

Curriculum Vitae

Name: Chao Hu
Title: Collins Aerospace Professor in Engineering Innovation
Associate Professor
School of Mechanical, Aerospace, and Manufacturing Engineering
University of Connecticut
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Research Interests

- Engineering Design under Uncertainty, Modeling and Health Management of Lithium-ion Batteries, Prognostics and Health Management

Education

- **Ph.D., Mechanical Engineering** *Aug. 2007–Aug. 2011*
University of Maryland, College Park, MD
Dissertation Title: “Advances in System Reliability-Based Design and Prognostics and Health Management (PHM) for System Resilience Analysis and Design”
Advisor: Dr. Byeng D. Youn Co-Advisor: Dr. Bongtae Han
- **B.E., Engineering Physics** *Sep. 2003–Jul. 2007*
Tsinghua University, Beijing, China

Work Experience

- **Associate Professor**, University of Connecticut, CT *Aug. 2022–Present*
- **Associate Professor**, Iowa State University, IA *Aug. 2021–Aug. 2022*
- **Assistant Professor**, Iowa State University, IA *Aug. 2015–Aug. 2021*
- **Principal Scientist**, Medtronic, Inc., MN *Jun. 2014–Jul. 2015*
- **Senior Reliability Engineer**, Medtronic, Inc., MN *Oct. 2011–May 2014*
- **Graduate Research Assistant**, University of Maryland, College Park, MD *Aug. 2007–Aug. 2011*
- **Researcher and Co-Teacher**, Seoul National University, Seoul, South Korea *Sep. 2010–May 2011*

Awards and Recognitions

- Paper of Distinction Award (ASME Design for Manufacturing and the Life Cycle Conference) 2025
- Best Paper Award (IMAC-XLIII Data Science in Engineering) 2025
- The World’s Top 2% Scientists (Stanford University) 2024, 2025
- Collins Aerospace Professor in Engineering Innovation (University of Connecticut) 2024–2027
- Best Student Paper Award (Annual Reliability & Maintainability Symposium) 2023
- Highly Cited Research Paper 2020 (Applied Energy) 2022
- Papers of Distinction Award – 9 out of 118 Accepted (ASME Design Automation Conference) 2022
- ASME Reviewers of the Year Award (Journal of Mechanical Design) 2019

- Best Track Paper Award (IISE Annual Conference, Engineering Economy Track) 2019
- ASME Design Automation Young Investigator Award 2018
- NSF CISE Research Initiation Initiative (CRII) Award 2016
- Highly Cited Research Paper 2012-2013 (Applied Energy) 2015
- Star of Excellence Individual Award (Medtronic, Inc.) 2014
Awarded to 2 out of over 20,000 employees
- Ford Motor Company - Best Paper Award (ASME Design Automation Conference) 2013
- Best Paper Award (IEEE PHM Conference, IEEE Reliability Society) 2012
- Top 10 Best Paper Award out of 118 Accepted (ASME Design Automation Conference) 2012
- Top 10 Best Paper Award out of 122 Accepted (ASME Design Automation Conference) 2011
- C. Raymond Knight Scholarship Award (University of Maryland, College Park) 2010

Teaching Experience

- **Instructor**, University of Connecticut *Jan. 2023—Present*
 Design under Uncertainty and Health Prognostics, Spring 2026 (7 graduate students, 4.6 out of 5)
 Design of Machine Elements, Fall 2025 (70 undergraduate students, 4.2)
 Design of Machine Elements, Fall 2024 (122 (= 67 + 55) undergraduate students, 4.3)
 Probabilistic Machine Learning for Engineering Design and Health Prognostics, Spring 2024 (11 graduate students, 4.3)
 Design of Machine Elements, Fall 2023 (41 undergraduate students, 3.8)
 Basic Concepts of Continuum Mechanics, Spring 2023 (27 graduate students, 4.1)
- **Instructor**, Iowa State University *Sep. 2015—Present*
 Mechanical Component Design, Spring 2022 (52 undergraduate students, student rating: 4.3 out of 5)
 Probabilistic Engineering Analysis and Design, Spring 2022 (12 graduate students, 4.67)
 Manufacturing Engineering, Spring 2021 (49 undergraduate students, student rating: 4.6)
 Mechanical Component Design, Fall 2020 (63 undergraduate students, student rating: 3.9)
 Probabilistic Engineering Analysis and Design, Spring 2020 (10 graduate students, N.A.)
 Manufacturing Engineering, Fall 2019 (75 undergraduate students, 4.6)
 Mechanical Component Design, Fall 2019 (52 undergraduate students, 4.2)
 Probabilistic Engineering Analysis and Design, Spring 2019 (20 graduate students, 4.5)
 Mechanical Component Design, Fall 2018 (74 undergraduate students, 3.8)
 Probabilistic Engineering Analysis and Design, Spring 2018 (15 graduate students, 4.9)
 Mechanical Component Design, Fall 2017 (75 undergraduate students, 4.3)
 Mechanical Component Design, Spring 2017 (88 undergraduate students, 4.0)
 Manufacturing Engineering, Fall 2016 (81 undergraduate students, 4.1)
 Manufacturing Engineering, Spring 2016 (89 undergraduate students, 4.4)
 Manufacturing Engineering, Fall 2015 (59 undergraduate students, 4.0)
- **Co-Teacher**, Seoul National University *Sep. 2010—May. 2011*
 Engineering Mathematics (undergraduate course with 45 students)
 Advances in Reliability-Based Design (graduate course with 12 Students)
- **Teaching Assistants**, University of Maryland, College Park *Sep. 2007—Aug. 2009*
 Thermodynamics (undergraduate course with 32 Students)
 Electronics and Instrumentation II (undergraduate course with 26 Students)
 Statistical Methods for Product Development (two undergraduate courses with 87 students in total)
 Fluid Mechanics (undergraduate course with 29 students)

Advising Experience

(* denotes my role as students' co-advisors)

▪ Postdocs

Name	Research Topic, Current Job	Expected Date of Completion
Dr. Steve Paul	Deep Learning and IIoT for Bearing Prognostics	<i>Feb. 2024 – Feb. 2025</i> (Completed)
Dr. Mohammad S. Behtash	Design for Remanufacturing and Battery Charging Control	<i>Aug. 2022 – Jul. 2024</i> (Completed)
Dr. Venkat P. Nemani	Deep Learning and IIoT for Bearing Prognostics, Data Scientist at Corteva Agriscience	<i>Oct. 2019 – Mar. 2022</i> (Completed)
Dr. Zhixiong Li	Ensemble Learning for Machinery Failure Prognostics, Faculty of Mechanical Engineering at Opole University of Technology, Opole, Poland	<i>Sep. 2016 – Sep. 2017</i> (Completed)

▪ Ph.D. Students

Name	Dissertation Title/Topic, Current Job	Expected Date of Completion
Hui Hua	Battery Aging Modeling and State-of-Health Estimation	<i>Dec. 2028</i>
Thanh Mai	Large Foundational Models for Machine Health Monitoring	<i>Dec. 2028</i>
Aidan Lawlor	Battery Safety Risk Monitoring	<i>Dec. 2028</i>
Mohammad Mundiwala	Physics-Informed Machine Learning for Automated Inspection in Remanufacturing and Machine Health Monitoring	<i>May 2028</i>
Benjamin Nowacki	Physics-Informed Machine Learning for Battery Fast Charging	<i>Dec. 2026</i>
Yang Kang Chua	Real-Time Machine Learning for Structural Health Monitoring	<i>Dec. 2026</i>
Sina Navidi	Physics-Informed Machine Learning for Battery Degradation Diagnostics	<i>Dec. 2026</i>
Tingkai Li	Battery Early Life Prediction and Capacity Fade Modeling	<i>Jun. 2026</i>
Dr. Adam Thelen	Machine learning-based aging models for estimating battery state of health and predicting future degradation	<i>Aug. 2023</i> (Graduated)
Dr. Hao Lu	Advances in Deep Learning and IIoT Toward Industry-Scale Machine Health Monitoring	<i>May 2023</i> (Graduated)
Dr. Jinqiang Liu	Data-driven early prediction and modeling of lithium-ion battery capacity degradation (Co-Advisor: Dr. Zhaoyu Wang)	<i>Dec. 2022</i> (Graduated)
Dr. Vahid Barzegar*	Real-Time Machine Learning for High-Rate State Estimation (Advisor: Dr. Simon Laflamme)	<i>Dec. 2022</i>
Dr. Todd Thompson	Comparative Studies on Fatigue Strength Estimation and Kriging-Assisted Reliability-Based Design Optimization, Staff Applied Mechanics Engineer at John Deere	<i>Aug. 2022</i> (Graduated)
Dr. Yu-Hui Lui*	Computational and Data-Enabled Approaches for Modeling and Prognostics of Engineered Systems (Advisor: Dr. Shan Hu)	<i>Dec. 2021</i> (Graduated)

Name	Dissertation Title/Topic, Current Job	Expected Date of Completion
Dr. Sheng Shen	Data-Driven Approaches for Battery State Estimation and Early Cycle Life Prediction, Machine Learning Engineer at Tula Technology	<i>Nov. 2020</i> (Graduated)
Dr. Meng Li	Advances in Reliability Analysis and Health Prognostics Using Probabilistic Machine Learning, Data Scientist at National Oilwell Varco	<i>Jun. 2020</i> (Graduated)
Dr. Mohammad K. Sadoughi	Data-Driven Approaches for Improving Failure Resilience of Engineered Systems, Research Scientist at Amazon	<i>May 2019</i> (Graduated)
Dr. Austin Downey	Dense Sensor Networks for Health Monitoring and Prognostics of Mesoscale Structures (Co-Advisor: Dr. Simon Laflamme), Assistant Professor at the University of South Carolina	<i>Jul. 2018</i> (Graduated)

▪ **M.S. Students**

Name	Dissertation Title/Topic	Date of Completion
Austin Bray	Prediction Basis Generation for Improved Interpretable Fault Detection And Finite Element Simulation of Fluid Infilled Metamaterials (Co-Advisor: Dr. Hongyi Xu)	<i>May. 2024</i> (Graduated)
Ankush Mishra	Design and Multistage Decision Making for Remanufacturing	<i>May 2023</i> (Graduated)
Matthew Nelson*	Multi-step ahead state estimation with hybrid algorithm for high-rate dynamic systems (Advisor: Dr. Simon Laflamme)	<i>Aug. 2022</i> (Graduated)
Yifei Li	Ensemble Bias-Correction based State of Charge Estimation of Lithium-Ion Batteries	<i>Dec. 2017</i> (Graduated)
Sumin Seong*	Design Optimization Under Uncertainty for Reliable Power Generation Performance of Piezoelectric Energy Harvester (Advisor: Dr. Soobum Lee at the University of Maryland, Baltimore County)	<i>May 2015</i> (Graduated)

▪ **Undergraduates**

Name	Research Topic	Date of Completion
Duncan Craine	Battery Shorting Resistance Estimation	<i>Aug. 2025</i>
Aidan Lawlor Jake Dorchak	Testbed for Battery Shorting Experiments	<i>Dec. 2024</i>
Kevin Lyle	Machine Learning for Machine Health Monitoring	<i>May 2024</i>
Mohammad Mundiwala Aidan Lawlor	Machine Learning for Machine/Battery Health Monitoring	<i>May 2024</i>
Benjamin Lombard Akshay Zaveri	Basics of Machine Learning for Health Monitoring	<i>Dec. 2023</i>

Name	Research Topic	Date of Completion
Rithin Armstrong Benjamin Nowacki Charli Zaretsky	Machine Learning for Battery Life Prediction	May 2023
Gabriel Fountain Cade Allen	Algorithms for Reliability-Based Design Optimization Physics-Informed Deep Learning for Bearing Failure Prognostics	Dec. 2022 May 2022
Austin Bray Jacob Claus Khai Shawn Khaw	Machine Learning for Bearing Failure Prognostics Machine Learning for Battery Early Life Prediction	May 2022 May 2022
Tingkai Li Kate Lyon	Machine Learning for Battery Early Life Prediction Machine Learning for Battery Early Life Prediction	Dec. 2021 May 2021
Evan Hartman Austin Bray	Machine Learning for Bearing Failure Prognostics	May 2021
Adam Thelen Yingying Huang Amrita Ghosh Carter Foughty	Recurrent Neural Network for Real-Time State Estimation On-board Monitoring and Correction of Shaft Unbalance	May 2020 May 2020
Tyler Markve Patrick Black	Battery Lifetime Prediction Using Dynamic Charge/Discharge Profiles	May 2020
Nick Schnoebelen Jonathan McGill	Physics-Informed Deep Learning for Bearing Failure Prognostics	Dec. 2019
Martin Martinez Dalton Louks	Physics-Informed Deep Learning for Bearing Fault Diagnostics Machine Learning for Bearing Fault Diagnostics	Aug. 2019 May 2019
Zhi-Fang Tan	Deep Learning for State-of-Health Monitoring of Lithium-Ion Battery	Dec. 2018
Jhamaree Elam	Data-Driven Prognostics of Lithium-Ion Battery Using Gaussian Process Regression	Aug. 2018
Max Hendricks Garrett D. Bunge Aditya K. Ranawat	Deep Learning for Bearing Fault Diagnostics Deep Learning for Bearing Fault Diagnostics	Aug. 2018 May 2018
Olivia Pfeiffer	Prognostics of Bearings in Wind Turbine Gearboxes	Aug. 2017
Nicole Essner Nolgie O.O. Colón	Vibration-based Fault Diagnostics and Failure Prognostics of Wind Turbine Gearbox	Aug. 2016
Jajun Ryu	Maximum Entropy Modeling with Discrete Data	May 2016
Ha Lim Jeong Cole J. Tenold Stetsen Greiner	Online Detection of Lithium Plating for Lithium-Ion Battery through High Precision Coulometry	May 2016
John Bavlsik	Data-Driven Prognostics of Lithium-Ion Battery Using Bilinear Kernel Regression	Dec. 2015

Research Grants

[†] Denotes industry-sponsored project.

[‡] Denotes industry collaboration involved (no industry funding).

Overview: PI/Co-PI on 42 research grants totaling \$9.8M, including from government agencies (NSF, DOE, DOT, and DOD) and industry. Among them, Hu's share supporting his activities is about \$5.8M, of which the total amount serving as PI is about \$5.1M.

Title of Grant, Role	Agency	Dollar Amount	Beginning and End Dates
POSE: Phase I: ModularML: An Open-Source Ecosystem for Modular and Extensible Machine Learning [‡] , PI (Co-PI: Dr. Fei Miao)	National Science Foundation	\$299,995	06/2026–05/2027
Cyber-Physical Digital Twin through Hybrid Simulations for Enhanced Durability and Reliability of Naval Assets [‡] , Co-PI (PIs: Dr. Jiong Tang, Dr. Richard Christenson, Dr. Farhad Imani)	Office of Naval Research through NIUVT	\$880,000	01/2026–08/2031
Collaborative Research: III: Small: Physics-Informed Probabilistic Health Forecasting for Risk-Based Decisions in Small-Data Environments [‡] , UConn PI (UM-Dearborn PI: Dr. Zhen Hu)	National Science Foundation	\$250,000	01/2026–08/2029
Development of Battery Pack Model for Utility Scale BESS Operational Data [‡] , sole PI	FM Global	\$70,000	11/2025–08/2026
Machine Health Analytics for Predictive Maintenance of Industrial Equipment [†] , sole PI	Grace Technologies	\$150,000	08/2025–08/2027
Physics-Informed Probabilistic Machine Learning for Health Prognostics [‡] , UConn PI (UConn Co-PI: Dr. Jiong Tong)	Office of Naval Research through NIUVT	\$640,004	09/2025–05/2028
Probabilistic Machine Learning for Equipment Health Monitoring Using Laboratory and Field Data [†] , sole PI	Percēv, LLC	\$44,461	11/2024–03/2025
Physics-Informed Machine Learning and Transfer Learning for Rapid Degradation Diagnostics of Lithium-Ion Batteries [†] , sole PI	Honda Research Institute Europe GmbH	\$91,000	08/2024–08/2025
Adaptive and Resilient Path Planning with Structural Health Prognostics [‡] , sole PI	US Army through the D ² REAM Center	\$200,000	08/2024–12/2026
Impedance based Li-Ion Battery Management Systems using Machine Learning [‡] , UConn Co-PI (UConn PI: Dr. Sung-Yeul Park)	Office of Naval Research through NIUVT	\$600,000	01/2024–08/2027
Battery Shorting Risk Monitoring for Proactive Safety [‡] , UConn PI (UConn Co-PIs: Dr. Sung-Yeul Park, Dr. Naba Karen, and Dr. Jiong Tang)	Office of Naval Research through NIUVT	\$250,717	01/2024–08/2026
Collaborative Research: Concurrent Design Integration of Products and Remanufacturing Processes for Sustainability and Life Cycle Resilience [‡] , UConn PI (UIUC PI: Dr. Yumeng Li)	National Science Foundation	\$240,000	05/2024–04/2027

Title of Grant, Role	Agency	Dollar Amount	Beginning and End Dates
Battery State of Health and Remaining Useful Life Estimation [†] , sole PI	The MathWorks, Inc.	\$120,000	08/2023–07/2027
Data-Driven Design Decision Support for Remanufacturing of High-Value Components in Industrial and Agricultural Equipment [‡] , PI (UD PI: Gül E. Kremer, UIUC PIs: Pingfeng Wang and Harrison Kim, Mississippi State PI: Junfeng Ma)	Department of Energy	\$505,796	04/2023–09/2025
STTR Phase II: Probabilistic and Explainable Deep Learning for the Intuitive Predictive Maintenance of Industrial and Agricultural Equipment [‡] , Co-PI (PI: Andrew Zimmerman at Grace Technologies)	National Science Foundation	\$1M	12/2022–11/2024
Topology-Aware Learning and Modeling of High-Rate Dynamic Systems, PI (Co-PI: Simon Laflamme)	Air Force Office of Scientific Research	\$540,000	08/2022–08/2026
CDS&E: Health-Aware Optimization of Battery Charging for Proactive Prevention of Lithium Plating, PI (Co-PIs: Pranav Shrotriya and Cajetan I Nlebedim)	National Science Foundation	\$396,312	08/2022–07/2026
Physics-Based Probabilistic Prognostics for Battery Health Management [‡] , UConn PI (ISU PI: Shan Hu, ISU Co-PI: Simon Laflamme)	National Science Foundation	\$384,825	08/2022–05/2025
RTML: Small: Collaborative: A Programming Model and Platform Architecture for Real-time Machine Learning for Sub-second Systems, UConn PI (ISU PI: Simon Laflamme)	National Science Foundation	\$240,000	08/2022–09/2024
From the Landfill to the Grid: Repurposing Used Batteries for Resilient Grid Storage [‡] , UConn PI (ISU PI: Cary Pint)	Iowa Economic Development Authority	\$294,859	08/2022–10/2023
Quantification of financial and environmental benefits tradeoff in multi-generational product family development considering Re-X performances [‡] , ISU Co-PI (UIUC PIs: Harrison Kim and Pingfeng Wang, ISU PI: Gül E. Kremer)	Department of Energy	\$500,000	07/2021–06/2023
Design Iteration Support Tool to Sustain Remanufacturability [‡] , Co-PI (PI: Gül E. Kremer, Other Co-PIs: Kyung J. Min and Matthew C. Frank)	Department of Energy	\$248,638	07/2021–06/2023
Predicting Battery Lifetime with Early-Life Data for Grid Applications [‡] , UConn PI (ISU PIs: Anne Kimber, Zhaoyu Wang, and Gül E. Kremer)	Iowa Economic Development Authority	\$280,070	01/2021–01/2024
STTR Phase I: Probabilistic and Explainable Deep Learning for the Intuitive Predictive Maintenance of Industrial and Agricultural Equipment [‡] , Co-PI (PI: Andrew Zimmerman at Grace Technologies)	National Science Foundation	\$256,000	12/2020–05/2022
Deep Learning and IIoT for Predictive Maintenance of Industrial Equipment (Phase II) [†] , sole PI	Iowa Regents Innovation Fund	\$100,000	07/2020–05/2021

Title of Grant, Role	Agency	Dollar Amount	Beginning and End Dates
Onboard Monitoring of Shaft Unbalance and Bearing Health (Phase 2) [†] , sole PI	Vermeer Corporation	\$85,000	08/2020–08/2021
Data-Driven Design Decision Support for Re-X of High-Value Components in Industrial and Agricultural Equipment [‡] , PI (Co-PI: Gül E. Kremer) [REMADE Project Showcase]	Department of Energy	\$100,000	09/2019–01/2021
Onboard Monitoring of Shaft Unbalance and Bearing Health (Phase 1) [†] , sole PI	Vermeer Corporation	\$35,000	09/2019–03/2020
PFI-TT: Physics-based Deep Transfer Learning for Predictive Maintenance of Industrial and Agricultural Machinery [‡] , PI (Co-PIs: Matthew J. Darr, Simon Laflamme, and Carey E. Novak)	National Science Foundation	\$290,094	08/2019–01/2023
Deep Learning and IIoT for Predictive Maintenance of Industrial Equipment [†] , sole PI	Iowa Regents Innovation Fund	\$105,800	07/2019–07/2020
Reliability Analysis of Hydraulic Drive Systems (Phase II) [†] , sole PI	Deere & Company	\$35,000	06/2019–09/2019
Intelligent Fault Diagnostics of Rolling-Element Bearings [†] , sole PI	Grace Engineered Products and ISU	\$39,351	01/2019–09/2019
High-Fidelity Performance/Degradation Modelling of Utility-Scale Battery Energy Storage Systems, PI (Co-PIs: Zhaoyu Wang and Venkataramana Ajjarapu)	Electric Power Research Center	\$162,000	07/2018–06/2021
Reliability Analysis of Hydraulic Drive Systems [†] , sole PI	Deere & Company	\$98,000	01/2018–04/2019
Validation of Computer Models for Engineering Systems with Multiple Dynamic Responses, sole PI	Center for e-Design	\$15,000	09/2017–09/2018
Predictive Modeling with Automated Analytics for Intelligent Bearing Prognostics [†] , sole PI	Iowa Regents Innovation Fund	\$50,000	07/2017–05/2018
Data-Driven Dynamic Reliability Assessment of Lithium-Ion Battery Considering Degradation Mechanisms [‡] , PI (Co-PI: Shan Hu)	National Science Foundation	\$330,000	08/2016–07/2020
Efficient Reliability-based Design Optimization of Engineered Systems with Multiple Inter-Dependent Components, sole PI	Center for e-Design	\$30,000	08/2016–08/2018
Lifetime Prediction of Hybrid Energy Storage Devices in Operating and Storage Conditions [‡] , ISU PI (Prime Contractor: Carbon Solutions Inc.)	US Army SBIR Phase II	\$120,000	07/2016–07/2021
CRII: CPS: Designing Complex Cyber-Physical Systems for Failure Resilience, sole PI [NSF Computer Systems Research Spotlight Project]	National Science Foundation	\$175,000	06/2016–05/2019
Model Validation and Uncertainty Quantification of Medical Devices [†] , sole PI	Medtronic	\$30,000	06/2016–03/2018

Title of Grant, Role	Agency	Dollar Amount	Beginning and End Dates
On-Board Prediction of Remaining Useful Life of Lithium-Ion Battery, sole PI	Department of Transportation	\$50,000	03/2016–02/2017

Publications

+ Denotes student/postdoc co-author.

* Denotes corresponding author.

- Overview: 101 journal articles published/accepted; one book, three book chapters; one invited commentary; two US patents issued and two filed; nine paper awards.
- Citation Highlights (statistics as of June 2026): Google Scholar citations: h = 48, and 9,940 cites in total; several journal articles were among the top 3% most cited articles of the respective journals; a total of 24 articles had received more than 100 cites each per the Google Scholar data.

Journal Articles (Under Review/Revision)

1. Hu C.*, Hu Z., Navidi S.⁺, Li T.⁺, Liu H., Chao M. A., Lu H.⁺, Downey A., Cross E. J., and Laflamme S., “A Critical Review of Physics-Informed Machine Learning for Health Diagnostics and Prognostics,” Under Review, *Mechanical Systems and Signal Processing*, 2026. [Invited Survey Paper]
2. Wang X., Chua Y.K.⁺, Mundiwala M.⁺, Hu C., and Hu Z.*, “Reinforcement Learning-Based Reliable Path Planning for Off-Road Autonomous Ground Vehicles in Unknown, Uncertain Environments,” Under Revision, *Engineering Optimization*, 2026.
3. Salazar Martinez D.A.*, Razmarashooli A., Chua Y.K.⁺, Panthi A., Okumu M., Hu C., Schrader P.T., Downey A.R.J., Comert G., Begashaw N., Blasch E., and Laflamme S., “Fast Topological Data Analysis for Computationally Efficient Feature Extraction in Nonstationary Time Series,” Under Review, *Measurement Science and Technology*, 2026.
4. Jiang Y., Bansal P., Mundiwala M.⁺, Hu C., and Wang P.*, “Physics-Guided Multi-Fidelity Neural Operator Digital Twin for Wet Clutch Hydraulic Pressure Prediction,” Under Review, *Journal of Mechanical Design*, 2026.
5. Bajarunas K., Navidi S.⁺, Zarouchas D., Hu C., Goebel K., and Chao M.A.*, “Degradation-Dynamics-Informed Learning for Future-Aware Battery Health Prognostics,” Under Revision, *eTransportation*, 2026.
6. Navidi S.⁺, Nowacki B.⁺, Bajarunas K., Chao M.A., and Hu C.*, “SOC-Agnostic Rapid State-of-Health Estimation from Short Current Pulses,” Under Revision, *Applied Energy*, 2026.
7. Mundiwala M.⁺, Paul S.⁺, Lu H.⁺, Bray A.⁺, Hu C.*, Zimmerman A.T., and Xu H., “A Prediction-Correction Framework for Increasing User Trust in Deep Learning: An Application to Bearing Fault Classification,” Under Review, *Engineering Applications of Artificial Intelligence*, 2025.

Journal Articles (Published/Accepted)

8. Ramamurthy J., Thelen A.⁺, Ojha M., Alaei S., Nowacki B.⁺, Li T.⁺, Navidi S.⁺, Jiao W., Kingston T.A., Hu C., and Pint C.*, “Practical Regeneration of Li-ion Batteries for a Second Life: The Role of Degradation Modes,” *Journal of Power Sources*, v687, 240500 (9pp), 2026.
9. Razmarashooli A.*, Okumu M., Salazar D., Chua Y.K.⁺, Laflamme S., Hu C., Schrader P.T., and Blasch E., “Topology-Informed Deep Learning Estimation using Feedforward Attention Layer for High-Rate State Estimation,” Accepted, *Neural Computing and Applications*, 2026.
10. Li T.⁺, Y. Zhang, Nowacki B.⁺, Navidi S.⁺, Schmitt T., Hu S., and Hu C.*, “Benchmarking Half-Cell

- Model Fitting Approaches for Battery Degradation Diagnostics,” *eTransportation*, v29, 100593 (28pp), 2026.
11. Chua Y.K.⁺, Li T.⁺, Navidi S.⁺, Razmarashooli A., Mundiwala M.⁺, Salazar Martinez D.A., Okumu M., Hu C.*[,] Laflamme S., and Schrader P.T., “Conformalized Multi-Step Forecasting for High-Rate Dynamic Systems,” *Structural and Multidisciplinary Optimization*, v69, n124, pp.1–26, 2026.
 12. Günay E.E., Ramadani R.*[,] Mundiwala M.⁺, Kashef A., Ma J., Hu C., Kremer P., and Kremer G.O., 2026, “TRIZ-Based Design Improvement for Facilitating Transmission Control Unit Remanufacturing,” *Journal of Mechanical Design*, v148, n7, p.074501 (6pp).
 13. Mundiwala M.⁺, Chung I., Davied M., Lee M., Smith C., Thompson T., Wang P., and Hu C.*[,] “Probabilistic System-Level Cost Modeling for Design for Remanufacturing,” *Journal of Mechanical Design*, v148, n9, p.092001 (13pp), 2026.
 14. Hu C.*[,] and Hu Z., “Incorporating Physics into Machine Learning for Structural Health Monitoring,” Section 11 in *Roadmap on Integrating Artificial Intelligence in Structural Health Monitoring Systems, Measurement Science and Technology*, v37, n10, 103001 (105pp), 2026.
 15. Navidi S.⁺, Das S., Nowacki B.⁺, Shrotriya P., Xu J., Hu C.*[,] “Coulombic Efficiency-Driven Optimization of Health-Aware Charging Protocols: An Experimental Investigation on LCO/Graphite Lithium-Ion Cells,” *Journal of Materials Chemistry A*, v14, p8100–8119, 2026.
 16. Gu H., Behtash M.⁺, Hu Z., Hu C., and Norato J.A.*[,] “A Geometry Projection Method for Reliability-Based Topology Optimization with Dimensional and Positional Variability,” *Structural and Multidisciplinary Optimization*, v69, n33, pp.1–20, 2026.
 17. Nowacki B.⁺, Schmitt T., Aquino P., and Hu C.*[,] “Fine-tuning for rapid capacity estimation of lithium-ion batteries,” *Energy Storage Materials*, v81, 104425 (16pp), 2025.
 18. Navidi S.⁺, Bajarunas K., Chao M.A., and Hu C.*[,] “Forecasting Battery Capacity for Second-Life Applications Using Physics-Informed Recurrent Neural Networks,” *eTransportation*, v25, 100432 (29pp), 2025.
 19. Li T.⁺, Liu J.⁺, Thelen A.⁺, Mishra A.⁺, Yang X.G., Wang Z., and Hu C.*[,] “Coupling a Capacity Fade Model with Machine Learning for Early Prediction of the Battery Capacity Trajectory,” *Applied Energy*, v389, 125703 (27pp), 2025.
 20. Thompson T.⁺, McMullen R., Nemani V.⁺, Hu Z., and Hu C.*[,] “A Comparative Study of Acquisition Functions for Active Learning Kriging in Reliability-Based Design Optimization,” *Structural and Multidisciplinary Optimization*, v68, n51, pp.1–40, 2025.
 21. Liu X., Chung I.B., Behtash M.⁺, Davied M., Thompson T., Lopez R., Lee M., Bishop W., Wang P., and Hu C.*[,] “A Design for Remanufacturing Framework Incorporating Identification, Evaluation, and Validation: a Case Study of Hydraulic Manifold,” *Journal of Mechanical Design*, v147, n8, p.084502 (12pp), 2025.
 22. Chua Y.K.⁺, Cobel D., Razmarashooli A., Paul S.⁺, Salazar D., Hu C.*[,] Downey, A., and Laflamme S., “Probabilistic Machine Learning Pipeline Using Topological Descriptors for Real-Time State Estimation of High-Rate Dynamic Systems,” *Mechanical Systems and Signal Processing*, v227, 112319 (22pp), 2025.
 23. Razmarashooli A.*[,] Chua Y.K.⁺, Barzegar V.⁺, Salazar D., Laflamme S., Hu C., Downey, A., Dodson J., and Schrader P.T., “Real-Time State Estimation of Nonstationary Systems Using Topological Data Analysis Features,” *Mechanical Systems and Signal Processing*, v224, 112048 (16pp), 2025.
 24. Nowacki B.⁺, Ramamurthy J., Thelen A.⁺, Tischer C., Pint C.L., and Hu C.*[,] “Rapid Estimation of Lithium-Ion Battery Capacity and Resistances from Short Duration Current Pulses,” *Journal of Power Sources*, v628, 235813 (10pp), 2025.
 25. Tabassum M.*[,] Nemani V.P.⁺, Hu C., and Kremer G.E., “A Novel Design Optimization Framework to Sustain Remanufacturability,” *Journal of Cleaner Production*, v479, 14393510 (15pp), 2024.

26. Thelen A.⁺, Huan X., Paulson N., Onori S., Hu Z., and Hu C.*, “Probabilistic Machine Learning for Battery Prognostics: Review and Perspectives,” *npj Materials Sustainability*, v2, p14 (33pp), 2024. [Invited Review Article]
27. Navidi S.⁺, Thelen A.⁺, Li T.⁺, and Hu C.*, “Physics-Informed Machine Learning for Battery Degradation Diagnostics: A Comparison of State-of-the-Art Methods,” *Energy Storage Materials*, v68, p.103343 (27pp), 2024.
28. Li T.⁺, Zhou Z.⁺, Thelen A.⁺, Howey, D., and Hu C.*, “Predicting Battery Lifetime under Varying Usage Conditions from Early Aging Data,” *Cell Reports Physical Science*, v5, n4, 2024, p.101891 (23pp), 2024.
29. Behtash M.⁺, Liu X., Davied M., Thompson T., Burjes R., Lee M., Wang P., and Hu C.*, “Reman Co-Design: A Combined Design and Remanufacturing Optimization Framework for the Sustainable Design of High-Value Components,” *Journal of Mechanical Design*, v146, n2, p.020901 (13pp), 2024.
30. Lu H.⁺, Thelen A.⁺, Fink O., Hu C.*, and Laflamme S., “Federated Learning with Uncertainty-Based Client Clustering for Fleet-Wide Fault Diagnosis,” *Mechanical Systems and Signal Processing*, v210, 111068 (25pp), 2024.
31. Nemani V.⁺, Biggio L., Huan X., Hu Z., Fink O., Tran A., Wang Y., Zhang X.*, and Hu C.*, “Uncertainty Quantification in Machine Learning for Engineering Design and Health Prognostics: A Tutorial,” *Mechanical Systems and Signal Processing*, v205, p.110976 (69pp), 2023.
32. Thelen A.⁺, Zohair M., Ramamurthy J., Jiao W., Ojha M., Ishtiaque M.U., Kingston T.A., Pint C.L.*, and Hu C.*, “Sequential Bayesian Optimization for Accelerating the Design of Sodium Metal Battery Nucleation Layers,” *Journal of Power Sources*, v581, 233508 (14pp), 2023.
33. Mishra A.⁺, Liu X., Hu C., and Wang P.*, “Reliability-Informed End-of-Use Decision Making for a Product Family Using Two-stage Stochastic Optimization,” *Applied Mathematical Modeling*, v121, p364–385, 2023.
34. Lu H.⁺, Nemani V.P.⁺, Barzegar V.⁺, Allen C.⁺, Hu C.*, Laflamme S., Sarkar S., and Zimmerman A.T., “A physics-informed feature weighting method for bearing fault diagnostics,” *Mechanical Systems and Signal Processing*, v191, p.110171, 2023.
35. Nemani V.P.⁺, Thelen A.⁺, Hu C.*, and Daining S., “Degradation-Aware Ensemble of Diverse Learners for Remaining Useful Life Prediction,” *Journal of Mechanical Design*, v145, n3, p.031706, 2023.
36. Thompson T.*⁺, Liu J.⁺, and Hu C., “A Comparative Analysis of Step Loading and Staircase Testing for Fatigue Strength Estimation of an Engine Component,” *Fatigue & Fracture of Engineering Materials & Structures*, v46, n2, p667–681, 2023.
37. Thelen A.⁺, Zhang X., Fink O., Lu Y., Ghosh S., Youn B.D., Todd M.D., Mahadevan S., Hu C., and Hu Z.*, “A Comprehensive Review of Digital Twin - Part 2: Roles of Uncertainty Quantification and Optimization, a Battery Digital Twin, and Perspectives,” *Structural and Multidisciplinary Optimization*, v66, n1, pp.1–43, 2023.
38. Nelson M.⁺, Laflamme S.*, Hu C., Moura A.G., Hong J., Downey A., Lander P., Wang Y., Blasch E. and Dodson J., “Generated datasets from dynamic reproduction of projectiles in ballistic environments for advanced research (DROPBEAR) testbed,” *IOP SciNotes*, v3, n4, p.044401, 2022.
39. Thelen A.⁺, Zhang X., Fink O., Lu Y., Ghosh S., Youn B.D., Todd M.D., Mahadevan S., Hu C.*, and Hu Z., “A Comprehensive Review of Digital Twin - Part 1: Modeling and Twinning Enabling Technologies,” *Structural and Multidisciplinary Optimization*, v65, n354, pp.1–55, 2022.
40. Lui Y.H.⁺, Shahriar M., Pan Y., Hu C., and Hu S.*, “Surrogate Modeling of Acoustic Field-Assisted Particle Patterning Process with Physics-Informed Encoder-Decoder Approach,” *Structural and Multidisciplinary Optimization*, v65, n11, p.333, 2022.

41. Nemani V.P.⁺, Bray, A.⁺, Thelen A.⁺, Hu C.^{*}, and Daining S., “Health Index Construction with Feature Fusion Optimization for Predictive Maintenance of Physical Systems,” *Structural and Multidisciplinary Optimization*, v65, n12, p.349, 2022.
42. Thelen A.⁺, Li M.⁺, Hu C.^{*}, Bekyarova E., Kalinin S., and Sanghadasa M.. “Augmented model-based framework for battery remaining useful life prediction,” *Applied Energy*, v324, 119624 (pp18), 2022.
43. Nelson M.^{+*}, Barzegar V.⁺, Laflamme S., Hu C., Downey A., Bakos J., Thelen A.⁺, and Dodson J., “Multi-Step Ahead State Estimation with Hybrid Algorithm for High-Rate Dynamic Systems,” *Mechanical Systems and Signal Processing*, v182, 109536 (14pp), 2022.
44. Lu H.⁺, Barzegar V.⁺, Nemani V.P.⁺, Thelen A.⁺, Hu C.^{*}, Laflamme S., and Zimmerman A., “Joint training of a predictor network and a generative adversarial network for time series forecasting: A case study of bearing prognostics,” *Expert Systems with Applications*, v203, 117415 (pp19), 2022.
45. Thelen A.⁺, Lui Y.H.⁺, Shen S.⁺, Laflamme S., Hu S., and Hu C.^{*}, “Integrating Physics-Based Modeling and Machine Learning for Degradation Diagnostics of Lithium-Ion Batteries,” *Energy Storage Materials*, v50, p668–695, 2022.
46. Nemani V.P.⁺, Liu J.⁺, Ahmed N., Cartwright A., Kremer G.E., and Hu C.^{*}, “Reliability-Informed Economic and Energy Evaluation for Bi-Level Design for Remanufacturing: A Case Study of Transmission and Hydraulic Manifold,” *Journal of Mechanical Design*, v144, n8, 08214 (17pp), 2022.
47. Nemani V.P.⁺, Lu H.⁺, Thelen A.⁺, Hu C.^{*}, and Zimmerman A., “Ensembles of Probabilistic LSTM Predictors and Correctors for Bearing Prognostics Using Industrial Standards,” *Neurocomputing*, v491, p575–596, 2022.
48. Giahi R.^{*}, MacKenzie C., and Hu C., “Optimizing the Flexible Design of Hybrid Renewable Energy Systems,” *Engineering Economist*, v67, n1, p25–51, 2022.
49. Barzegar V.^{+*}, Laflamme S., Hu C., and Dodson J., “Ensemble of Recurrent Neural Networks with Long Short-Term Memory Cells for High-Rate Structural Health Monitoring,” *Mechanical Systems and Signal Processing*, v164, 108201 (15pp), 2022.
50. Yang Y.H., Wei H.P., Han B.^{*}, and Hu, C., “Implementation and Performance Evaluation of a Bivariate Cut-HDMR Metamodel for Semiconductor Packaging Design Problems with a Large Number of Input Variables,” *Materials*, v14, n16, 4619 (16pp), 2021.
51. Shen S.⁺, Lu H.⁺, Sadoughi M.⁺, Hu C.^{*}, Nemani V.⁺, Thelen A.⁺, Webster K., Darr M., Kenny S., and Sidon J., “A Physics-Informed Deep Learning Approach for Bearing Fault Detection,” *Engineering Applications of Artificial Intelligence*, v103, 104295 (15pp), 2021.
52. Li M.⁺, Shen S.⁺, Barzegar V.⁺, Sadoughi M.⁺, Hu C.^{*}, and Laflamme S., “Kriging-Based Reliability Analysis Considering Predictive Uncertainty Reduction,” *Structural and Multidisciplinary Optimization*, v63, p2721–2737, 2021.
53. Li M.⁺, Nemani V.P.⁺, Liu J.⁺, Lee M.A., Ahmed N., Kremer G.E., and Hu C.^{*}, “Reliability-Informed Life Cycle Warranty Cost and Life Cycle Analysis of Newly Manufactured and Remanufactured Units,” *Journal of Mechanical Design*, v143, n11, 112001 (14pp), 2021.
54. Barzegar V.^{+*}, Laflamme S., Hu C., and Dodson J., “Multi-time Resolution Ensemble LSTMs for Enhanced Feature Extraction in High-Rate Time Series,” *Sensors*, v21, n6, 1954 (18pp), 2021.
55. Gargh P., Sarkar A., Lui Y.H.⁺, Shen S.⁺, Hu C., Hu S., Nlebedim I.C., and Shrotriya P.^{*}, “Correlating Capacity Fade with Film Resistance Loss in Fast Charging of Lithium-ion Battery,” *Journal of Power Sources*, v485, 229360 (7pp), 2021.
56. Lui Y.⁺, Li M.⁺, Downey A.⁺, Shen S.⁺, Nemani V.P.⁺, Ye H., VanElzen C., Jain G., Hu S., Laflamme S., and Hu C.^{*}, “Physics-Based Prognostics of Implantable-Grade Lithium-Ion Battery for Remaining Useful Life Prediction,” *Journal of Power Sources*, v485, 229327 (15pp), 2021.
57. Liu J.⁺, Hu C.^{*}, Kimber A., and Wang Z., “Uses, Cost-Benefit Analysis, and Markets of Energy Storage Systems for Electric Grid Applications,” *Journal of Energy Storage*, v32, 101731 (16pp),

- 2020.
58. Barzegar V.^{+,*}, Laflamme S., Downey A., Li M.⁺, and Hu C., “Numerical Evaluation of a Novel Passive Variable Friction Damper for Vibration Mitigation,” *Engineering Structures*, v220, 110920 (12pp), 2020.
 59. Sadoughi M.⁺, Hu C.^{*}, Moghadassian B., Sharma A., Beck J., and Mathiesen D., “Sequential Online Dispatch in Design of Experiments for Single- and Multi-Response Surrogate Modeling,” *IEEE Transactions on Automation Science and Engineering*, v17, n4, p1674–1688, 2020.
 60. Li M.⁺, Sadoughi M.⁺, Hu Z., and Hu C.^{*}, “A Hybrid Gaussian Process Model for System Reliability Analysis,” *Reliability Engineering and System Safety*, v197, 106816 (15pp), 2020.
 61. Shen S.⁺, Sadoughi M.⁺, Li M.⁺, Wang Z., and Hu C.^{*}, “Deep Convolutional Neural Networks with Ensemble Learning and Transfer Learning for Capacity Estimation of Lithium-ion Batteries,” *Applied Energy*, v260, 114296 (14pp), 2020. [Highly Cited Research Paper 2020]
 62. Giah R.^{*}, MacKenzie C., and Hu C., “Design Optimization for Resilience for Risk-Averse Firms,” *Computers and Industrial Engineering*, v139, 106122 (14pp), 2020.
 63. Sadoughi M.⁺ and Hu C.^{*}, “Physics-Based Convolutional Neural Network for Fault Diagnosis of Rolling Element Bearings,” *IEEE Sensors Journal*, v19, n11, p4181–4192, 2019.
 64. Sarkar A., Shrotriya P.^{*}, Chandra A., and Hu C., “Chemo-Economic Analysis of Battery Aging and Capacity Fade in Lithium-Ion Battery,” *Journal of Energy Storage*, v25, 100911 (8pp), 2019.
 65. Li M.⁺, Sadoughi M.⁺, Hu C.^{*}, Hu Z., Eshghi A.T., and Lee S., “High-Dimensional Reliability-Based Design Optimization Involving Highly Nonlinear Constraints and Computationally Expensive Simulations,” *Journal of Mechanical Design*, v141, n5, 051402 (14pp), 2019.
 66. Shen S.⁺, Sadoughi M.⁺, Chen X.Y., Hong M.Y., and Hu C.^{*}, “A Deep Learning Method for Online Capacity Estimation of Lithium-Ion Batteries,” *Journal of Energy Storage*, v25, p100817, 2019.
 67. Downey A.⁺, Lui Y.⁺, Hu C.^{*}, Laflamme S., and Hu S., “Physics-Based Prognostics of Lithium-Ion Battery Using Non-linear Least Squares with Dynamic Bounds,” *Reliability Engineering and System Safety*, v182, p1–12, 2019.
 68. Li Z.⁺, Wu D., Hu C.^{*}, and Terpenney J., “An Ensemble Learning-based Prognostic Approach with Degradation-Dependent Weights for Remaining Useful Life Prediction,” *Reliability Engineering and System Safety*, v184, p110–122, 2019.
 69. Nahvi A.^{*}, Sadoughi M.⁺, Arabzadeh A., Sassani S., Hu C., Ceylan H., and Kim S., “Multi-objective Bayesian Optimization of Super Hydrophobic Coatings on Asphalt Concrete Surfaces,” *Journal of Computational Design and Engineering*, v19, n11, p4181–4192, 2019.
 70. MacKenzie C. and Hu C.^{*}, “Decision Making under Uncertainty for Design of Resilient Engineered Systems,” *Reliability Engineering and System Safety*, v192, 1061719 (10pp), 2019.
 71. Hu Z.^{*}, Hu C., Zissimos P.M., and Sankaran M., “Model Discrepancy Quantification in Simulation-based Design of Dynamical Systems,” *Journal of Mechanical Design*, v141, n1, 011401 (13pp), 2018.
 72. Downey A.^{+,*}, Sadoughi M.⁺, Laflamme S., and Hu C., “Incipient Damage Detection for Large Area Structures Monitored with a Network of Soft Elastomeric Capacitors Using Relative Entropy,” *IEEE Sensors Journal*, v18, n21, p 8827–8834, 2018.
 73. Sadoughi M.⁺, Li M.⁺, and Hu C.^{*}, “Multivariate System Reliability Analysis Considering Highly Nonlinear and Dependent Safety Events,” *Reliability Engineering and System Safety*, v180, p189–200, 2018.
 74. Downey A.^{+,*}, Sadoughi M.⁺, Laflamme S., and Hu C., “Fusion of Sensor Geometry into Additive Strain Fields Measured with Sensing Skin,” *Smart Materials and Structures*, v27, 075033, p1–14, 2018.
 75. Sadoughi M.⁺, Downey A.⁺, Yan J., Hu C.^{*}, and Laflamme S., “Reconstruction of Unidirectional

- Strain Maps via Iterative Signal Fusion for Mesoscale Structures Monitored by a Sensing Skin,” *Mechanical Systems and Signal Processing*, v112, p401–416, 2018.
76. Sadoughi M.⁺, Li M.⁺, Hu C.^{*}, MacKenzie C., Eshghi A.T., and Lee S., “A High-Dimensional Reliability Analysis Method for Simulation-Based Design Under Uncertainty,” *Journal of Mechanical Design*, v140, n7, 071401 (12pp), 2018.
 77. Sadoughi M.⁺, Hu C.^{*}, MacKenzie C., Eshghi A.T., and Lee S., “Sequential Exploration-Exploitation with Dynamic Trade-off for Efficient Reliability Analysis of Complex Engineered Systems,” *Structural and Multidisciplinary Optimization*, v57, n1, p235–250, 2018.
 78. Hu C.^{*}, Hui Y., Jain G., and Schmidt C., “Remaining Useful Life Assessment of Lithium-Ion Batteries in Implantable Medical Devices,” *Journal of Power Sources*, v375, p118–130, 2018.
 79. Li Z.⁺, Jiang Y., Guo Q., Hu C.^{*}, and Peng Z., “Multi-Dimensional Variational Decomposition for Bearing-Crack Detection in Wind Turbines with Large Driving-Speed Variations,” *Renewable Energy*, v116 (Part B), p55–73, 2018.
 80. Downey A.⁺⁺, Hu C., and Laflamme S., “Optimal Sensor Placement within a Hybrid Dense Sensor Network using an Adaptive Genetic Algorithm with Learning Gene Pool,” *Structural Health Monitoring*, v17, n3, p450–460, 2018.
 81. Eshghi A.T., Lee S.^{*}, Sadoughi M.⁺, Hu C., Kim Y.C., and Seo J.H., “Design Optimization under Uncertainty and Speed Variability for a Piezoelectric Energy Harvester Powering a Tire Pressure Monitoring Sensor,” *Smart Materials and Structures*, v26, n10, 105037, p1–18, 2017.
 82. Zhang C., Li Z.⁺⁺, Hu C., Chen S., Wang J., and Zhang X., “An Optimized Ensemble Local Mean Decomposition Method for Fault Detection of Mechanical Components,” *Measurement Science and Technology*, v28, n3, 035102 (15pp), 2017.
 83. Seong S.⁺, Hu C., and Lee S.^{*}, “Design under Uncertainty for Reliable Power Generation of Nonlinear Piezoelectric Energy Harvester,” *Journal of Intelligent Material Systems and Structures*, v28, n17, p2437–2449, 2017.
 84. Li Z.⁺⁺, Jiang Y., Hu C., and Peng Z., “Recent Progress on Decoupling Diagnosis of Hybrid Failures in Gear Transmission Systems Using Vibration Sensor Signal: A Review,” *Measurement*, v90, p4–19, 2016.
 85. Jiang Y., Li Z.⁺⁺, Zhang C., Hu C., and Peng Z., “On the Bi-Dimensional Variational Decomposition Applied to Nonstationary Vibration Signals for Rolling Bearing Crack Detection in Coal Cutters,” *Measurement Science and Technology*, v27, n6, p065103, 2016.
 86. Hu C.^{*}, Jain G., Schmidt C., Strief C., and Sullivan M., “Online Estimation of Lithium-Ion Battery Capacity Using Sparse Bayesian Learning,” *Journal of Power Sources*, v289, p105–113, 2015.
 87. Hu C., Youn B.D.^{*}, Kim T., and Wang P., “A Co-Training-Based Approach for Prediction of Remaining Useful Life Utilizing both Failure and Suspension Data,” *Mechanical Systems and Signal Processing*, v62–63, p75–90, 2015.
 88. Youn B.D.^{*}, Park K.M., Hu C., Yoon, J.T., and Bae Y.C., “Statistical Health Reasoning of Power Generator Stator Windings against Moisture Absorption,” *IEEE Transactions on Energy Conversion*, v30, n4, p1376–1385, 2015.
 89. Bai G.⁺, Wang P.^{*}, and Hu C., “A Self-Cognizant Dynamic System Approach for Prognostics and Health Management,” *Journal of Power Sources*, v278, p163–174, 2015.
 90. Wang P., Youn B.D.^{*}, Hu C., Jong M.H., and Jeon B., “A Probabilistic Detectability-Based Sensor Network Design Method for System Health Monitoring and Prognostics,” *Journal of Intelligent Material Systems and Structures*, v26, n9, p1079–1090, 2015.
 91. Fathi R., Burns J.C., Stevens D.A., Ye H., Hu C., Jain G., Scott E., Schmidt C., and Dahn J.R.^{*}, “Ultra High-Precision Studies of Degradation Mechanisms in Aged LiCoO₂/Graphite Li-Ion Cells,” *Journal of The Electrochemical Society*, v161, n10, A1572–A1579, 2014.

92. Bai G.⁺, Wang P.^{*}, Hu C., and Pecht M., “A Generic Model-Free Approach for Lithium-Ion Battery Health Management,” *Applied Energy*, v135, p247–260, 2014.
93. Hu C.^{*}, Jain G., Zhang P., Schmidt C., Gomadam P., and Gorka T., “Data-Driven Approach Based on Particle Swarm Optimization and K-Nearest Neighbor Regression for Estimating Capacity of Lithium-Ion Battery,” *Applied Energy*, v129, p49–55, 2014.
94. Hu C.^{*}, Jain G., Tamirisa P., and Gorka T., “Method for Estimating Capacity and Predicting Remaining Useful Life of Lithium-Ion Battery,” *Applied Energy*, v126, p182–189, 2014.
95. Wang P.^{*}, Tamilselvan P., and Hu C., “Health Diagnostics Using Multi-Attribute Classification Fusion,” *Engineering Applications of Artificial Intelligence*, v32, p192–202, 2014.
96. Xi Z., Wang P., Jing R., and Hu C., “A Copula-Based Sampling Method for Data-Driven Prognostics,” *Reliability Engineering and System Safety*, v132, p72–82, 2014.
97. Hu C., Youn B.D.^{*}, and Yoon H., “An Adaptive Dimension Decomposition and Reselection Method for Reliability Analysis,” *Structural and Multidisciplinary Optimization*, v47, n3, p423–440, 2013.
98. Hu C., Wang P., Youn B.D.^{*}, and Lee W.R., “Copula-Based Statistical Health Grade System against Mechanical Faults of Power Transformers,” *IEEE Transactions on Power Delivery*, v27, n4, p1809–1819, 2012.
99. Wang P., Youn B.D.^{*}, and Hu C., “A Generic Probabilistic Framework for Structural Health Prognostics and Uncertainty Management,” *Mechanical Systems and Signal Processing*, v28, p622–637, 2012.
100. Xi Z., Hu C., and Youn B.D.^{*}, “A Comparative Study of Probability Estimation Methods for Reliability Analysis,” *Structural and Multidisciplinary Optimization*, v45, n1, p33–52, 2012.
101. Hu C., Youn B.D.^{*}, Wang P., and Yoon, J.T., “Ensemble of Data-Driven Prognostic Algorithms for Robust Prediction of Remaining Useful Life,” *Reliability Engineering and System Safety*, v103, p120–135, 2012.
102. Hu C., Youn B.D.^{*}, and Chung J., “A Multiscale Framework with Extended Kalman Filter for Lithium-Ion Battery SOC and Capacity Estimation,” *Applied Energy*, v92, p694–704, 2012. [Highly Cited Research Paper 2012-2013]
103. Youn B.D.^{*}, Hu C., and Wang P., “Resilience-Driven System Design of Complex Engineered Systems,” *Journal of Mechanical Design*, v133, n10, 101011 (15pp), 2011.
104. Hu C. and Youn B.D.^{*}, “An Asymmetric Dimension-Adaptive Tensor-Product Method for Reliability Analysis,” *Structural Safety*, v33, n3, p218–231, 2011.
105. Hu C. and Youn B.D.^{*}, “Adaptive-Sparse Polynomial Chaos Expansion for Reliability Analysis and Design of Complex Engineering Systems,” *Structural and Multidisciplinary Optimization*, v43, n3, p419–442, 2011.
106. Wang P., Hu C., and Youn B.D.^{*}, “A Generalized Complementary Intersection Method for System Reliability Analysis and Design,” *Journal of Mechanical Design*, v133, n7, 071003 (13pp), 2011.
107. Youn B.D.^{*}, Hu C., Wang P., and Yoon J.T., “Resilience Allocation for Resilient Engineered System Design,” *Journal of Institute of Control, Robotics and Systems*, v17, n11, p1082–1089, 2011.
108. Xi Z., Youn B.D.^{*}, and Hu C., “Random Field Characterization Considering Statistical Dependence for Probability Analysis and Design,” *Journal of Mechanical Design*, v132, n10, 101008 (12pp), 2010.

Books, Chapters, and Journal Editorials

1. Hu Z., Hu C., and Hu W., “A Tutorial on Digital Twin for Predictive Maintenance,” Chapter in *Structural Health Monitoring (SHM) in Aerospace Structures*, Edited by Yuan F.G., 2024.
2. Hu C., Hu Z., Zheng P., Kim T., González V.A., and San O., “Editorial: Special issue on advanced optimization enabling digital twin technology,” *Structural and Multidisciplinary Optimization*, v66,

n10, p1–5, 2023.

3. Hu C., Goebel K., Howey D., Peng Z., Wang D., Wang P., and Youn B.D., “Editorial: Special issue on Physics-informed machine learning enabling fault feature extraction and robust failure prognosis,” *Mechanical Systems and Signal Processing*, v192, p.110219, 2023.
4. Laflamme S., Hu C., and Dodson J., “Real-Time Machine Learning for High-Rate Structural Health Monitoring,” Chapter 6 in *Structural Health Monitoring Based on Data Science Techniques*, Edited by Cury A., Ribeiro D., Ubertini F., and Todd M., 2021.
5. Hu C., Youn B.D., and Wang P., “Engineering Design under Uncertainty and Health Prognostics,” *Springer Series in Reliability Engineering*, Springer, 2019.
6. Hu C., Wang P., and Youn B.D., “Advances in System Reliability Analysis under Uncertainty,” Chapter 9 in *Numerical Methods for Reliability and Safety Assessment*, Edited by Seifedine K., and Abdelkhalak, E.H., Springer, 2015.

Invited Commentary

1. Hu C., “Machine learning slashes the testing needed to work out battery lifetimes,” News & Views, *Nature*, v650, n8100, p41–42, 2026.

Patents and Invention Disclosures

1. Sadoughi M.⁺, Lu H.⁺, Hu C., Shawn K., Sidon J., and Krishnaswamy S., “Fault Detection Technique for a Bearing,” US Patent No. 12/517/010, 2026.
2. Nemani V.⁺, Hu C., Novak C., and Zimmerman A., “Joint Training Method For Predicting Remaining Useful Life of Industrial Systems Using Time-Series Data,” Utility Patent Filed, ISURF #05122, 2024.
3. Nemani V.⁺, Hu C., Lu H.⁺, and Zimmerman A., “Two-Tier Prognostic Model for Explainable Remaining Useful Life Prediction,” Utility Patent Filed, ISURF #05404, 2023.
4. Louwagie J., Aamodt P., Brama V., Finstrom N., Hintz M., Yakovlev V., O’Connell K., Swenson R., Schmidt B., Viavattine J., Zhang P., Zhao H., and Hu C., “Battery Assembly for Medical Device,” Provisional Patent Filed, US Patent No. US11413466B2, 2022.

Conference Proceedings

1. Razamarashooli, A.*, Salazar, D.A., Chua, Y.K.⁺, Okumu, M., Laflamme, S., Hu, C., and Schrader, P.T., “TDA-Informed Feedforward Recurrent Neural Networks for High-Rate State Estimation Application,” Accepted, IWSHM 2025, September 9-11, 2025, Stanford, CA.
2. Chua, Y.K.⁺, Razamarashooli, A., Mundiwala, M.⁺, Salazar, D.A., Okumu, M., Hu, C., and Laflamme, S., “Multi-Step State Forecasting with Conformal Prediction for High-Rate Dynamic Systems,” Accepted, IWSHM 2025, September 9-11, 2025, Stanford, CA.
3. Salazar, D.A.*, Chua, Y.K., Razamarashooli, A., Okumu, M., Laflamme, S., Hu, C., Schrader, P.T., Comert G., Begashaw N., Dodson, J., and Blash, E., “Investigation of Fast Topological Data Analysis Feature Extraction for High-Rate Dynamic Prediction,” Accepted, DASC 2025, September 16-18, 2025, Montreal, Canada. [Best of Session Award]
4. Gunay E.E.*, Ramadani R., Mundiwala M.⁺, Kashaf A., Ma J., Hu C., Kremer P., and Kremer G.E., “Design Improvements for Facilitating Transmission Control Unit Remanufacturing,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 17-20 2025, Anaheim, CA. [2025 DFMLC Paper of Distinction Award]
5. Mundiwala, M.⁺, Chung, I. B., Davied, M., Thompson, T., Lopez, R., Lee, M., Wang, P., and Hu C.*, “A system-level cost modeling framework for design for remanufacturing: a case study of an agricultural machine transmission,” *ASME International Design Engineering Technical Conferences*

- & *Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 17-20 2025, Anaheim, CA.
6. Bansal P., Chung I. B., Mundiwala M.⁺, Hu C., and Wang P., “Fault detection and pressure-time curve prediction for fluid-structure interactions with physics-based modeling and machine learning,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 17-20 2025, Anaheim, CA.
 7. Razmarashooli, A., Salazar, D., Laflamme, S., Hu, C., Schrader, P., Comert, G., Begashaw, N. and Dodson, J., 2025, “Fast-TDA Implementation for High Rate Dynamic Systems in Noisy Environment and Introduction to Chaotic System,” *IMAC-XLIII*, Feb 10-13, 2025, Orlando, FL. [Best Paper Award in Data Science in Engineering]
 8. Salazar, D.A., Razmarashooli, A., Chua, Y.K., Laflamme, S., Hu, C., Schrader, P.T., Downey, A., Bakos, J.D., Comert G., Begashaw N., and Dodson, J., “Fast Topological Data Analysis Feature for Nonstationary Time Series,” *DDDAS2024*, November 6-8, 2024, New Brunswick, NJ.
 9. Liu X., Chung I.B., Behtash M.⁺, Davied M., Thompson T., Lopez R., Lee M., Bishop W., Wang P. and Hu, C.^{*}, “A Design for Remanufacturing Framework Incorporating Identification, Evaluation, and Validation: A Case Study of Hydraulic Manifold,” In *International Design Engineering Technical Conferences and Computers and Information in Engineering Conference* (Vol. 88377, p. V03BT03A049). American Society of Mechanical Engineers, Aug 25-28, 2024, Washington, DC.
 10. Liu X.^{*}, Mishra A.K.⁺, Hu C., and Wang P., 2023, January. “Multi-stage product family design for reliability with remanufacturing,” *2023 Annual Reliability and Maintainability Symposium (RAMS)* (pp. 1-6). IEEE. [Thomas L Fagan, Jr. Award for Best Student Paper]
 11. Navidi S.⁺, Thelen A.⁺, Li T., and Hu C.^{*}, “Physics-Informed Neural Networks for Degradation Diagnostics of Lithium-Ion Batteries,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 20-23 2023, Boston, MA.
 12. Chowdhury P.^{*}, Downey A.R., Bakos J.D., Laflamme S., and Hu C., 2023, April. “Hardware implementation of nonstationary structural dynamics forecasting,” In *Active and Passive Smart Structures and Integrated Systems XVII* (Vol. 12483, pp. 363-372). SPIE.
 13. Nemani V.P.⁺, Thelen A.⁺, Hu C.^{*}, and Daining S., “Dynamically Weighted Ensemble of Diverse Learners for Remaining Useful Life Prediction,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 15-17 2022, hosted in St. Louis, MO and online.
 14. Lu H.⁺, Allen C.⁺, Nemani V.⁺, Hu C.^{*}, and Zimmerman, A., “IIoT Deployment of a Physics-Informed Deep Learning Model for Online Bearing Fault Diagnostics,” *International Symposium on Flexible Automation 2022 (ISFA 2022)*, July 3-7 2022, hosted at Yokohama, Japan and online.
 15. Liu J.⁺, Thelen A.⁺, Mishra, A.⁺, Hu C.^{*}, Yang X.G., and Wang Z., “An End-to-End Learning Framework for Early Prediction of Battery Capacity Trajectory,” *Annual Conference of the Prognostics and Health Management (PHM) Society 2021*, Nov 29-Dec 2 2021, hosted online.
 16. Nemani V.P.⁺, Liu J.⁺, Ahmed N., Cartwright A., Kremer G.E., and Hu C.^{*}, “Reliability-Informed Economic and Energy Evaluation for Design for Remanufacturing: A Case Study on a Hydraulic Manifold,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 17-19 2021, hosted online.
 17. Thelen A.⁺, Lui Y.H.⁺, Shen S.⁺, Laflamme S., Hu S., and Hu C.^{*}, “Physics-Informed Machine Learning for Degradation Diagnostics of Lithium-Ion Batteries,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 17-19 2021, hosted online.

18. Lu H.⁺, Barzegar V.⁺, Nemani V.⁺, Hu C.^{*}, Laflamme S., and Zimmerman, A., “GAN-LSTM Predictor for Failure Prognostics of Rolling Element Bearings,” *2021 IEEE International Conference on Prognostics and Health Management (PHM)*, Jun 7-9 2021, hosted online.
19. Liu Y., Hu Z.^{*}, Todd M., and Hu C., “Data-Driven Remaining Useful Life Estimation Using Gaussian Mixture Models,” *AIAA Non-Deterministic Approaches Conference, 2021 AIAA SciTech Forum*, Jan 19-21 2021, hosted online.
20. Thelen A.⁺, Li M.⁺, Hu C.^{*}, Bekyarova E., Kalinin S., Sanghadasa M., “Integrating Model-Based Projection with Data-Driven Correction for Prognostics of All-Solid-State Battery-Supercapacitor Hybrid Devices,” *2020 NASA Aerospace Battery Workshop*, Nov 17-19 2020, hosted online.
21. Li M.⁺, Shen S.⁺, Sadoughi M.⁺, Barzegar V., Laflamme S., and Hu C.^{*}, “Expected Uncertainty Reduction for Sequential Kriging-Based Reliability Analysis,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 16-19 2020, hosted online.
22. Li M.⁺, Liu J.⁺, Nemani V.P.⁺, Ahmed N., Kremer G.E., and Hu C.^{*}, “Reliability-Informed Life-Cycle Warranty Cost Analysis: A Case Study on a Transmission in Agricultural Equipment,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 16-19 2020, hosted online.
23. Eshkalak N.J.⁺, Lu H.⁺, Hu C.^{*}, Daining S., and Wirth D., “Two-Plane Balancing Method for Correction Of Shaft Unbalance,” *Annual Conference of the Society of Machinery Failure Prevention Technology (MFPT)*, Aug 6 2020, hosted online.
24. Liu J.⁺, Hu C.^{*}, and Wang Z., “Optimal Bidding of Li-ion BESS in Regulation Markets Considering Capacity Degradation,” *2020 IEEE Transportation Electrification Conference and Expo (ITEC)*, Jun 22-26 2020, hosted online.
25. Shen S.⁺, Nemani V.P.⁺, Liu J.⁺, Hu C.^{*}, and Wang Z., “A Hybrid Machine Learning Model for Battery Cycle Life Prediction with Early Cycle Data,” *2020 IEEE Transportation Electrification Conference and Expo (ITEC)*, Jun 22-26 2020, hosted online.
26. Lu H.⁺, Sadoughi M.⁺, Zimmerman A., and Hu C.^{*}, “A Physics-Based Feature Weighting Approach for Fault Diagnosis of Rolling Element Bearings,” *12th International Workshop on Structural Health Monitoring*, Sep 10-12, 2019, Stanford, CA.
27. Downey A.⁺, Hong J.⁺, Joyce B., Dodson J., Hu C., and Laflamme S., “Methodology for Real-Time State Estimation at Unobserved Locations for Structures Experiencing High-Rate Dynamics,” *12th International Workshop on Structural Health Monitoring*, Sep 10-12, 2019, Stanford, CA.
28. Li M.⁺, Sadoughi M.⁺, Hu Z., and Hu C.^{*}, “System Reliability Analysis Using Hybrid Gaussian Process Model,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 18-21 2019, Anaheim, CA.
29. Sadoughi M.⁺, Li M.⁺, Beck J., and Hu C.^{*}, “A Reliability Model Validation Method for Mitigating the Effects of Measurement Uncertainty,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 18-21 2019, Anaheim, CA.
30. Shen S.⁺, Sadoughi M.⁺, and Hu C.^{*}, “Online Estimation of Lithium-Ion Battery Capacity Using Transfer Learning,” *2019 IEEE Transportation Electrification Conference and Expo (ITEC)*, Jun 19-21 2019, Novi, MI.
31. Liu J.⁺, Wang Z., and Hu C.^{*}, “Co-Optimizing Size and Schedule of Lithium-Ion Battery Combined with PV Generation,” *2019 IEEE Transportation Electrification Conference and Expo (ITEC)*, Jun 19-21 2019, Novi, MI.

32. Sadoughi M.⁺, Lu H.⁺, and Hu C.*, “A Deep Learning Approach for Failure Prognostics of Rolling Element Bearings,” *2019 IEEE International Conference on Prognostics and Health Management (PHM)*, Jun 17-19 2019, Burlingame, CA.
33. Li M.⁺, Sadoughi M.⁺, Shen S.⁺, and Hu C.*, “Remaining Useful Life Prediction of Lithium-Ion Batteries Using Multi-model Gaussian Process,” *2019 IEEE International Conference on Prognostics and Health Management (PHM)*, Jun 17-19 2019, Burlingame, CA.
34. Giahi R.*, MacKenzie C., and Hu C., “A Multi-Stage Optimization Model for Flexibility in Engineering Design,” *IISE Annual Conference & Expo*, May 30-June 2 2019, New Orleans, LA. [Best Track Paper Award]
35. Sadoughi M.⁺ and Hu C.*, “A Physics-based Deep Learning Approach for Fault Diagnosis of Rotating Machinery,” *44th Annual Conference of the IEEE Industrial Electronics Society*, Oct 21-23 2018, Washington, DC.
36. Sadoughi M.⁺, Downey A.⁺, Bunge G.⁺, Ranawat A.⁺, Hu C.*, and Laflamme S., “A Deep Learning-based Approach for Fault Diagnosis of Roller Element Bearings,” *Annual Conference of the Prognostics and Health Management (PHM) Society 2018*, Oct 24-27 2018, Philadelphia, PA.
37. Lui Y.H.⁺, Li M.⁺, Sadoughi M.⁺, Hu C.*, and Hu S., “Physics-based State of Health Estimation of Lithium-Ion Battery Using Sequential Experimental Design,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 26-29 2018, Quebec City, Canada.
38. Shen S.⁺, Sadoughi M.⁺, Chen X.Y., Hong M.Y., and Hu C.*, “Online Estimation of Lithium-Ion Battery Capacity Using Deep Convolutional Neural Networks,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 26-29 2018, Quebec City, Canada.
39. Downey A.⁺, Sadoughi M.⁺, Cao L., Laflamme S., and Hu C.*, “Passive Variable Friction Damper for Increased Structural Resilience to Multi-Hazard Excitations,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 26-29 2018, Quebec City, Canada.
40. Bekyarova E.*, Itkis M.E., Kalinin S., Dai J., Hu L., Li M.⁺, and Hu C., “All-Solid-State Battery-Ultracapacitor Hybrid Devices Based on Nanostructured Materials,” *The 48th Power Sources Conference*, Jun 11-14 2018, Denver, CO.
41. Eshghi A.T., Lee S.*, Sadoughi M.⁺, Hu C., Kim Y. C., and Seo J., “Experimental verification of tire energy harvester designed via reliability based design optimization method,” *SPIE Smart Structures/Non-Destructive Evaluation (NDE) 2018*, Mar 4-8 2018, Denver, CO.
42. Sadoughi M.⁺, Downey A.⁺, Hu C.*, and Laflamme S., “An Iterative Signal Fusion Method for Reconstruction of In-Plane Strain Maps from Strain Measurements by Hybrid Dense Sensor Networks,” *19th AIAA Information Systems-Infotech At Aerospace Conference, 2018 AIAA SciTech Forum*, Jan 8-12 2018, Kissimmee, FL.
43. Li M.⁺, Sadoughi M.⁺, Hu C.*, and Hu Z., “Reliability-based Design Optimization of High-Dimensional Engineered Systems Involving Computationally Expensive Simulations,” *20th AIAA Non-Deterministic Approaches Conference, 2018 AIAA SciTech Forum*, Jan 8-12 2018, Kissimmee, FL.
44. Alnaqeb A.*, Lui Y.H.⁺, Li Y.⁺, Hu C., Hu S., and Wei P., “Real-time Prediction of Battery Power Supply and Estimation of Future Power Demand for Electrical Rotorcraft,” *19th AIAA Non-Deterministic Approaches Conference, 2018 AIAA SciTech Forum*, Jan 8-12 2018, Kissimmee, FL.
45. Li Y.⁺, Sadoughi M.⁺, Li Z.⁺, and Hu C.*, “An Ensemble Bias-Correction Method with Adaptive Weights for Dynamic Modeling of Lithium-Ion Batteries,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 6-9 2017, Cleveland, OH.

46. Sadoughi M.⁺, Li M.⁺, Hu C.*[,] and MacKenzie C., “High-Dimensional Reliability Analysis of Engineered Systems Involving Computationally Expensive Black-Box Simulations,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 6-9 2017, Cleveland, OH.
47. Li Z.⁺, Wu D., Hu C.*[,] Terpeny J., and Shen S.⁺, “Ensemble Prognostics with Degradation-Dependent Weights: Prediction of Remaining Useful Life for Aircraft Engines,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 6-9 2017, Cleveland, OH.
48. Hu C.*[,] and MacKenzie C., “Optimizing Resilience When Designing Engineered Systems,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 6-9 2017, Cleveland, OH.
49. Sadoughi M.⁺, Hu C.*[,] and MacKenzie C., “A Maximum Expected Utility Method for Efficient Reliability Analysis of Complex Engineered Systems,” *18th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, 2017 AIAA AVIATION Forum*, Jun 5–9 2017, Denver, CO.
50. Li Z.⁺, Jiang Y., Hu C.*[,] and Peng Z., “Multi-Dimensional Variational Mode Decomposition Applied to Intrinsic Vibration Mode Extraction for Bearing Crack Detection in Wind Turbines with Large Speed Variation,” *35th Wind Energy Symposium, 2017 AIAA SciTech Forum*, Jan 9-13 2017, Grapevine, TX.
51. Hubbard C., Bavlsik J.⁺, Hegde C., and Hu C.*[,] “Data-Driven Prognostics of Li-Ion Rechargeable Battery using Bilinear Kernel Regression,” *Annual Conference of the Prognostics and Health Management (PHM) Society 2016*, Oct 3-6 2016, Denver, CO.
52. Hu C.*[,] Hong M., Li Y.⁺, Tenold C.J.⁺, and Jeong H.L.⁺, “On-Board Analysis of Degradation Mechanisms of Lithium-Ion Battery using Differential Voltage Analysis,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 21-24 2016, Charlotte, NC.
53. R. Fathi, J.C. Burns, D.A. Stevens, Hui Ye, Hu C., Gaurav Jain, Erik Scott, Craig Schmidt and J.R. Dahn*, “Ultra High-Precision Studies of Degradation Mechanisms in Aged LiCoO₂/graphite Li-ion Cells,” *18th International Meeting on Lithium Batteries (IMLB)*, June 19-24 2016, Chicago, IL.
54. Hu C.*[,] Jain G., Schmidt C., Strief C., and Sullivan M., “Online Estimation of Lithium-Ion Battery Capacity Using Sparse Bayesian Learning,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 2-5 2015, Boston, MA.
55. Kim H., Kim S., Kim T., Hu C., and Youn B.D.*[,] “Online Thermal State Estimation of High Power Lithium-Ion Battery,” *2015 IEEE International Conference on Prognostics and Health Management (PHM)*, Jun 22-25 2015, Austin, TX.
56. Seong S.⁺, Lee S.*[,] and Hu C., “Reliability-Based Design Optimization for Nonlinear Energy Harvesters.” *Proc. SPIE 9439, Smart Materials and Nondestructive Evaluation for Energy Systems 2015*, Mar 8-12 2015, San Diego, CA.
57. Hu C.*[,] Jain G., Tamirisa P., and Goraka T., “Method for Estimating Capacity and Predicting Remaining Useful Life of Lithium-Ion Battery,” *2014 IEEE International Conference on Prognostics and Health Management (PHM)*, Jun 22-25 2014, Spokane, WA.
58. Tamilselvan P., Wang P.*[,] and Hu C., “Design of a Robust Classification Fusion Platform for Structural Health Diagnostics,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 4-7 2013, Portland, OR.
59. Wang P., Youn B.D.*[,] and Hu C., “Concurrent Design of Functional Reliability and Failure Prognosis for Engineered Resilience,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 4-7 2013, Portland, OR.

60. Xi Z.*, Jing R., Wang P., and Hu C., "A Copula-based Sampling Method for Data-driven Prognostics and Health Management," *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 4-7 2013, Portland, OR. [Ford Motor Company - Best Paper Award]
61. Youn B.D.*, Park K.M., Hu C., Yoon, J.T., and Bae Y.C., "Health Diagnostics of Water-Cooled Power Generator Stator Windings Using a Directional Mahalanobis Distance (DMD)," *2013 IEEE International Conference on Prognostics and Health Management (PHM)*, Jun 24-27 2013, Gaithersburg, MD.
62. Hu C., Youn B.D.*, and Kim T., "Statistical Health Grade System against Mechanical failures of Power Transformers," *Annual Conference of the Prognostics and Health Management (PHM) Society 2012*, Sep 23-27 2012, Minneapolis, MN.
63. Hu C., Youn B.D.*, Wang P., and Yoon, J.T., "An Ensemble Approach for Robust Data-Driven Prognostics," *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 12-15 2012, Chicago, DC. [Top 10 Best Paper Award out of 122 Accepted]
64. Hu C., Youn B.D.*, and Kim T., "Semi-Supervised Learning with Co-Training for Data-Driven Prognostics," *2012 IEEE International Conference on Prognostics and Health Management (PHM)*, Jun 18-21 2012, Denver, CO. [Best Paper Award]
65. Hu C., Youn B.D.*, and Chung J., "Online Estimation of Lithium-Ion Battery State-of-Charge and Capacity with a Multiscale Filtering Technique," *Annual Conference of the Prognostics and Health Management (PHM) Society 2011*, Sep 25-29 2011, Montreal, Canada.
66. Hu C., Youn B.D.*, and Kim T., "Semi-Supervised Learning with Co-Training for Data-Driven Prognostics," *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 28-31 2011, Washington, DC.
67. Youn B.D.*, Hu C., and Wang P., "Resilience-Driven System Design of Complex Engineered Systems," *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 28-31 2011, Washington, DC. [Top 10 Best Paper Award out of 118 Accepted]
68. Hu C. and Youn B.D.*, "An Asymmetric Dimension-Adaptive Tensor-Product Method for Reliability Analysis," *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 28-31 2011, Washington, DC.
69. Youn B.D.*, Hu C., and Wang P., "Resilience-Driven System Design of Complex Engineered Systems," *9th World Congress on Structural and Multidisciplinary Optimization (WCSMO-9)*, June 13-17 2011, Granship, Shizuoka, Japan.
70. Wang P., Youn B.D.*, and Hu C., "A Probabilistic Detectability-Based Structural Sensor Network Design Methodology for Prognostics and Health Management," *Annual Conference of the Prognostics and Health Management (PHM) Society 2010*, Oct 10-16 2010, Portland, OR.
71. Hu C., Youn B.D.*, and Wang P., "Ensemble of Data-Driven Prognostic Algorithms with Weight Optimization and K-Fold Cross Validation," *Annual Conference of the Prognostics and Health Management (PHM) Society 2010*, Oct 10-16 2010, Portland, OR.
72. Wang P., Youn B.D.*, and Hu C., "A Generic Sensor Network Design Framework Based on a Detectability Measure," *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 15-18 2010, Montreal, Quebec, Canada.
73. Hu C., Youn B.D.*, and Wang P., "Ensemble of Data-Driven Prognostic Algorithms with Weight Optimization and K-Fold Cross Validation," *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 15-18 2010, Montreal, Quebec, Canada.

74. Xi Z., Youn B.D.*, and Hu C., “Effective Random Field Characterization Considering Statistical Dependence for Probability Analysis and Design,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 15-18 2010, Montreal, Quebec, Canada.
75. Hu C., Youn B.D.*, Chung J., and Ortanez R., “A Multiscale Framework with Extended Kalman Filter for Lithium-Ion Battery SOC and Capacity Estimation,” *15th International Meeting on Lithium Batteries (IMLB)*, June 27-July 2 2010, Montreal, Quebec, Canada.
76. Hu C. and Youn B.D.*, “An Asymmetric Dimension-Adaptive Tensor-Product Method for Reliability Analysis,” *AIAA 2010-2109, 51th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Apr 12-15 2010, Orlando, FL.
77. Hu C. and Youn B.D.*, “Adaptive-Sparse Polynomial Chaos Expansion for Reliability Analysis and Design of Complex Engineering Systems,” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, Aug 30-Sep 2 2009, San Diego, CA.
78. Wang P., Youn B.D.*, and Hu C., “A Generalized Complementary Intersection Method (CIM) for System Reliability Analysis,” *AIAA 2009-2109, 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, May 4-7 2009, Palm Springs, CA.

Invited Talks

1. Hu C., “Battery State-of-Health Forecasting: When It Works and How Well,” *25th Advanced Automotive Battery Conference (AABC)*, Dec 10 2025, Las Vegas, NV.
2. Hu C., “Battery State-of-Health Forecasting: When It Works and How Well,” Department of Engineering, Team EV Powertrain, Chair of Automotive Technology, School of Engineering and Design, *Technical University of Munich*, Jul 1 2025, Munich, Germany.
3. Hu C., “Physics-Informed Machine Learning for Battery Capacity Forecasting in Second-Life Applications,” *School of Vehicles and Mobility at Tsinghua University*, Apr 28 2025, Beijing, China.
4. Hu C., “Physics-Informed Machine Learning for Battery Capacity Forecasting in Second-Life Applications,” *Collège de France*, Apr 14 2025, Paris, France.
5. Hu C., “Physics-Informed Machine Learning for Battery Capacity Forecasting in Second-Life Applications,” *University of Picardy Jules Verne (UPJV)*, Apr 11 2025, Amiens, France.
6. Hu C., “Data-Driven Design Decision Support for Remanufacturing of High-Value Components in Industrial and Agricultural Equipment,” *Project Highlight at The REMADE Institute Member Meeting*, Apr 9 2025, Washington, DC.
7. Hu C., “Toward Reliable Design of Engineered Systems: Design under Uncertainty and Health Prognostics,” *FM Global*, Mar 27 2025, Norwood, MA.
8. Hu C., “Toward Reliable Design of Engineered Systems: Design under Uncertainty and Health Prognostics,” *DeCoDE Research Group Seminar at the Department of Mechanical Engineering, Massachusetts Institute of Technology*, Mar 21 2025, Cambridge, MA.
9. Hu C., “Uncertainty-Aware Federated Learning for Machine Health Monitoring,” *USACM TTA on UQ Webinar Series*, Dec 5 2024, hosted online.
10. Hu C., “Physics-Informed Machine Learning for Battery State-of-Health Diagnostics and Prognostics,” *Research Seminar at the Zurich University of Applied Sciences (ZHAW)*, Nov 1 2024, Zurich, Switzerland.
11. Hu C., “Physics-Informed Machine Learning for Battery State-of-Health Diagnostics and Prognostics,” *2024 Battery Safety Workshop*, Aug 6 2024, Columbia, SC.
12. Hu C., “Early Life Prediction and Rapid State-of-Health Estimation of Lithium-ion Batteries,” *41st Annual International Battery Seminar & Exhibit*, Mar 15 2024, Orlando, FL.

13. Hu C., “Uncertainty Quantification in Machine Learning: A Tutorial on Federated Learning for Machine Health Monitoring,” *SIAM UQ 2024*, Feb 29 2024, Trieste, Italy.
14. Hu C., “Uncertainty Quantification in Machine Learning: An Application to Federated Learning for Machine Health Monitoring,” *IMAC*, Jan 31 2024, Orlando, FL. [Mini-Keynote Presentation]
15. Hu C., “Uncertainty-Aware Federated Learning for Machine Health Monitoring,” *8th Intelligent Maintenance Conference*, Sep 13 2023, Lausanne, Switzerland.
16. Hu C., “Physics-Informed Machine Learning for Battery Degradation Diagnostics,” *Honda Research Institute Europe*, Jun 22 2023, Offenbach am Main, Germany.
17. Hu C., “Physics-Informed Machine Learning for Battery Degradation Diagnostics: A Comparative Study,” *2023 Battery Safety Workshop*, Jun 9 2023, Charlotte, NC.
18. Hu C., “Physics-Informed Machine Learning for Battery Degradation Diagnostics,” *Research Seminar Series by the Department of Industrial and Systems Engineering at PolyU*, Apr 25 2023, hosted online.
19. Hu C., “Integrating Physics-Based Modeling and for Degradation Diagnostics of Lithium-ion Batteries,” *40th Annual International Battery Seminar & Exhibit*, Mar 23 2023, Orlando, FL.
20. Hu C., “Physics-Informed Machine Learning for Battery Degradation Diagnostics,” *Research Seminar Series by the Department of Mechanical Engineering at Indian Institute of Technology Kanpur (IIT Kanpur)*, Mar 3 2023, hosted online.
21. Hu C., “Physics-Informed Machine Learning for Battery Degradation Diagnostics and Early Life Prediction,” *Data Science Seminar at Beyond Limits*, Jan 11 2023, hosted online.
22. Hu C., “Battery Capacity Forecasting and Early Life Prediction,” *12th Annual Battery Safety Summit*, Oct 14 2022, Tysons Corner, VA.
23. Hu C., “Physics-Informed Machine Learning for Degradation Diagnostics,” *K1st World Symposium*, Nov 17 2022, Stanford, CA.
24. Hu C., “Physics-Informed Machine Learning for Battery Prognostics – Challenges, Data Acquisition, and Methodologies,” *Joint 9th IFAC Symposium on Mechatronic Systems and 16th International Conference on Motion and Vibration Control*, Sep 8 2022, Los Angeles, CA.
25. Hu C., “Physics-Informed Machine Learning for Battery Degradation Diagnostics and Prognostics,” *2nd Digital Twin International Conference (DigiTwin 2022)*, Sep 27 2022, hosted online.
26. Hu C., “Physics-Informed Machine Learning for Battery Prognostics – Challenges, Data Acquisition, and Methodologies,” School of Mechanical Engineering, Xi’an Jiaotong University, Jun 9 2022, hosted online.
27. Hu C., “Physics-informed machine learning for battery prognostics – challenges, data acquisition, and methodologies,” *2022 IEEE International Conference on Prognostics and Health Management (PHM)*, Jun 8 2022, hosted online. [Tutorial Presentation]
28. Hu C., “Physics-Informed Machine Learning for Battery Health Prognostics – Challenges, Data Acquisition, and Methodologies,” *2021 GIST Mini Symposium on Artificial Intelligence for Mechanical Engineering*, Dec 9 2021, hosted online.
29. Hu C., “Battery Capacity Forecasting and Early Life Prediction,” *3rd Asia Pacific Conference of the Prognostics and Health Management Society (PHM Asia Pacific 2021)*, Sep 8 2021, hosted online. [Tutorial Presentation]
30. Hu C., “Introduction to Battery Prognostics and Early Life Prediction,” *2021 IEEE International Conference on Prognostics and Health Management (PHM)*, Jun 7 2021, hosted online. [Tutorial Presentation]
31. Hu C., “Toward Reliable Design of Engineered Systems: Design under Uncertainty and Health Prognostics,” The University of Central Florida, Apr 9 2021, hosted online.

32. Hu C., “Toward Reliable Design of Engineered Systems: Design under Uncertainty and Health Prognostics” The Iowa Chapter of ASME, Feb 19 2021, hosted online.
33. Hu C., Kremer G.E., Nemani V.P., and Liu J., “Data-Driven Design for Remanufacturing of High-Value Components in Industrial and Agricultural Equipment,” Project Webinar Hosted by the REMADE Institute, Jan 7 2021, hosted online.
34. Hu C., “Engineering Design under Uncertainty and Probabilistic Failure Prognostics – Methods, Progress, and Challenges,” *International Conference on Uncertainty Quantification & Optimisation*, Nov 16 2020, hosted online. [Keynote Presentation]
35. Hu C., Javadi, N., and Thelen A., “Shaft Unbalance Correction and Bearing Health Monitoring,” Vermeer Corporation, Nov 3 2020, hosted online.
36. Hu C., “ISU Research on Battery Reliability and Lifetime Prediction: Challenges, Long-Term Tests and Methodologies,” ISU Electric Power Research Center/MISO Energy Storage Webinar — Session 7, Oct 23 2020, hosted online.
37. Hu C. and Nemani V., “Data-Drive Design Decision Support for Re-X of High-Value Components in Industrial and Agricultural Equipment,” John Deere, Aug 7 2020, hosted online.
38. Hu C., “Reliability Analysis of Hydraulic Drive Systems,” Deere & Company, Dec 17 2019, Ankeny, IA.
39. Hu C., “Predicting Transition in Capacity Fade Trend Using Physics-Based Prognostics,” *10th Annual Battery Safety Summit*, Oct 24 2019, Alexandria, VA.
40. Hu C., “Intelligent Failure Prognostics for Predictive Maintenance in Industrial Applications,” Rutgers, The State University of New Jersey, Sep 24 2019, Piscataway, NJ.
41. Hu C. and Sadoughi M., “Physics-Based Deep Learning for Bearing Fault Diagnostics,” Vermeer Corporation, Mar 12 2019, Ames, IA.
42. Hu C., “Intelligent Failure Prognostics for Industry Applications,” Minnesota Reliability Consortium (MRC) Meeting, Nov 13 2018, Minneapolis, MN.
43. Hu C., “Intelligent Failure Prognostics for Industry Applications,” Grace Engineered Products Inc., Sep 28 2018, Davenport, IA.
44. Hu C., “Intelligent Failure Prognostics of Lithium-Ion Energy Storage and Renewable Energy Systems,” Invited Guest Lecture, School of Mechanical Engineering, Xi’an Jiaotong University, Jul 17 2017, Xi’an, China.
45. Hu C., “Data-Driven Failure Prognostics of Complex Engineered Systems using Ensemble Prediction,” Invited Speaker, *Asia Pacific Conference of the Prognostics and Health Management Society 2017*, Jul 12-15 2017, Jeju, Korea. (Track on Data-Driven Prognostics)
46. Hu C. and Sadoughi M., “Gaussian Process (Kriging) for Design of Simulation Experiments,” Medtronic PLC, May 22 2017, Minneapolis, MN.
47. Hu C., “Intelligent Failure Prognostics of Agriculture and Farming Equipment,” John Deere, May 10 2017, Ankeny, IA.
48. Hu C., “Design for Reliability and Failure Prevention of Lithium-Ion Batteries: Physics-Based Degradation Modeling and Prognostics and Health Management (PHM),” Invited Guest Lecture, Electrical Power Research Center (EPRC) Spring Meeting, Iowa State University, Apr 13 2017, Ames, IA.
49. Hu C., “Prognostics and Health Management (PHM) of Lithium-Ion Energy Storage and Renewable Energy Systems,” Invited Guest Lecture, Department of Electrical and Computer Engineering, Iowa State University, May 11 2016, Ames, IA.

50. Hu C., “Data-Driven Failure Prognostics of High-Value Engineered Systems using Deep Learning and Ensemble Prediction,” Invited Talk, Center for Nondestructive Evaluation, Iowa State University, Apr 19 2016, Ames, IA.
51. Hu C., “Toward Life-Cycle Reliability Management: Reliability-Based Design and Prognostics and Health Management,” Invited Guest Lecture, Wind Energy Science, Engineering & Policy (WESEP) Program, Iowa State University, Oct 29 2015, Ames, IA.
52. Hu C., “Toward Life-Cycle Reliability Management: Reliability-Based Design and Prognostics and Health Management,” Iowa State University, Feb 12 2015, Ames, IA.
53. Hu C., “Design for Resilience of Energy Storage Systems,” Boise State University, Dec 8 2014, Boise, ID.
54. Hu C., “Toward Life-Cycle Reliability Management: Reliability-Based Design and Prognostics and Health Management,” City University of Hong Kong, Sep 26 2014, Hong Kong SAR.
55. Hu C., “Toward Life-Cycle Reliability Management: Reliability-Based Design and Prognostics and Health Management,” University of Maryland, Baltimore County, Mar 14 2014, Baltimore, MD.
56. Hu C., “Life-Cycle Reliability Management: Prognostics and Health Management,” Minnesota Reliability Consortium (MRC) Meeting, Jan 15 2013, Minneapolis, MN.
57. Hu C., “Achieving Reliable Engineering Product Design through Reliability-Based Design and Prognostics and Health Management (PHM),” Medtronic Technical Forum, Dec 9 2011, Minneapolis, MN.
58. Hu C., Youn B.D., and Chung J., “Online Estimation of Lithium-Ion Battery State-of-Charge and Capacity with a Multiscale Filtering Technique,” *Annual Conference of the Prognostics and Health Management (PHM) Society 2011*, Sep 25–29 2011, Montreal, Canada. (Battery Management System Workshop).

Professional Services and Membership

- Senior Editor (North America), *Engineering Optimization* 2024–Present
- Associate Editor, *ASME Journal of Mechanical Design* 2022–Present
- Review Editor, *Structural and Multidisciplinary Optimization* 2021–Present
- Associate Editor, *IEEE Sensors Journal* 2023–2025
- Member, Organizing Committee, *Battery Safety Workshop* 2023–Present
- Conference Chair, *ASME 50th Design Automation Conference (DAC)* 2023–2024
- Program Chair, *ASME 49th Design Automation Conference (DAC)* 2022–2023
- Co-Guest Editor, Special Section on “Reduced Order Modeling, Generative AI, and SciML in Digital Twins” in *Structural and Multidisciplinary Optimization* 2024–Present
- Co-Guest Editor, Special Section on “Knowledge-Reinforced Machine Learning for Reliability Modeling and System Optimization” in *Applied Mathematical Modeling* 2022–2023
- Co-Guest Editor, Special Section on “Joint Special Issue on Advances in Design and Manufacturing for Sustainability” in *ASME Journal of Mechanical Design* and *ASME Journal of Manufacturing Science and Engineering* 2022–2023
- Lead Guest Editor, Special Issue on “Physics-Informed Machine Learning Enabling Fault Feature Extraction and Robust Failure Prognosis” in *Mechanical Systems and Signal Processing* 2021–2023
- Lead Guest Editor, Special Issue on “Advanced Optimization Enabling Digital Twin Technology” in *Structural and Multidisciplinary Optimization* 2021–2023
- Member, ASME Design Automation Executive Committee 2021–Present
- Session Chair, Optimization algorithms - II (14th World Congress of Structural and Multidisciplinary

- Optimization) 2021
- Session Co-Chair, Robust design and reliability-based design optimization – III and Machine learning for design optimization - I (14th World Congress of Structural and Multidisciplinary Optimization) 2021
 - Session Co-Chair, Energy Storage System Design: Thermal, Structural, and Electrical Considerations (2020 IEEE Transportation Electrification Conference and Expo) 2020
 - Panelist, NSF CMMI Division, Dynamics, Control and Systems Diagnostics Program 2021–Present
 - Panelist, NSF IIP Division, Partnerships for Innovation Program 2020–Present
 - Panelist, NSF CNS Division, Cyber-Physical Systems Program 2019–Present
 - Session Co-Chair and Review Coordinator, Uncertainty Quantification in Simulation and Model Verification & Validation (ASME Computers and Information in Engineering Conference) 2017–Present
 - Panelist, NSF ECCS Division, Energy, Power, Control, and Network Program 2017–Present
 - Session Chair and Review Coordinator, Design for Resilience and Failure Recovery (ASME Design Automation Conference) 2016–Present
 - Panelist, NSF CMMI Division, Engineering and Systems Design Program 2016–Present
 - Co-Guest Editor, Special Section on “Prognostics and Health Management (PHM) in Smart Structures and Systems” in *Smart Structures and Systems* 2018
 - Track Chair, Data-Driven Prognostics I (Asia Pacific Conference of the PHM Society) 2017
 - Co-Guest Editor, Special Issue on “Battery Energy Storage and Management Systems” in *IEEE Access* 2017
 - Co-Guest Editor, Special Issue on “Complex System Health Management based on Condition Monitoring and Test Data” in *IEEE Access* 2016
 - Panel Chair, Battery Prognostics and Health Management (IEEE PHM Conference) 2014
 - Session Chair, Lithium-Ion Battery Health Prognostics (IEEE PHM Conference) 2014
 - Session Chair, Medical Equipment PHM (IEEE PHM Conference) 2013
 - Panelist, PHM Design Techniques & Algorithms (IEEE PHM Conference) 2012
 - Members, IEEE and IEEE Reliability Society 2013–Present
 - Member, American Society of Mechanical Engineers 2009–Present