Approximation Methods for High-Performance Computing Variability Management, *Journal of Quality Technology*, Vol. 55, pp. 88–103.

2. **Hong, Y.**, Lian, J., Xu, L., Min, J., Wang, Y., Freeman, L., and Deng, X. (2022), Statistical Perspectives on Reliability of Artificial Intelligence Systems, *Quality Engineering*, in press.

3. Lin, Z., Wang, Y., and **Hong, Y.** (2022), The Poisson Multinomial Distribution and Its Applications in Voting Theory, Ecological Inference, and Machine Learning, *Computational Statistics*, in press.

4. Min, J., **Hong, Y.**, King, C. B., and Meeker, W. Q. (2022), Reliability Analysis of Artificial Intelligence Systems Using Recurrent Events Data from Autonomous Vehicles, *Journal of the Royal Statistical Society: Series C*, Vol. 71, pp. 987-1013.

5. Wang, Y., Lee, I., **Hong, Y.**, and Deng, X. (2022), Building Degradation Index with Variable Selection for Multivariate Sensory Data, *Reliability Engineering & System Safety*, Vol. 227, pp. 108704

6. Jin, Z., Lu, L., Bedair, K., and **Hong, Y.** (2022), Modeling Bivariate Geyser Eruption System with Covariate Adjusted Recurrent Event Process, *Journal of Applied Statistics*, Vol 49, pp. 2488-2509.

7. Lian, J., Freeman, L., **Hong, Y.**, and Deng, X. (2021), Robustness with Respect to Class Imbalance in Artificial Intelligence Classification Algorithms, *Journal of Quality Technology*, Vol. 53, pp. 505-525.

8. Lu, L., Wang, B. X., **Hong, Y.**, and Ye, Z. (2021), General Path Models for Multivariate Degradation Data with Repeated Measures and Covariates, *Technometrics*, Vol. 63, pp. 354-369.

9. Hajiha, M., Liu, X. and **Hong, Y.** (2021), Degradation Modeling under Dynamic Operating Conditions and Its Applications, *Journal of Quality Technology*, Vol. 53, pp. 347-368.

10. Bedair, K., **Hong, Y.**, and Al-Khalidi, H. R. (2021), Copula-Frailty Models for Recurrent Event Data Based on Monte Carlo EM Algorithm, *Journal of Statistical Computing and Simulation*, Vol. 93, pp. 3530-3548.

11. Xu, L., Lux, T., Chang, T., Li, B., **Hong, Y.**, Watson, L., Butt, A., Yao, D., and Cameron, K. (2021), Prediction of High-Performance Computing Input/Output Variability and Its Application to Optimization for System Configurations, *Quality Engineering*, Vol. 33, pp. 318-334.

12. Lux, T. C. H., Watson, L. T., Chang, T. H., **Hong, Y.** and K. W. Cameron (2021), Interpolation of Sparse High-Dimensional Data, *Numerical Algorithms*, Vol. 88, pp. 281313.

13. Shi, Y., Xiang, Y., Liao, Y., Zhu, Z., and **Hong, Y.** (2021), Optimal Burn-in Policies for Multiple Dependent Degradation Processes, *IISE Transactions*, Vol. 53, pp. 1281-1293.

14. Wang, X., Wang, B. X., **Hong, Y.**, and Jiang, P. H. (2021), Degradation Data Analysis Based on Gamma Process with Random Effects, *European Journal of Operational Research*, Vol. 292, pp. 1200-1208.

15. Zhang, Q., Chien, P., Liu, Q., Xu, L., and **Hong, Y.** (2021), A Sparse Covariance Estimation Approach to Mixed-Input Gaussian Process Emulation with a Large Number of Categorical Levels, *Journal of Quality Technology*, Vol. 53, pp. 410-420.

16. Tung, H., Lee., I., **Hong, Y.**, Tseng, S. T., and Wang, B. (2021), Sequential Batch Designs for Accelerated Life Tests, *Quality Engineering*, Vol. 33, pp. 271-285.

17. Shan, Q., **Hong, Y.**, and Meeker, W. Q. (2020), Seasonal Warranty Prediction Based on Recurrent Event Data, *The Annals of Applied Statistics*, Vol. 14, pp. 929-955.

18. Xu, L., Wang, Y., Lux, T., Chang, T., Bernard, J., Li, B., **Hong, Y.**, Watson, L., and Cameron, K. (2020), Modeling I/O performance variability in high-performance computing systems using mixture distributions, *Journal of Parallel and Distributed Computing*, Vol. 139, pp. 87-98.

19. Chang, T. H., Watson, L. T., Lux, T. C. H., Butt, A. R., K. W. Cameron, and **Hong, Y.** (2020), Algorithm 1012: DELAUNAYSPARSE: Interpolation via a Sparse Subset of the Delaunay Triangulation in Medium to High Dimensions, *ACM Transactions on Mathematical Software*, Vol. 46, article no.38, DOI: 10.1145/3422818.

20. Tang, C. J., Jin, Z., Sands, L. P., Pleasants, D., Tabatabai, S., **Hong, Y.**, and Leung, J. M., (2020), ADAPT-2, A Randomised Controlled Trial to Reduce Postoperative Delirium Through Reduction in Intraoperative EEG Suppression in Older Surgical Patients Undergoing Major Noncardiac Surgery, *Anesthesia & Analgesia*, Vol. 131, pp. 1228-1236.

21. Xu, L., Gotwalt, C., **Hong, Y.**, King, C. B., and Meeker, W. Q., (2020), Applications of the Fractional-Random-Weight Bootstrap, *The American Statistician*, Vol. 74, pp. 345-358.

22. Wang, X., Wang, B. X., Jiang, P. H., and **Hong, Y.** (2020), Statistical Inference for Accelerated Degradation data Based on the Wiener Process with Random Effects, *Quality and Reliability Engineering International*, Vol. 36, pp. 1969-1981.

23. Lee, I., Tseng, S. T., and **Hong, Y.** (2020), Global Planning of Accelerated Degradation Tests Based on Exponential Dispersion Degradation Models, *Naval Research Logistics*, Vol. 67, pp. 469-483.

24. Sun, Q., Ye,. Z. and **Hong, Y.** (2020), Statistical Modeling of Multivariate Destructive Degradation Tests with Blocking, *Technometrics*, Vol. 62, pp. 536-548.

25. Fang, G., Pan, R., and **Hong, Y.** (2020), Copula-based Reliability Analysis of Degrading Systems with Dependent Failures, *Reliability Engineering & System Safety*, Vol. 193, pp. 106618.

26. Wang, X., Wang, B. X., Jiang, P. H., and **Hong, Y.** (2020) Accurate Reliability Inference Based on Wiener Process with Random Effects for Degradation Data, *Reliability Engineering & System Safety*, Vol. 193, pp. 106631.

27. Xie, Y., Xu, L., Li, J., Deng, X., **Hong, Y.**, Kolivras, K. N., and David N. Gaines (2019), Spatial Variable Selection and An Application to Virginia Lyme Disease Emergence, *Journal of the American Statistical Association*, Vol. 114, pp. 1466-1480.

28. Ding, Y., Yang, Q., King, C., and **Hong, Y.** (2019), A General Accelerated Destructive Degradation Testing Model for Reliability Analysis, *IEEE Transactions on Reliability*, Vol. 68, pp. 1272-1282.

29. Cameron, K., Anwar, A., Cheng, Y., Xu, L., Li, B., Ananth, U., Bernard, J., Jearls, C., Lux, T., **Hong, Y.**, Watson, L., and Butt, A. (2019), MOANA: Modeling and Analyzing HPC I/O Variability, *IEEE Transactions on Parallel and Distributed Systems*, Vol. 30, pp. 1843-1856.

30. Stevens, L. K., Kolivras, K. N., **Hong, Y.**, Thomas, V. A., Campbell, J. B., and Prisley, S. P. (2019), Future Lyme Disease Risk in the Southeastern United States Based on Projected Land Cover, *Geospatial Health*, Vol. 14, pp. 153-162.

31. Hu, H., He, K., Zhong, T., and **Hong, Y.** (2019), Fault Diagnosis of FDM Process Based on Multi-class Support Vector Machine, *Rapid Prototyping Journal*, Vol. 26, pp. 330-348.

32. Yuan, M., Tang, C., **Hong, Y.**, and Yang, J. (2018), Disentangling and Assessing Uncertainties in Multiperiod Corporate Default Risk Predictions, *The Annals of Applied Statistics*, Vol. 12, pp. 2587-2617.

33. Lee, I., **Hong, Y.**, Tseng, S. T., and Dasgupta, T. (2018), Sequential Bayesian Design for Accelerated Life Tests, *Technometrics*, Vol. 60, pp. 472-483.

34. **Hong, Y.**, Zhang, M., and Meeker, W. Q., (2018), Big Data and Reliability Applications: The Complexity Dimension, *Journal of Quality Technology*, Vol. 50, pp. 135-149.

35. Zhang, M., **Hong, Y.**, and Balakrishnan, N. (2018), The Generalized Poisson Binomial Distribution and the Computing of Its Distribution Functions, *Journal of Statistical Computation and Simulation*, Vol. 88, pp. 1515-1527.

36. He, K., Zhang, Q., and **Hong, Y.** (2018), Profile Monitoring based Quality Control Method for Fused Deposition Modeling Process, *Journal of Intelligent Manufacturing*, open access, DOI: 10.1007/s10845-018-1424-9.

37. Sands, L. P., Xie, Y., Pruchno, R., **Hong, Y.**, and Heid, A. (2018), Older Adults' Health Care Utilization a Year After Experiencing Fear or Distress from Hurricane Sandy, *Disaster Medicine and Public Health Preparedness*, Vol. 12, pp. 578-581.

38. Xie, Y., King, C., **Hong, Y.**, and Yang, Q. (2018), Semiparametric Models for Accelerated Destructive Degradation Test Data Analysis, *Technometrics*, Vol. 60, pp. 222-234.

39. Wang, X., Ye, Z., **Hong, Y.**, and Tang, L. C. (2018), Analysis of Field Return Data with Failed-But-Not-Reported Events, *Technometrics*, Vol. 60, pp. 90-100.

40. King, C., **Hong, Y.**, Xie, Y., Van Mullekom, J. H., DeHart, S. P., and DeFeo, P. A. (2018), A Comparison of Traditional and Maximum Likelihood Approaches to Estimating Thermal Index for Polymeric Materials, *Journal of Quality Technology*, Vol. 50, pp. 117-129.

41. Yuan, M., **Hong, Y.**, Escobar, L. A., and Meeker, W. Q. (2018), Tolerance Interval for (Log) Location-Scale Family of Distributions, *Quality Technology and Quantitative Management*, Vol. 15, pp. 374-392.

42. Duan, Y., **Hong, Y.**, Meeker, W. Q., Stanley, D. L., and Gu, X. (2017), Photodegradation Modeling Based on Laboratory Accelerated Test Data and Predictions Under Outdoor Weathering for Polymeric Materials, *The Annals of Applied Statistics*, Vol. 11, pp. 2052-2079.

43. Yang, Q., **Hong, Y.**, Zhang, N., and Li, J. (2017), A Copula-Based Trend-Renewal Process Model for Analysis of Repairable Systems With Multitype Failures, *IEEE Transactions on Reliability*, Vol. 66, pp. 590-602.

44. Liu, X., Liu, C., and **Hong, Y.** (2017), Analysis of Multiple Tank Car Releases in Train Accidents, *Accident Analysis and Prevention*, Vol. 107, pp. 164-172.

45. Xu, Z., **Hong, Y.**, Meeker, W. Q., Osborn, B. E., and Illouz, K. (2017), A Multi-level Trend-renewal Process for Modeling Systems with Recurrence Data, *Technometrics*, Vol. 59, pp. 225-236.

46. Xie, Y., **Hong, Y.**, Escobar, L. A., and Meeker, W. Q. (2017), A General Algorithm for Computing Simultaneous Prediction Intervals for the (Log)-Location-Scale Family of Distributions, *Journal of Statistical Computation and Simulation*, Vol. 87, pp. 1559-1576.

47. King, C., **Hong, Y.**, and Meeker, W. Q. (2017), Product Component Genealogy Modeling and Field-Failure Prediction, *Quality and Reliability Engineering International*, Vol. 33, pp. 135-148.

48. Khosrowpour, A., Xie, Y., Taylor, J. E., and **Hong, Y.** (2016), One Size Does Not Fit All: Establishing the Need for Targeted Eco-Feedback, *Applied Energy*, Vol. 184, pp. 523-530.

49. Bedair, K. **Hong, Y.**, Li, J., and Al-Khalidi, H. R. (2016), Multivariate Frailty Models for Multi-type Recurrent Event Data and an Application to Cancer Prevention Trial, *Computational Statistics and Data Analysis*, Vol. 101, pp. 161-173.

50. King, C., **Hong, Y.**, DeHart, S. P., DeFeo, P. A., and Pan, R. (2016), Planning Fatigue Tests for Polymer Composites, *Journal of Quality Technology*, Vol. 28, pp. 227-245.

51. Thapa, R., Burkhart, H. E., **Hong, Y.**, and Li, J. (2016), Modeling Loblolly Pine (*Pinus taeda L.*) Clustered Survival Time with Time-dependent Covariates and Shared Frailties, *Journal of Agricultural, Biological, and Environmental Statistics*, Vol. 21, pp. 92-110.

52. Xu, Z., **Hong, Y.**, and Jin, R. (2016), Nonlinear General Path Models for Degradation Data with Dynamic Covariates, *Applied Stochastic Models in Business and Industry*, Vol. 32, pp. 153-167.

53. Rubio, F. J. and **Hong, Y.** (2016), Survival and Lifetime Data Analysis with a Flexible Class of Distributions, *Journal of Applied Statistics*, Vol. 43, pp. 1794-1813.

54. Li, J., **Hong, Y.**, Thapa, R., and Burkhart, H. E. (2015), Survival Analysis of Loblolly Pine Trees with Spatially Correlated Random Effects, *Journal of the American Statistical Association*, Vol. 110, pp. 486-502.

55. Liu, X. and **Hong, Y.** (2015), Modeling Correlated Railroad Crude Oil Tank Car Releases Using a Generalized Binomial Model, *Accident Analysis and Prevention*, Vol. 84, pp. 20-26.

56. **Hong, Y.**, Duan, Y., Meeker, W. Q., Stanley, D. L., and Gu, X. (2015), Statistical Methods for Degradation Data with Dynamic Covariates Information and an Application to Outdoor Weathering Data, *Technometrics*, Vol. 57, pp. 180-193.

57. **Hong, Y.**, King, C., Zhang, Y., and Meeker, W. Q. (2015), Bayesian Life Test Planning for Log-Location-Scale Family of Distributions, *Journal of Quality Technology*, Vol. 47, pp. 336-350.

58. Seukep, S. E., Kolivras, K. N., **Hong, Y.**, Li, J., Prisley, S. P., Campbell, J. B., Gaines, D. N., and Dymond, R. L. (2015), An Examination of the Demographic and Environmental Variables Correlated with Lyme Disease Emergence in Virginia, *EcoHealth*, Vol. 12, pp. 634-44.

59. **Hong, Y.**, Li, M., and Osborn, B. (2015), System Unavailability and Cost Analysis Based on Window-Observed Recurrent Event Data, *Applied Stochastic Models in Business and Industry*, Vol. 31, pp. 122-136.

60. Xu, Z., **Hong, Y.**, and Meeker, W. Q. (2015), Assessing Risk of a Serious Failure Mode Based on Limited Field Data, *IEEE Transactions on Reliability*, Vol. 64, pp. 51-62.

61. Li, J., Kolivras, K. N., **Hong, Y.**, Duan, Y., Seukep, S. E., Prisley, S. P., Campbell, J. B., and Gaines, D. N. (2014), Spatial and Temporal Emergence Pattern of Lyme Disease in Virginia, *The American Journal of Tropical Medicine and Hygiene*, Vol. 91, pp. 1166-1172.

62. **Hong, Y.** and Meeker, W. Q. (2014), Confidence Interval Procedures for System Reliability and Applications to Competing Risks Models, *Lifetime Data Analysis*, Vol. 20, pp. 161-184.

63. Meeker, W. Q. and **Hong, Y.** (2014), Reliability Meets Big Data: Opportunities and Challenges (with discussion), *Quality Engineering*, Vol. 26, pp. 102-116.

64. Ye, Z., **Hong, Y.**, and Xie, Y. (2013), How do Heterogeneities in Operational Environments Affect Field Failures?, *The Annals of Applied Statistics*, Vol. 7, pp. 2249-2271.

65. **Hong, Y.** and Meeker, W. Q. (2013), Field-Failure Predictions Based on Failure-time Data with Dynamic Covariate Information, *Technometrics*, Vol. 55, pp. 135-149.

66. Yang, Q., Zhang, N., and **Hong, Y.** (2013), Statistical Reliability Analysis of Repairable Systems with Dependent Component Failures under Partially Perfect Repair Assumption, *IEEE Transactions on Reliability*, Vol. 62, pp. 490-498.

67. **Hong, Y.** (2013), On Computing the Distribution Function for the Poisson Binomial Distribution, *Computational Statistics and Data Analysis*, Vol. 59, pp. 41-51.

68. Yang, Q., **Hong, Y.**, Chen, Y., and Shi, J. (2012), Failure Profile Analysis of a Single Repairable System Using Trend-renewal Process, *IEEE Transactions on Reliability*, Vol. 61, pp. 180-191.

69. Al-Khalidi, H. R., **Hong, Y.**, Fleming, T. R., and Therneau, T. (2011), Insights on the Robust Standard Error Under Recurrent Events Model, *Biometrics*, Vol. 67, pp. 1564-1572.

70. **Hong, Y.** and Meeker, W. Q. (2011), The Importance of Identifying Different Components of a Mixture Distribution in the Prediction of Field Returns. *Applied Stochastic Models in Business and Industry*, Vol. 27, pp. 280-289.

71. **Hong, Y.**, Ma, H., and Meeker, W. Q. (2010), A Tool for Evaluating Time-Varying-Stress Accelerated Life Test Plans with Log-Location-Scale Distributions. *IEEE Transactions on Reliability*, Vol. 59, pp. 620-627.

72. **Hong, Y.** and Meeker, W. Q. (2010), Field-Failure and Warranty Prediction Using Auxiliary Use-rate Data. *Technometrics*, Vol. 52, pp. 148-159.

73. **Hong, Y.**, Escobar, L. A., and Meeker, W. Q. (2010), Coverage Probabilities of Simultaneous Confidence Bands and Regions for Log-Location-Scale Distributions, *Statistic & Probability Letters*, Vol. 80, pp. 733-738.

74. Escobar, L. A., **Hong, Y.**, and Meeker, W. Q. (2009), Simultaneous Confidence Bands and Regions for Log-Location-Scale Distributions with Censored Data, *Journal of Statistical Planning and Inference*, Vol. 139, No. 9, pp. 3231-3245.

75. **Hong, Y.**, Meeker, W. Q., and McCalley, J. D. (2009), Prediction Intervals for Remaining Life of Power Transformers Based on Left Truncated and Right Censored Lifetime Data, *The Annals of Applied Statistics*, Vol. 3, No. 2, pp. 857-879.

76. Meeker, W. Q., Escobar, L. A., and **Hong, Y.** (2009), Using Accelerated Life Tests Results to Predict Product Field Reliability, *Technometrics*, Vol. 51, No. 2, pp. 146-161.

77. **Hong, Y.**, Meeker, W. Q., and Escobar, L. A. (2008), The Relationship Between Confidence Intervals for Failure Probabilities and Life Time Quantiles, *IEEE Transactions on Reliability*, Vol. 57, No. 2, pp. 260-266.

78. **Hong, Y.**, Meeker, W. Q., and Escobar, L. A. (2008), Avoiding Problems with Normal Approximation Confidence Intervals for Probabilities, *Technometrics*, Vol. 50, No. 1, pp. 64-68.

Peer-reviewed Conference Papers, Book Chapters, Encyclopedia Articles

79. Wang, Y., Lee, I., Lu, L., and **Hong, Y.** (2022), Statistical Analysis of Modern Reliability Data, a chapter in "Springer Handbook of Engineering Statistics, 2nd ed.", in press.

80. Gu, X., Lyu, Y., Jacobs, D., Fairbrother, A., Yu, L., Wang, C., Perry, L., and **Hong, Y.** (2020), Developing Methodology for Prediction of Long-Term Performance of PV Backsheets, *2020 47th IEEE Photovoltaic Specialists Conference (PVSC)*, Calgary, OR, pp. 2278-2282.

81. Lux, T. C. H., Watson, L., Chang, T. H., Xu, L., Wang, Y., and **Hong, Y.** (2020), An Algorithm for Constructing Monotone Quintic Interpolating Splines, *SpringSim'20, Society for Modeling & Simulation International*, pp. 1-12.

82. Lux, T. C. H., Watson, L., Chang, T. H., Xu, L., Wang, Y., Bernard, J., **Hong, Y.**, and Cameron, K. W. (2020), Effective Nonparametric Distribution Modeling for Distribution Approximation Applications, In SoutheastCon 2020, IEEE.

83. Lu, L., Lee, I., and **Hong, Y.** (2019), Bayesian Sequential Design Based on Dual Objectives for Accelerated Life Tests, Book chapter for "Statistical Quality Technologies: Theory and Practice" by Springer, pp. 257-276.

84. Lux, T. C. H., Watson, L., Chang, T. H., Bernard, J., Li, B., Yu, X., Xu, L., Back, G., Butt, A. R., Cameron, K. W., Yao, D., and **Hong, Y.** (2018), Novel meshes for multivariate interpolation and approximation, ACMSE '18 Proceedings of the ACMSE 2018 Conference, Article No. 13.

85. Chang, T. H., Watson, L. T., Lux, T. C. H., Li, B., Xu, L., Butt, A. R., Cameron, K. W., and **Hong, Y.** (2018), A Polynomial Time Algorithm for Multivariate Interpolation in Arbitrary Dimension via the Delaunay Triangulation, ACMSE '18 Proceedings of the ACMSE 2018 Conference, Article No. 12.

86. Chang, T. H., Watson, L. T., Lux, T. C. H. Raghvendra, S., Li, B., Xu, L., Butt, A. R., Cameron, K. W., and **Hong. Y.**, (2018). Computing the umbrella neighbourhood of a vertex in the Delaunay triangulation and a single Voronoi cell in arbitrary dimension. In Southeast-Con 2018. IEEE, St. Petersburg, FL, USA, pp. 1-8. DOI: 10.1109/SECON.2018.8479003

87. Chang, T. H., Watson, L. T., Lux, T. C. H., Xu, L., Back, G., Butt, A. R., Cameron, K. W. and **Hong, Y.** (2018), Predicting System Performance By Interpolation Using A High-Dimensional Delaunay Triangulation, HPC '18 Proceedings of the High Performance Computing Symposium, Article No. 2.

88. Lux, T. C. H., Watson, L., Chang, T. H., Li, B., Bernard, J., Xu, L., Back, G., Butt, A. R., Cameron, K. W. and **Hong, Y.** (2018), Predictive Modeling Of I/O Characteristics in High Performance Computing Systems, HPC '18 Proceedings of the High Performance Computing Symposium, Article No. 8.

89. Lux, T. C. H., Watson, L., Bernard, J., Chang, T. H., Li, B., Xu, L., Back, G., Butt, A. R., Cameron, K. W. and **Hong, Y.** (2018), Nonparametric Distribution Models for Predicting and Managing Computational Performance Variability, IEEE SoutheastCon, 2018, DOI: 10.1109/SECON.2018.8478814.

90. Fang, G., Pang, R., and **Hong, Y.** (2018), A Copula-based Multivariate Degradation Analysis for Reliability Prediction, *Reliability and Maintainability Symposium (RAMS), 2018 Annual*, DOI: 10.1109/RAM.2018.8463026.

91. King, C. B., Xu, Z., Lee, I., and **Hong, Y.** (2018), Reliability Analysis of Polymeric Materials, *Wiley StatsRef: Statistics Reference Online*, DOI: 10.1002/9781118445112.stat08081.

92. Lux, T. C. H., Watson, L., Chang, T. H., Bernard, J., Li, B., Xu, L., Back, G., Butt, A. R., Cameron, K. W. and **Hong, Y.** (2017), A first look: Using linux containers for deceptive honeypots. SafeConfig '17 Proceedings of the 2017 Workshop on Automated Decision Making for Active Cyber Defense, Pages 15-22.

93. Xie, Y., Jin, Z., **Hong, Y.**, and Van Mullekom, J. H. (2017), Statistical Methods for Thermal Index Estimation Based on Accelerated Destructive Degradation Test Data, Chapter 12 for "Statistical Modelling for Degradation Data," Springer.

94. Jin, Z., Xie, Y., **Hong, Y.**, and Van Mullekom, J. H. (2017), ADDT: An R Package for Analysis of Accelerated Destructive Degradation Test Data, Chapter 14 for "Statistical Modelling for Degradation Data," Springer.

95. Zhang, Y., Liao, H, and **Hong, Y.** (2015), Planning Accelerated Destructive Degradation Tests with Initiation Time, *Reliability and Maintainability Symposium (RAMS), 2015 Annual.*

96. Meeker, W. Q., **Hong, Y.**, and Escobar, L. A. (2011), Degradation Models and Data Analyses, *Encyclopedia of Statistical Sciences.*

97. Meeker, W. Q., **Hong, Y.**, and Escobar, L. A. (2011), The Failure-based Paradigm, *The Wiley Encyclopedia of Operations Research and Management Science.*

98. Meeker, W. Q., **Hong, Y.**, and Escobar, L. A. (2011), The Condition-based Paradigm, *The Wiley Encyclopedia of Operations Research and Management Science.*

99. **Hong, Y.** and Meeker, W.Q. (2010), Field Failure Prediction Using Dynamic Environmental Data. Chapter 16 in *Mathematical and Statistical Methods in Reliability. Applications to Medicine, Finance and Quality Control* (Eds. N. Balakrishnan, M. Nikulin, V. Rykov), Birkhauser: Boston.

100. McCalley, J. D., Honavar, V., Ryan, S. M., Meeker, W. Q., Qiao, D., Roberts, R. A., Li, Y., Pathak, J., Ye, M., **Hong, Y.** (2007), Integrated Decision Algorithms for Auto-steered Electric Transmission System Asset Management, *International Conference on Computational Science (1)*, pp. 1066-1073.

Other Contributions

101. Min, J., Lin, Z., and **Hong, Y.**, (2023), Invited discussion on "Specifying prior distributions in reliability applications" by Q. Tian, C. Lewis-Beck, J. B. Niemi, and W. Q. Meeker, *Applied Stochastic Models in Business and Industry*, in progress.

102. **Hong, Y.** and Meeker, W. Q., (2021), Invited discussion on "Virtual age, is it real? (Discussing virtual age in reliability context)" by M. Finkelstein and J. H. Cha, *Applied Stochastic Models in Business and Industry*, Vol. 37, pp. 32-34.

103. **Hong, Y.**, Liao, H., Yashchin, E., and Tsung, F. (2018), Editor's Notes on Special Issue on "Reliability and Maintenance Modeling with Big Data", *Journal of Quality Technology*, Vol. 50, pp. 133-134.

104. Sands, L. P., Jin, Z., Pruchno, R., Roberto, K. A., and **Hong, Y.** (2017), Decline in Medicaid Waiver Services after Hurricane Sandy Increases Risk-Adjusted Hospitalization, *Innovation in Aging*, Vol. 1 (Suppl 1), pp. 12261227.

105. Xu, L., and **Hong, Y.** (2017), Book review for "Functional Shape Analysis", *Journal of Quality Technology*, Vol. 49, pp. 419-420.

106. Sands, L. P., Xie, Y., Yuan, M., and **Hong, Y.** (2015), Change In Reports of Unmet Need for Help with ADL or Mobility Disabilities Across Three Years, *The Gerontologist*, Vol. 55(Suppl 2), pp. 722-723.

107. Meeker, W. Q. and **Hong, Y.** (2014), Rejoinder for "Reliability Meets Big Data: Opportunities and Challenges," *Quality Engineering*, Vol. 26, pp. 127-129.

108. **Hong, Y.** and King, C. (2014), Invited discussion on "EM-based Likelihood Inference for Some Lifetime Distributions Based on Left Truncated and Right Censored Data and Associated Model Discrimination" by N. Balakrishnan and D. Mitra, *South African Statistical Journal*, Vol. 48, 181-182.

109. **Hong, Y.** and Xu, Z. (2014), Invited discussion on "Methods For Planning Accelerated Repeated Measures Degradation Tests" by B. Weaver and W. Q. Meeker, *Applied Stochastic Models in Business and Industry*, Vol. 30, pp. 672-673.

Book In Progress

110. **Hong, Y.**, Deng, X., and Morgan, J. P. (2024), *Linear Models Theory for Data Science.*

111. **Hong, Y.**, Meeker, W. Q., and Pascual, F. G. (2025), *Advanced Statistical Methods for Reliability Data*, Wiley.

Software Development

1. **Hong, Y.**, Lin, Z., Wang, Y., and Junge, F. (2022). PoissonMultinomial: The Poisson-Multinomial Distribution. R package version 1.0.

2. **Hong, Y.**, and Min, J. (2021). MICsplines: The Computing of Monotonic Spline Bases and Constrained Least-Squares Estimates. R package version 1.0.

3. **Hong, Y.** (2021). Shiny-SLP: A Shiny App for Service Life Prediction, Version 2.0.

4. **Hong, Y.**, Xu, L., Xie, Y., and Jin, Z. (2018). SpatialVS: Package for Spatial Variable Selection. R package version 1.0.

5. Lee, I.-C. and **Hong, Y.** (2017). SeqBayesDesign: Sequential Bayesian Design. R package version 1.0.

6. **Hong, Y.**, and Zhang, M. (2017). GPB: Generalized Poisson Binomial Distribution. R package version 1.0.

7. **Hong, Y.**, Xie, Y., Jin, Z., and King, C. B. (2016). ADDT: A package for analysis of accelerated destructive degradation test data. R package version 2.0.

8. **Hong, Y.**, Xie, Y., and Xu, Z. (2014). SPREDA: Statistical Package for Reliability Data Analysis. R package version 1.0.

9. **Hong, Y.**, Xie, Y., and King, C. B. (2014). ADDT: A package for analysis of accelerated destructive degradation test data. R package version 1.0.

10. **Hong, Y.** (2013). poibin: The Poisson Binomial Distribution. R package version 1.2.

Presentations

Those with an "∗" are invited talks.

1.* *"Spatially Correlated Time-to-Event Model for Titan GPU Failure Data Under Competing Risks,"* INFORMS, Indianapolis, IN   10/2022

2.* *"Reliability Analysis of Artificial Intelligence Systems Using Recurrent Events Data from Autonomous Vehicles,"* QPRC, San Francisco, CA   06/2022

3.* *"Statistical and Deep Learning Methods for Degradation Prediction of Polymeric Materials in PV Systems,"* 2021 NIST/UL Workshop on PV Materials Durability, Virtual   12/2021

4.* *"Statistical and Machine Learning Approaches for Service Life Prediction of PV Materials,"* NIST, Virtual   01/2021

5.* *"Reliability Analysis of Artificial Intelligence Systems Using Recurrent Events Data from Autonomous Vehicles,"* International Virtual Conference on Advanced Statistical Techniques in Business and Industry, ISBIS   12/2020

6.* *"Nonlinear General Path Models for Multivariate Degradation Data with Repeated Measures and Covariates,"* ICISE 2019, Seoul, S. Korea   06/2019

7.* *"Nonlinear General Path Models for Multivariate Degradation Data with Repeated Measures and Covariates,"* MMR 2019, Hong Kong   06/2019

8.* *"Big Data and Reliability Applications: The Complexity Dimension,"* JQT invited session at SRC 2019, Blacksburg, VA   05/2019

9.* *"Spatial Variable Selection via Adaptive Elastic Net and An Application to Virginia Lyme Disease Case Data,"* INFORMS 2018, Phoenix, AZ   11/2018

10.* *"Sequential Test Planning for Polymer Composites,"* Department of IEEM, National University of Singapore   10/2018

11.* *"Sequential Test Planning for Polymer Composites,"* FTC 2018, West Palm Beach, FL   10/2018

12.* *"A Multi-level Trend-renewal Process for Modeling Systems with Recurrence Data,"* Canadian Statistics Society Annual Meeting, 2018, Montreal, Canada   06/2018

13.* *"Big Data and Reliability Applications: The Complexity Dimension,"* IISE Webinar   04/2018

14.* *"Statistical Modeling for Service Life Prediction of PV Materials and Laminates,"* 4th Atlas/NIST Workshop on Photovoltaic Materials Durability, Gaithersburg, MD   12/2017

15.* *"A Flexible Method for Building Degradation Index from Multivariate Degradation Signals,"* INFORMS 2017, Houston, TX   10/2017

16.* *"Sequential Test Planning for Polymer Composites,"* INFORMS 2017, Houston, TX   10/2017

17.* *"Two-sided Tolerance Intervals for the (Log)-Location-Scale Family of Distributions,"* INFORMS 2017, Houston, TX   10/2017

18.* *"Planning Fatigue Tests for Polymer Composites,"*
FTC 2017, Philadelphia, PA   10/2017

19.* *"Sequential Test Planning for Polymer Composites,"* QPRC 2017, Storrs, CT   06/2017

20.* *"Planning Fatigue Tests for Polymer Composites,"* JQT invited session,
SRC 2017, New Brunswick, NJ   05/2017

21.* *"Sequential Test Planning for Polymer Composites,"* Department of
Mathematics and Statistics, University of South Florida   04/2017

22.* *"Bayesian Life Test Planning for Log-Location-Scale Family of Distributions,"*
JQT invited session, INFORMS, Nashville, TN   11/2016

23.* *"Reliability Meets Big Data: Opportunities and Challenges,"* INFORMS,
Nashville, TN   11/2016

24.* *"Sequential Test Planning for Polymer Composites,"* ISE Department,
Wayne State University   11/2016

25.* *"Disentangling and Assessing the Uncertainties in Default Prediction,"*
IASC-ARS, Singapore   12/2015

26.* *"Statistical Methods for Degradation Data with Dynamic Covariates and an
Application to Outdoor Weathering Prediction,"* IASC-ARS, Singapore   12/2015

27.* *"Semiparametric Models for Accelerated Destructive Degradation
Test Data Analysis,"* ISE, NUS, Singapore   12/2015

28.* *"Semiparametric Models for Accelerated Destructive Degradation
Test Data Analysis,"* ISI 2015, Rio, Brazil   07/2015

29.* *"Multivariate Frailty Models for Multi-type Recurrent Event Data
and an Application to Cancer Prevention Trial,"* ISI 2015, Rio, Brazil   07/2015

30.* Discussion on *"The Role of Statistics in Modem Reliability,"*
ISI 2015, Rio, Brazil   07/2015

31.* *"Reliability Meets Big Data: Opportunities and Challenges,"*
Tsinghua University, Beijing, China   06/2015

32.* *"Survival Analysis of Loblolly Pine Trees with Spatially Correlated
Random Effects,"* Peking University, Beijing, China   06/2015

33.* *"Spatio-Temporal Modeling of Degradation Data Collected Over
a Spatial Region,"* MMR 2015, Tokyo, Japan   06/2015

34.* *"Using Degradation Data with Dynamic Covariates to Do
Online Monitoring,"* MMR 2015, Tokyo, Japan   06/2015

35.* *"Invited Panel Discussion on Fostering Successful Collaboration
among Academia, Government, and Industry,"* SRC 2015, Cincinnati, OH   05/2015

36.* *"Reliability Meets Big Data: Opportunities and Challenges,"* Pacific Rim
Statistics Conference on Production Engineering, Shanghai, China   12/2014

37.* *"Statistical Modeling and Analysis of Wavelength Effect On Damage
Based EVA Data,"* NIST, Gaithersburg, MD   12/2014

38.* *"Service Life Prediction of Field-Exposed Units Based on
Laboratory Accelerated Degradation Test Data,"* NIST, Gaithersburg, MD   12/2014

39.* *"Statistical Methods for Degradation Data with Dynamic Covariates and an
Application to Outdoor Weathering Prediction,"* Technometrics *invited session*
at INFORMS, San Francisco, CA   11/2014

40.* *"Reliability Meets Big Data: Opportunities and Challenges,"* ISE Department,
Virginia Tech, Blacksburg, VA   10/2014

41.* *"Planning Fatigue Tests for Polymer Composites,"* Plenary talk
at International Conference for Quality and Applied Statistics, Lima, Peru   08/2014

42.* *"Statistical Methods for Degradation Data with Dynamic Covariates and an
Application to Outdoor Weathering Prediction,"* AMSS,
China Academia of Sciences, Beijing, China   07/2014

43.* *"Planning Fatigue Tests for Polymer Composites,"* NCTS Workshop
on Recent Advances on Big Data and Industrial Statistics,
National Tsing Hua University, Hsin-Chu, Taiwan   06/2014

44.* *"Planning Fatigue Tests for Polymer Composites,"* DuPont, Wilmington, DE   06/2014

45.* *"Service Life Prediction Based on Accelerated Degradation Test Data
from Laboratory and Field ,"* NIST, Gaithersburg, MD   04/2014

46.* *"Degradation Data Analysis Using Nonlinear Mixed-effects Model with
Shape-restricted Regression Splines,"* INFORMS, Minneapolis, MN   11/2013

47.* *"Field Failure Prediction Based on Multi-Level Repair and System
Usage Information,"* INFORMS, Minneapolis, MN   11/2013

48.* *"Accelerated Destructive Degradation Test: Data Analysis and
Test Planning,"* INFORMS, Minneapolis, MN   11/2013

49.* *"Accelerated Destructive Degradation Test: Data Analysis and
Test Planning,"* ENBIS, Ankara, Turkey   09/2013

50.* *"Field Failure Prediction Based on Multi-Level Repair and System Usage Information,"*
International Statistical Institute Satellite Meeting on Statistics
in Business, Industry and Risk Management, Hong Kong   08/2013

51. *"Using Spatial Poisson Regression to Investigate Virginia Lyme Disease Emergence,"*
The 2013 WNAR Conference, Los Angeles, CA   06/2013

52.* *"Accelerated Destructive Degradation Test: Data Analysis and Test Planning,"*
DuPont, Richmond, VA   05/2013

53.* *"System Unavailability Analysis Based on Window-Observed Recurrent Event,"*
NCTS Industrial Statistics Research Group Seminar,
National Tsing Hua University, Hsin-Chu, Taiwan   12/2012

54.* "*Statistical Methods for Degradation Data with Dynamic Covariates and an Application to Outdoor Weathering Prediction*," INFORMS, Phoenix, AZ — 11/2012

55.* "*Statistical Methods for Degradation Data with Dynamic Covariates and an Application to Outdoor Weathering Prediction*," NIST, Gaithersburg, MD — 10/2012

56. "*Photodegradation Path Modeling and Analysis with Nonlinear Mixed Models*," JSM, San Diego, CA — 08/2012

57.* "*Photodegradation Path Modeling and Analysis with Nonlinear Mixed Models*," NCTS Workshop on Industrial Statistics and Its Applications, National Tsing Hua University, Hsin-Chu, Taiwan — 06/2012

58.* "*Field-Failure Predictions Based on Failure-time Data with Dynamic Covariate Information*," the 2nd ICISE, Tainan, Taiwan — 06/2012

59.* "*A Special Non-homogeneous Poisson Process Estimation for Window-Observation Repairable Systems*," ISBIS, Bangkok, Thailand — 06/2012

60.* "*Photodegradation Path Modeling and Analysis with Nonlinear Mixed Models*," QPRC, Long Beach, CA — 06/2012

61.* "*A Tool for Evaluating Time-Varying-Stress Accelerated Life Test Plans With Log-Location-Scale Distributions*," INFORMS, Charlotte, NC — 11/2011

62.* "*Statistical Methods for Modern Reliability Data*," DuPont, Wilmington, DE — 10/2011

63. "*Service Life Prediction Using Accelerated Degradation Data from Laboratory Testing and Outdoor Weathering Data*," JSM, Miami Beach, FL — 08/2011

64.* "*A class of models for degradation data with dynamic covariates*," The Seventh International Conference on MMR, Beijing, China — 06/2011

65.* "*Degradation Models, Data Analyses and an Application in Service Life Prediction*," QPRC, Roanoke, VA — 06/2011

66.* "*Insights on the Robust Variance Estimator under Recurrent-events Model*," Biostatistics Department, University of Pennsylvania, Philadelphia, PA — 09/2010

67. "*Field-Failure and Warranty Prediction Using Auxiliary Use-rate Data*," the Joint Statistical Meetings (JSM), Vancouver, Canada — 08/2010

68. "*Field failure prediction using dynamics environmental data* ," New Researcher Conference, UBC, Vancouver, Canada — 07/2010

69.* "*Semiparametric Modeling for Photodegradation Paths with Dynamic Environmental Information*," International Conference on Statistical Analysis of Complex Data, Kunming, China — 07/2010

70.* "*Prediction Intervals for Remaining Life of Power Transformers Based on Left Truncated and Right Censored Lifetime Data*," National University of Singapore, Singapore — 06/2010

71.* "*Field-Failure and Warranty Prediction Using Auxiliary Use-rate Data*," Nanyang Technological University, Singapore — 06/2010

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72.* *"Field-Failure and Warranty Prediction Using Auxiliary Use-rate Data,"*
the Joint Research Conference, NIST, Gaithersburg, MD   05/2010

73.* *"Prediction Intervals for Remaining Life of Power Transformers Based on
Left Truncated and Right Censored Lifetime Data,"* ISE Department,
Virginia Tech, Blacksburg, VA   03/2010

74. *"Prediction Intervals for Remaining Life of Power Transformers Based on
Left Truncated and Right Censored Lifetime Data,"* the Joint Statistical
Meetings (JSM), Washington, DC   08/2009

75. *"The Importance of Identifying Different Components of Mixture Distribution
in Reliability Predictions,"* the Joint Statistical Meetings (JSM), Denver, CO   08/2008

76. *"Prediction Intervals for Remaining Life of Power Transformers Based on
Left Truncated and Right Censored Lifetime Data,"* 2008 Spring Research
Conference on Statistics in Industry and Technology, Atlanta, GA   05/2008

77. *"Normal Approximations for Computing Confidence Intervals for
Log-Location-Scale Distribution Probabilities,"* the Joint Statistical
Meetings (JSM), Seattle, WA   08/2006

Teaching

- **Assistant/Associate/Full Professor**, Virginia Tech   08/2009-*present*
  - Biological Statistics (STAT 3615, Spring 2021, Spring 2022)
  - Theoretical Statistics II (Stat 4106, Spring 2014, Spring 2018, Spring 2019)
  - Linear Models Theory (Stat 5124, Spring 2011, Spring 2012, Spring 2013, Spring 2014, Spring 2015, Spring 2018, Spring 2019, Spring 2020, Spring 2022)
  - Statistical Methods for Reliability Analysis (STAT5454/4984, Spring 2021)
  - Reliability and Survival Analysis (Stat 5454, Fall 2012)
  - Deep Learning and Applications in Survival Analysis (Stat 5594, Spring 2018, Spring 2020)
  - Biometry I (Stat 5605, Fall 2021)
  - Biometry II (Stat 5606, Spring 2015, Spring 2017, Spring 2021)
  - Survival Analysis (Stat 5684, Fall 2009, Fall 2010; Stat 5684, Fall 2014, Fall 2016, Fall 2021)
  - Longitudinal Data Analysis (Stat 5694, Spring 2010, Fall 2011, Fall 2013, Spring 2015, Spring 2017)

- **Lab Instructor**, Department of Statistics, Iowa State University   08/2007-12/2007
  - Introduction to Business Statistics II (Stat 326, Fall 2007)

- **Teaching Assistant**, Department of Statistics, Iowa State University   08/2004-07/2005

    – Theory of Probability and Statistics (Stat 447, Summer 2005)

    – Introduction to Business Statistics I (Stat 226, Fall 2004, Spring 2005, Summer 2005)

    – Introduction to Statistics for Engineers (Stat 105, Fall 2004, Spring 2005)

Student Advising

- Current PhD advisor for

  1. Jiayi Lian (expected summer 2023), co-advising with Xinwei Deng, dissertation research on the interface of statistics and machine learning.
  2. Jie Min (expected spring 2024), dissertation research on reliability of AI systems.
  3. Zhengzhi (Alex) Lin (expected spring 2024), dissertation research on statistical computing and degradation modeling.
  4. Xinyi Song (expected spring 2025), dissertation research on the interface of statistics and machine learning.
  5. Lina Lee (expected spring 2025), dissertation research on the interface of statistics and machine learning.
  6. Simin Zheng (expected spring 2026), dissertation research on reliability of AI systems.

- Former PhD advisor for

  1. Yuanyuan Duan, Spring 2014, co-advised with Jie Li, dissertation on "Statistical Predictions Based on Accelerated Degradation Data and Spatial Counts Data", Statistics Manager, AbbVie.
  2. Khaled Bedair, Fall 2014, dissertation on "Statistical Methods for Multi-type Recurrent Event Data Based on Monte Carlo EM Algorithms and Copula Frailties", Assistant Professor, Qatar University.
  3. Zhibing Xu, Fall 2014, dissertation on "Statistical Modeling and Predictions Based on Field Data and Dynamic Covariates", Senior Quantitative Analytics, Freddie Mac.
  4. Caleb King, Spring 2015, dissertation on "Bridging the Gap: Some Problems in Model Specification, Estimation, and Optimal Design from Reliability and Lifetime Data", Research Statistician Tester, JMP.
  5. Yimeng Xie, Spring 2016, dissertation on "Advancements in Degradation Modeling, Uncertainty Quantification, and Spatial Variable Selection", Statistician/Senior Manager, AstraZeneca China.
  6. Miao Yuan, Summer 2016, dissertation on "Corporate Default Predictions and Methods for Uncertainty Quantifications", Data Scientist, Meta.
  7. Zhongnan Jin, Summer 2019, dissertation on "Statistical Methods for Multivariate Functional Data Clustering, Recurrent Event Prediction, and Accelerated Degradation Data Analysis", Data Scientist, Google.
  8. Thomas Lux, Summer 2020, co-advised with Layne Watson from CS, dissertation on "Interpolants, Error Bounds, and Mathematical Software for Modeling and Predicting Variability in Computer Systems", Research Scientist, Meta.

9. Li Xu, summer 2021, co-advised with Layne Watson from CS, dissertation on "Statistical Methods for Variability Management in High-Performance Computing," Postdoc Researcher, Harvard.

10. Yueyao Wang, summer 2022, co-advised with Xinwei Deng, dissertation research on "Advancements on the Interface of Computer Experiments and Survival Analysis," Biostatistician, Sanofi.

- Visiting Students

  - I-Chen Lee, visited 2015, from National Tsing-Hua University, became Assistant Professor at National Cheng Kung University.

  - Hung-Ping Tung, 2019, from National Tsing-Hua University, became Assistant Professor at National Chiao Tung University.

- Served on 25 PhD and 43 MS committees for graduate students.

  - PhD committee member for, Laura Freeman, Jennifer Kensler, Liaosa Xu, Yimeng Peng, Chen Chen, Lulu Cheng, Austin Rhodes, Rebecca Dickinson, Qing Li, Yangyi Xu, Tianlei Chen, Lin Zhang, Xiang Zhang, Yi Liu, Zhenguo Gao, Angang Zhang, Ting Guan, Jinhui Sun, Yafei Zhang, Tyler Chang, Quyen Do, Yanran Wei, Qing Guo, Xueying Liu, Kexin Xie.

  - MS committee member for, Salman Cheema, Dengfeng Zhang, Xinran Hu, Hui Yi, Wei Ma, Zhibing Xu, Peng Sun, Mingqian Dai, Yan Li, Matthew Lanham, Rong Nie, Joel Anderson, Gabi Marquez Betz, Wanjin Zhang, Yangyi Xu, Jennifer Cheng, Jon Atwood, Shuyu Chu, Rajat Shrivastava, Hongyue Sun, Hao Yu, Meng Zhao, Shuai Zhang, Wenmeg Tian, Karen Narayanan, Babak Barazandeh, Linjun Li, Zhiyang Zhang, Yin Yuan, Deelan Jalil, Shu Han, John Smith, Jiafeng Zhu, Peng Xu, Young Ho Yun, Yanran Wei, Chaoran Wang, Eric Bae, Wenjun Han, Tsering Dolkar, Lina Lee, Radhakrishna Adhikari, Dan Liang.

Professional Service

- Service for American Statistical Association

  - Joint Research Conference 2024 (sponsored by ASA), Co-chair, 2023-2024
  - Fall Technical Conference 2022 (co-sponsored by ASA and ASQ), program chair, 2022
  - Spring Research Conference (sponsored by ASA), organization committee member, 2019
  - JSM program committee member, 2018
  - ASA Section on Physical and Engineering Sciences program chair-elect, chair, 2016-2018
  - Spring Research Conference, management committee member, since 2023
  - ASA Section on Physical and Engineering Sciences award committee member, since 2016

- Service for American Society for Quality

  - Fall Technical Conference, program committee member, 2023
  - Lloyd Nelson Award committee chair, 2020-2021

- Service for ISBIS
    - Associate Editor for ISBIS Newsletter, 2013-2020
    - ISBIS biennial conference program committee, 2018
- Service for INFORMS
    - QSR council member, 2019-2021
    - QSR international committee, 2020-2021
    - QSR webinar committee, 2019-2021
    - QSR paper competition reviewer, 2014-2019, 2021, 2022
    - QSR Best refereed paper competition committee, co-chair, 2022
    - IISE-DSQR best paper award committee, 2021
    - ISERC best paper competition reviewer, 2019
- External Reviewers
    - DOE proposal reviewer and panelist
    - Scottish Government Health Directorates proposal reviewer
    - Hong Kong Research Grants Council proposal reviewer
    - Chile National Research and Development Agency proposal reviewer
    - Tenure and Promotion review, University of Electro-Communications, Japan
    - Tenure and Promotion review, University of Michigan Dearborn
    - Tenure and Promotion review, Arizona State University
- Others
    - International Conference on Mathematical Methods in Reliability: Technical Program Committee, 2011, 2019
    - International Chinese Statistical Association (ICSA): Student Award Committee for the 2016 ICSA International Conference
    - External Examiner for Ph.D. Thesis for McMaster University, Arizona State University
    - Organized numerous invited sessions for several national/international conferences. Since 2015, organized invited session on reliability for SRC 2015, ISI WSC 2015, SRC 2016, 2023, US-China Quality Conference 2016, MMR 2017, JSM 2018, MMR 2019, INFORMS 2023.
- Referee for
    - *Technometrics*
    - *IIE Transactions*
    - *IEEE Transactions on Reliability*
    - *Journal of Quality Technology*
    - *Naval Research Logistics*
    - *Journal of Statistical Planning and Inference*

- *Journal of Statistical Computation and Simulation*
- *Journal of Biopharmaceutical Statistics*
- *Lifetime Data Analysis*
- *Computational Statistics and Data Analysis*
- *Journal of the American Statistical Association*
- *The Annals of Applied Statistics*
- *Journal of Machine Learning Research*
- *Journal of American Mathematical Society*
- *Journal of Multivariate Analysis*
- *European Journal of Operation Research*
- *Reliability Engineering and System Safety*
- *Journal of Manufacturing Systems*
- *IEEE Transactions on Power Delivery*
- *IEEE Transactions on Pattern Analysis and Machine Intelligence*
- *Journal of Risk and Reliability*
- *Applied Stochastic Models in Business and Industry*
- *Annals of the Institute of Statistical Mathematics*
- *Reliability Engineering & System Safety*
- *Entropy*
- *Pharmaceutical Statistics*
- *Journal of Applied Statistics*
- *Statistics in Medicine*
- *Statistics Analysis and Data Mining*
- *Statistica Sinica*
- *Computers & Operations Research*
- *Quality and Reliability Engineering*
- *Applied Economics Letters*
- *International Journal of Forecasting*
- *Journal of Systems Science and Complexity*
- *Journal of Statistical Theory and Practice*
- *Quality Engineering*
- *South African Journal of Statistics*
- *Statistical Analysis and Data Mining*
- *Statistics Papers*
- *The American Statistician*

Committee Service at VT

- Department Personnel Committee, Chair, Fall 2016, Spring 2017;
  Member, Fall 2014 - Spring 2016, Fall 2022 - Spring 2024.

- Department Policy/Procedures Committee, Chair, Since Fall 2016.

- Department Full Professor Promotion Committee, Member, 2021-2023.

- Department Executive Committee, Member, Spring 2017.

- Department Graduate Program Committee, Member, Since Fall 2018.

- Department Corporate Partners Committee, Member, Since Fall 2016.

- Qualifying Exam Committee, Member, Spring 2011 - Fall 2015, Since Spring 2018.

- Seminar Committee, Member, Fall 2009, Spring 2010; Chair, Fall 2010 - Spring 2013.

- College Cluster Strategy Committee, Member, Fall 2012, Spring 2013.

- Corporate Partners' Conference Seminar Committee (Member, 2011; chair, 2012).

Skills

- Computer Skills

  Statistical software: R, SAS, JMP;
  Programming Language: C/C++, Python, SQL.

- Languages

  Chinese (Native); English (Fluency).

Professional Memberships

- Elected Member, The International Statistical Institute (ISI)

- Senior Member, American Society for Quality (ASQ)

- Member, The American Statistical Association (ASA)

- Member, Institute of Mathematical Statistics (IMS)

- Member, The International Society for Business and Industrial Statistics (ISBIS)

- Member, The Institute for Operations Research and the Management Sciences (INFORMS)

- Member, Mu Sigma Rho

- Full member, Sigma Xi