

39th Quality & Productivity Research Conference & Short Course

ASAI Quality and Productivity Section



ASAI

2023 Quality & Productivity Research Conference

Statistics, Deep Learning & the People Side of Process



June 6-8, 2023



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Conference & Short Course Welcome

Welcome to QPRC 2023 and Short Course!

The [purpose of this conference](#) is to improve the quality of products and services and the productivity of industries by stimulating the research and development of better statistical methods for quality and productivity improvement. The conference theme is “Statistics, Deep Learning & the People Side of Process.” This focus cuts across many critical topics in the field today that meld both the quantitative and qualitative or hard and soft skills associated with data science and statistics that result in discoveries, progress, quality, and productivity. A pre-conference short course on machine learning is also offered in association with this conference.

Given that data science grew out of the fields of statistical analysis and data mining, QPRC 2023 aims to promote detailed discussions regarding cutting-edge methodologies in all aspects of data science and statistics. Hence, it is a unique opportunity for statisticians, data scientists, quantitative analysts, researchers, and practitioners from academia, industry, and government to meet, exchange ideas and experiences, form collaborations, interact with the next generation of rising students interested in these fields and increase your knowledge via the short course.

I’m also happy to welcome you to this event being hosted by the University of Houston (UH), which is a Tier-one research institution, located in the fourth largest city in the U.S., with a uniquely diverse population of students and faculty. It is also at the forefront of research in data science and statistics with the UH Hewlett Packard Enterprise Data Science Institute and many award-winning faculty working in statistics, reliability, and quality engineering.

In addition to prominent statisticians, data scientists, quantitative analysts, and representatives of different branches of both industry and government who have an established record of highly influential, methodological, and interdisciplinary research, I’m happy to have many students interested in and performing research about data science and statistic in attendance. I highly encourage all students to fully participate in conference activities and the short course to increase their knowledge, showcase their research, obtain useful feedback, build their professional networks, and develop strong future collaborative relationships.

Finally, many sincere thanks to members of the local and national organizing committees for making this conference and short course possible.

Please mark your calendars and plan to join us for the 2024 Joint Research Conference (combined event for 40th QPRC and Spring Research Conference) that will be held June 17-20, 2024 at the University of Waterloo, Canada.

Sincerely,

Dr. Jamison V. Kovach
QPRC 2023 Organizing Committee Chair
PMI Houston Endowed Professor in Project Management
Director, Lean Six Sigma Professional Training Program
Technology Division at the Cullen College of Engineering – University of Houston

Conference & Short Course Organizing Committees

The conference and short course organizing committee includes representatives from academia and industry who have taken an active part in planning and implementing the conference's scientific program and local events.

The local organizing committee includes:

Chair: Dr. Jamison V. Kovach, Technology Division at the Cullen College of Engineering, UH

Sponsorship Lead: Dr. Miguel Lozano, MD Anderson Cancer Center

Program Chair: Mr. John Terrell, MD Anderson Cancer Center

Short Course Chair: Dr. May Feng, College of Engineering, UH

Poster Session and NSF Funding Award Chair: Dr. Yaping Wang, College of Engineering, UH

NSF Funding Award Selection Committee Member: Dr. Mikyoung Jun, Mathematics, UH

Master of Ceremonies: Mr. Poria Doral, College of Engineering, UH

The national QPRC Steering Committee includes:

Dr. Michael Baron, American University

Dr. Haim Bar, University of Connecticut

Dr. Eric Chicken, Florida State University

Dr. Anne Driscoll, Virginia Tech University

Dr. Martha Garnder, GE Global Research

Dr. Will Guthrie, NIST Statistical Engineering Division

Dr. Jeff Hooper, Westorross Advisors LLC

Dr. Dan Jeske, University of California Riverside

Dr. Scott Kowalski, Minitab Inc.

Dr. Arthur Lui, Los Alamos National Laboratory

Dr. Miranda Martin, Los Alamos National Laboratory

Dr. Christian Mastrangelo, University of Washington

Dr. Matt Plumbee, University of Michigan

Dr. Alexandra Piryatinska, San Francisco State University

Dr. Sharad Prabhu, MetLife

Dr. Angela Schoergendorfer, Google

Dr. Mia Stephens, SAS Institute Inc.

Dr. Nathaniel Stevens, University of Waterloo, Canada

Dr. Brian Weaver, Los Alamos National Laboratory

Dr. Joanne Wendelberger, Los Alamos National Laboratory

Conference Speakers

Honored Guest

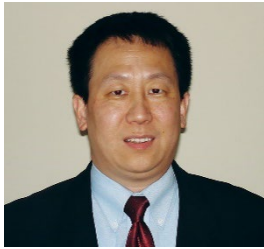


“The Intelligent Architecture of Fear and Inspiration”

[Dr. Nicole Radziwill](#), SVP Quality & Strategy – Ultronauts Inc. (formerly Ultra Testing)

What do depression, quality systems, and DALL-E image generation have in common? The latest innovations in artificial intelligence (AI), deep generative models, are transforming creative work, filmmaking, and architecture. But will the promise of these new approaches fade like IBM Watson, which was liquidated last year, or birth a new era of innovation? In this talk, we'll discuss the productivity improvements that are already being observed, the bias and data poisoning that can threaten even the best of models, and a postmodern horror story that will make you question the emerging nature of AI reality.

Plenary Speakers



“Data Science for Wind Energy”

[Dr. Yu Ding](#), Mike and Sugar Barnes Professor, Texas A&M University and Associate Director for Research Engagement, Texas A&M Institute of Data Science

Wind energy is one of the fastest-growing clean energy sources. Despite the significant growth in the past two decades, wind energy missed some intermediate goals set forth earlier. One critical element needed for accelerating wind energy growth is to significantly reduce its operational cost and further boost its market competitiveness. In his book, *Data Science for Wind Energy*, the speaker demonstrated how statistical and machine learning methods can help address research needs in wind energy applications. The speaker will discuss some challenges encountered in wind applications and present use cases in which statistical/machine learning models and solutions make sensible impacts.



“Thinking Lean in the Era of Data Analytics”

[Dr. Hung-da Wan](#), Associate Professor in Mechanical Engineering, The University of Texas at San Antonio

Data analytics and artificial intelligence (AI) has become very powerful in supporting decision making. It is definitely a valuable tool for Lean Six Sigma practitioners while improving quality and productivity in the pursuit of operational excellence. Interestingly as we observed, the benefits are mutual. Lean Six Sigma concepts and practices have also brought positive impacts on data analytics and may amplify its power for analyzing and improving system’s performance. In this talk, we will look into how Lean Six Sigma and data analytics have helped each other and explore the synergy among the two.



“Industrial Analytics Research and Education Facing Digital Transformation”

[Dr. Fugee Tsung](#), Chair Professor and Acting Dean, Information Hub, The Hong Kong University of Science and Technology (HKUST) – Guangzhou

This talk will present and discuss the challenges and opportunities that data science and analytics face in the era of digital transformation, and the roles we play in driving such transformation. In particular, there is a big opportunity for industrial and business analytics, under the digital transformation paradigm, in order to further explore ways of creating value from data and big data. On research: I will update the recent progress in our Quality and Data Analytics Lab on change detection in heterogeneous data streams using machine learning and deep learning techniques. On education: I will share the recent development of HKUST 2.0: a unique cross-disciplinary paradigm for industrial analytics education.

Short Course Instructors



Course 1: Machine Learning-based Process Modeling and Monitoring

[Dr. Ying Lin](#), Assistant Professor, Industrial Engineering, University of Houston

Description: Timely monitoring of a complex and dynamic process is critical for abnormal event detection, prevention, and control. The rapid advances in sensing and information technology have provided unprecedented information infrastructure, holding great promises to enable efficient process modeling and monitoring technologies being developed in a variety of applications, including healthcare and advanced manufacturing. However, there exist numerous longstanding challenges in process modeling and monitoring including 1) the complex dynamics in process progression and the lack of real-time observed high-quality measurements; 2) the sparse and inadequate monitoring data within a single process; 3) the difficulties in process modeling and monitoring under limited monitoring or sensing resources. To mitigate these challenges, this short course will introduce state-of-the-art machine learning techniques for 1) integrative process modeling and monitoring based on multivariate noisy sensing data fusion; 2) collaborative process modeling and monitoring for a population of dependent processes; 3) adaptive process modeling and monitoring that proactively allocates the limited monitoring resources to the most severe or high-risk processes. This short course will also introduce the applications of these techniques to the advanced superconductor manufacturing process and chronic disease modeling and monitoring.



Course 2: Fair Machine Learning in Healthcare

[Dr. Na Zou](#), Corrie & Jim Furber 64' Faculty Fellow, Department of Engineering Technology and Industrial Distribution, Texas A&M University

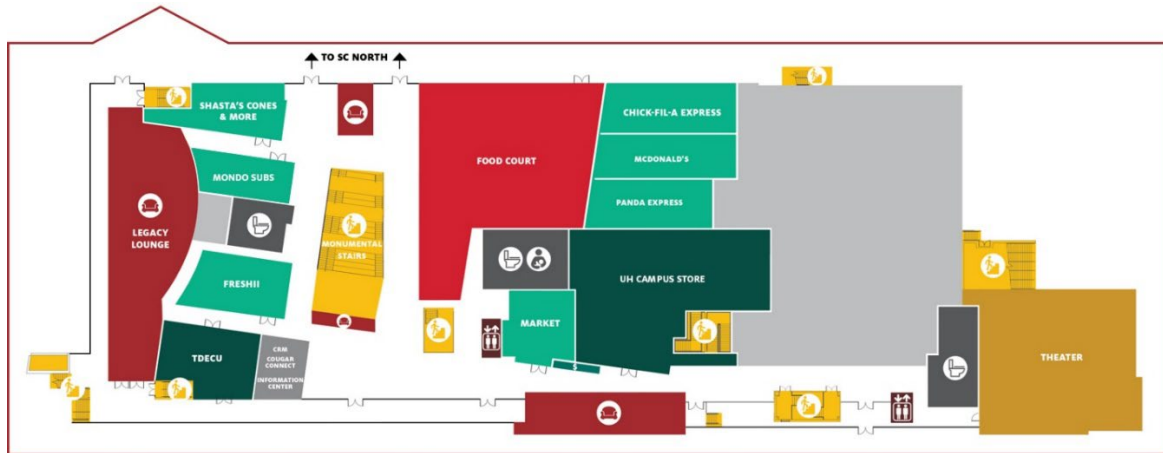
Description: Due to the digitization of healthcare data and advancements in computing power, machine learning methods are increasingly being used in the healthcare domain. When used in healthcare applications, machine learning methods inherit or even amplify existing biases in data, leading to fairness issues such as unequal distribution of healthcare resources or disparity in diagnostic accuracy across demographic groups. Therefore, addressing the issue of fairness has recently attracted increasing attention from the healthcare machine learning community. In this short course, we will bridge the gap between fair machine learning and healthcare disparities by defining the problem of fairness in healthcare, identifying its sources, and categorizing fair machine learning algorithms. Specifically, we define two types of fairness problems in healthcare based on distributive justice and categorize the corresponding measurements from a machine learning perspective. Then, we will introduce the various biases that exist, as well as the corresponding machine learning mitigation algorithms, along the stages in the machine learning life cycle. We will conclude by identifying additional challenges to the current fairness issue with machine learning in healthcare and outlining several promising new directions.

Conference & Short Course Venue

University of Houston Student Center Map

Student Center (South), located at [4455 University Dr., Houston, TX 77204](https://www.uh.edu/academic-affairs/locations/uh-student-center-south)

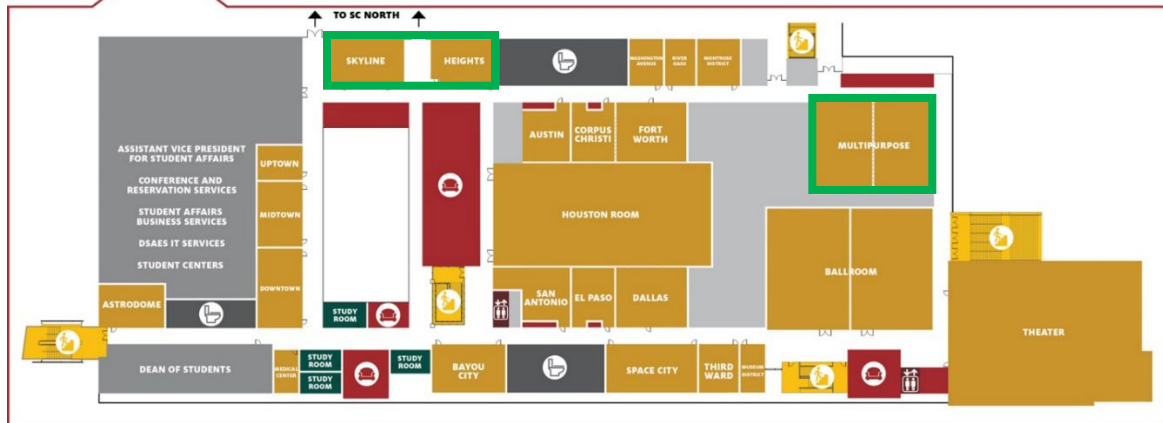
1st Floor



OFFICES	RETAIL STORES	DINING OPTIONS	FOOD COURT	ATM'S
CRM OFFICE 143	UH CAMPUS STORE 130	CHICK-FIL-A EXPRESS 124	125	ELEVATORS
COUGAR CONNECT 141	TDECU 144	FRESHII 151	THEATER 103	EVENT SPACES
INFORMATION CENTER 141		MARKET 132		LOUNGING AREAS
		MCDONALD'S 122		MOTHER'S ROOM
		MONDO SUBS 158		OFFICES
		PANDA EXPRESS 121		RESTROOMS
		SHASTA'S CONES & MORE 162		STAIR ACCESS

2nd Floor

All conference activities will take place in the Skyline, Heights & Multipurpose rooms



EVENT SPACES	OFFICES	ELEVATORS
ASTRODOME 257	ASSISTANT VICE PRESIDENT FOR STUDENT AFFAIRS 271	EVENT SPACES
AUSTIN 220J	AUDIO VISUAL 271	LOUNGING AREAS
BALLROOM 210	CONFERENCE & RESERVATION SERVICES 271	OFFICES
BAYOU CITY 219	DEAN OF STUDENTS 256	RESTROOMS
CORPUS CHRISTI 220M	DSAS IT SERVICES 271	STAIR ACCESS
DALLAS 220B	STUDENT CENTERS 271	STUDY ROOMS
DOWNTOWN 261		
EL PASO 220D		
FORT WORTH 220P		
HEIGHTS 224		
HOUSTON ROOM 220		
MEDICAL CENTER 255		
MIDTOWN 262		
MONTROSE DISTRICT 232		
MULTIPURPOSE 237		
MUSEUM DISTRICT 211		
RIVER OAKS 231		
SAN ANTONIO 220F		
SKYLINE 223		
SPACE CITY 214		
THEATER 203		
THIRD WARD 212		
UPTOWN 270		
WASHINGTON AVENUE 230		

Conference & Short Course Schedule

Overview

	Monday 6/5/2023	Tuesday 6/6/2023	Wednesday 6/7/2023	Thursday 6/8/2023
8-8:30am	Breakfast	Breakfast	Breakfast	Breakfast
8:30-9am				
9-9:30am	Short Course 1	Plenary 1	Plenary 2	Session 4
9:30-10am				
10-10:30am		Break	Demo 1	Natrella Scholar Presentations
10:30-11am				
11-11:30am	Short Course 1	Session 1	Load Buses**	Session 5
11:30am-12pm				
12-12:30pm		Lunch	Lunch	Transport to Space Center Houston
12:30-1pm				
1-1:30pm	Short Course 2	Session 2	Lunch (hot meal/sandwich & drink) & Time to Explore Space Center Houston on Your Own***	
1:30-2pm				
2-2:30pm		Break		
2:30-3pm	Demo 2			
3-3:30pm		Short Course 2	Session 3	
3:30-4pm				
4-4:30pm				
4:30-5pm				
5-5:30pm		Poster Session* & Networking	Load Buses**	
5:30-6pm				Transport Back (& pick-up box lunch dinners)
6-6:30pm		Banquet & Honored Guest Presentation	Multipurpose room open	
6:30-7pm				
7-7:30pm				
7:30-8pm				

*During the Poster Session and Banquet, drinks will be available to purchase at a cash/credit bar.

**Transportation to/from Space Center Houston via bus is included in the conference registration fee.

NOTE: All attendees traveling on the bus to/from Space Center Houston are responsible for being on time to load the buses for departure (11-11:30am) and return (5-5:30pm). **If you miss the bus, you are responsible for securing and paying for your own transportation.** Travel time is estimated to be 1-2 hours each way, depending on traffic. **Restroom facilities are NOT available on the bus.**

***If you select to drive yourself, you must pay for parking at Space Center Houston, pick-up your Space Center entry ticket from the conference registration table on Wed. morning, and meet the group at the Space Center Café area by the astronaut wall on the left-hand side between 12:30-1pm. **Those arriving late will need to purchase their own lunch.**

Detailed Session Matrix

Day	Time	Session	Location	Topic	Session Chair	Block	Speaker			Presentation Title	*Contributed Sessions					
							First Name	Last Name	Organization							
Mon., Jun. 5th	8-9am	Breakfast	Skyline	Machine Learning	Poria Doralí, UH	9-12:30	Ying	Lin	University of Houston	Machine Learning-based Process Modeling & Monitoring						
	9-10:30am	Short Course 1														
	10:30-11am	Break														
	11am-12pm	Short Course 1														
	12:30-1:30pm	Lunch														
	1:30-3pm	Short Course 2														
	3-3:30pm	Break									1:30-5	Na	Zou	Texas A&M University	Fair Machine Learning in Healthcare	
	3:30-5pm	Short Course 2														
Tues., Jun. 6th	8-9am	Breakfast	Multipurpose													
	8:50-9am	Opening		Remarks	Jami Kovach, UH											
	9-10am	Plenary 1		Data Science	Poria Doralí, UH		Yu	Ding	Texas A&M University	Data Science for Wind Energy						
	10-10:30am	Demo 1		Software	David Luo, MD Anderson		Kevin	Potcner	JMP	Introducing JMP's New "Easy DOE" Platform for Setting Up & Analyzing Experiments						
	10:30-11am	Break														
	11am-12pm	Session 1A	Multipurpose	Process & Continuous Improvement	Matthew Hu, UH	11-11:30	Forrest	Breyfogle	Smarter Solutions	Performance Measurement Goals and Process Improvement: The Good, Bad & Ugly						
						11:30-12	Matthew	Hu	University of Houston	The Power of Design for Six Sigma & Digital Transformation to Drive Continuous Improvement						
		Session 1B	Skyline	Deep Learning	Edgard Maboudou, UCF	11-11:30	Hayden	Hampton*	University of Central Florida	Deep Learning Least Squares One-Class Classification						
						11:30-12	Edgard	Maboudou*								
		Session 1C	Heights	Human Factors & Reliability	David Han, UTSA	11-11:30	David	Lou	MD Anderson	Human Factors in Health Care						
	11:30-12	David	Han	University of Texas at San Antonio	Condition-Based Maintenance Policy Under Tweedie Exponential Dispersion Process											
	12-1pm	Lunch	Multipurpose													
	1-2:30pm	Session 2A	Multipurpose	Process Monitoring & Design	Eric Chicken, FSU	1-1:30	Daniel	Timme	Florida State University	Nonparametric Multivariate Profile Monitoring Using Regression Trees and Kolmogorov-Smirnov Test						
						1:30-2	Felipe	Barrientos		A Bayesian Approach for Nonparametric Multivariate Process Monitoring using Universal Residuals						
						2-2:30	Jonathan	Stewart		Profile Monitoring of Random Functions with Gaussian Process Basis Expansions						
		Session 2B	Skyline	Problem Solving & Analysis	Scott Wise, JMP	1-1:30	Nathan	Soderborg	E ³ ponent	Statistical Problem Solving in Industry: The People Side of the Process						
						1:30-2	Sarah	Burke	Air Force Inst. of Tech.	Improving Job Analysis Surveys in the Air Force						
						2-2:30	Scott	Wise*	JMP	Expand Your Horizons: 3D Representation in a 2D World						
		Session 2C	Heights	Data in Industry	D. Abuzar Yousef Ali Ahmed, King Saud University	1-1:30	Jhonathan	Herrera-Shaikh	Grant Thornton	Banking & Financial Services Data Management & Data Science in a Business Context						
						1:30-2	Heidi	Russell	UTHealth Houston	Measuring Health Care Quality During a Workforce Upheaval						
2-2:30						D. Abuzar Yousef Ali	Ahmed	King Saud University	Measuring and Analyzing the Value Exports of Saudi Dates to Indonesia							
2:30-3pm	Break															
3-3:30pm	Demo 2	Multipurpose	Software	Miguel Lozano, MD Anderson		Tom	Williams	Minitab	Using Minitab Products in Industry							

Day	Time	Session	Location	Topic	Session Chair	Block	Speaker			*Contributed Sessions	
							First Name	Last Name	Organization	Presentation Title	
Tues., Jun. 6th	3:30-5pm	Session 3A	Multipurpose	Big Data & Statistics	M.Z. Anis, Indian Statistical Institute	3:30-4	Wenshuang	Wang*	University of Houston	The Use Cases of Big Data in Smart Grid Applications	
						4-4:30	Karen	Hulting	Medtronic	Engineering Statistics Challenges in the Medical Device Industry	
						4:30-5	M.Z.	Anis	Indian Statistical Institute	On Assessing Process Capability for Auto-correlated Data in the Presence of Measurement Errors	
	5-6pm	Poster Session & Networking	Multipurpose	Research Posters	Yaping Wang, UH	While networking with your colleagues, please visit the posters on display, talk with the poster presenters & cast your votes for the best student research projects.					
						6-8pm	Banquet	Honored Guest	Jami Kovach, UH	Nicole	Radziwill
	Wed., Jun. 7th	8-9am	Breakfast								
9-10am		Plenary 2	Multipurpose	Lean Thinking	Poria Doral, UH		Hung-da	Wan	The University of Texas at San Antonio	Thinking Lean in the Era of Data Analytics	
10-11am		Session 4		Natrelia Scholar Presentations	Emmanuel Yashchin, IBM	10-10:30	Michael	Biehler	Georgia Tech	DETONATE: Nonlinear Dynamic Evolution Modeling of Time-dependent 3-dimensional Point Cloud Profiles	
						10:30-11	Ann Marie	Weideman	UNC Chapel Hill	Canopy2: Tumor Phylogeny Inference Using Bulk DNA & Single-cell RNA Sequencing	
11am-7pm		Facility Tour (lunch included)	Space Center Houston	11-11:30: Load Buses Outside UH Student Center South			All attendees are responsible for being on time to load the buses. If you miss the bus, you are responsible for securing & paying for your own transportation to/from Space Center Houston. Travel time is estimated to be 1-2 hours each way. Restroom facilities are NOT available on the bus.				
				5-5:30: Load Buses Outside Space Center Houston							
7-8pm	Dinner	Multipurpose	Box Lunches								
8-9am	Breakfast	Multipurpose									
Thurs., Jun. 8th	9-10am	Session 5A	Multipurpose	Error Detection	Lee Revere, UF	9-9:30	Dan	O'Leary*	Ombu Enterprises	Signal Detection of Medical Device Adverse Events	
		Session 5B		Skyline	Quality Control	Emmanuel Yashchin, IBM	9:30-10	Lee	Revere	University of Florida	Feasibility of AI to Identify & Predict Opportunities for Hospital Errors Using Electronic Medical Notes
							9-9:30	Decio	Correa*	IBM	Framework to Facilitate Data Science Best Practices &
	10-10:30am	Break	Multipurpose								
	10:30am-12pm	Session 6A	Multipurpose	Experimental Design	Rakhi Singh, Binghamton University	10:30-11	Bryan	Dodson	SKF	Robust Design for Products & Processes	
						11-11:30	Bryan	Smucker*	Miami University	Comparing Supersaturated Designs Using Exact Screening Probabilities	
						11:30-12	Rakhi	Singh	Binghamton University	A New Analysis Method to Identify Interactions in Screening Experiments	
		Session 6B	Skyline	Managing Projects & People	Ron Hopkins, UH	10:30-11	Louis Christy	Huston Dillard	Gomeraki	Change Management	
						11-11:30	Dennis	Sherman	University of Houston	ISO & Project Management	
	11:30-12	Ron	Hopkins						Relationship Management		
12-1:30pm	Lunch & Plenary 3	Multipurpose	Digital Transformation	Poria Doral, UH		Fugee	Tsung	The Hong Kong University of Science & Technology - Guangzhou	Industrial Analytics Research & Education Facing Digital Transformation		

Student Support

Students had two options to receive support to participate in QPRC 2023 and the short course.

Mary G. and Joseph Natrella Scholarships

Two winners of the Mary G. and Joseph Natrella Scholarships each received a \$3,500 grant, a \$500 stipend toward travel and housing expenses, and complimentary registration for the conference and the pre-conference short course. Recipients of the Natrella Scholarships will give a presentation on their research on Wed., June 7, 2023, 10-11am in the Multipurpose room of the UH Student Center South.

2023 Natrella Award Scholars:

Michael Biehler, Industrial and Systems Engineering, Georgia Institute of Technology

DETONATE: Nonlinear Dynamic Evolution Modeling of Time-dependent 3-dimensional Point Cloud Profiles

Modeling the evolution of a 3D profile as a function of multiple heterogeneous (multimodal) inputs and their initial shape is a difficult, yet fundamental problem in many applications. For example, in multistage manufacturing, the geometry of a part is affected by both the shape of the previous stage and the process conditions and settings at the current stage. The evolution of landslides on mountain ranges over time is affected by their shape topology at a given time and the environmental conditions at a given time point. We introduce a novel methodology for the nonlinear modeling of dynamically evolving 3D shape profiles. Our model integrates heterogeneous, multimodal inputs that may affect the evolution of the 3D shape profiles. Additionally, we leverage the forward and backward temporal dynamics to preserve the underlying temporal physical structures. Our approach is based on the Koopman operator theory for high-dimensional nonlinear dynamical systems. We leverage the theoretical Koopman framework to develop a deep learning-based framework for nonlinear, dynamic 3D modeling with consistent temporal dynamics. We evaluate our method on multiple high-dimensional and short-term dependent problems, and it achieves accurate estimates, while also being robust to noise.

Ann Marie Weideman, Department of Biostatistics, UNC Chapel Hill

Canopy2: Tumor Phylogeny Inference Using Bulk DNA & Single-cell RNA Sequencing

Tumors are typically a mixture of several genotypically and phenotypically distinct cell populations. This fact contributes to drug resistance and to the failure of targeted therapy, rendering the study of intratumor heterogeneity of utmost importance. One way to better understand tumor progression and characterize intratumor heterogeneity is through reconstruction of the phylogenetic tree, a branching diagram that displays accumulation of mutations across time. Traditionally, this was done using bulk DNA sequencing, which does not allow the characterization of small clones and often returns multiple tree structures that are equally supported by the data. However, single-cell methods offer a distinct advantage: individual cells can be examined at a high resolution, enabling unparalleled interrogation of the genome and transcriptome. Unfortunately, the integration of single-cell sequencing data is limited by the high cost of acquisition, large fractions of observed zeros, and susceptibility to technical noise due to amplification. Thus, there is an advantage to developing a joint model that incorporates both bulk-tissue and single-cell sequencing data.

NSF Student Support Funds Award



The National Science Foundation (NSF) student support funds were awarded to graduate students from universities across the U.S. participating in the conference and/or short course to help defray their cost of transportation, hotel accommodations, and registration fees. All student awardees are presenters in the poster session on Tues., June 6, 2023, 5-5pm in the Multipurpose room of the UH Student Center South. **Posters must be displayed at the conference by 4pm on June 6** in the numbered area assigned in the list below and remain displayed for the duration of the conference.

NSF Travel Fund Awardees & Poster Session Presenters

Poster No.	First Name	Last Name	Poster Title	University	Department	Degree Program
1	Jacob	Akubire	Comparing Effectiveness of Orthogonal Designs to Supersaturated Designs	Miami University	Statistics	MS
2	Thamer	Alnazzal	Cardiovascular Disease Management via Rule-based Personalized Lifestyle	University of Houston	Industrial Engineering	MS
3	Dila Ram	Bhandari	Statistical Models & Time Series Forecasting on Crime Data in Nepal	Tribhuvan University (Kathmandu, Nepal)	Statistics	PhD
4	Derrick	Bonney	General Penalized Logistic Regression for Gene Selection in Data	Washington State University	Mathematics & Statistics	Statistics
5	Zhaohu Jonathan	Fan	Quantifying & Visualizing Partial Association Between Mixed Variables	University of Cincinnati	Operations Business Analytics & IS	PhD
6	Kimberly	Geoffrey	The Relationship Between Social Support & Self-reported Levels of Depression	Columbia University Mailman School of Public Health	Epidemiology	MPH
7	Xin	Gu	A Novel Approach to Measure Racial Heterogeneity	University of Cincinnati	Geography & GIS	PhD Geo IS

Poster No.	First Name	Last Name	Poster Title	University	Department	Degree Program
8	Hayden	Hampton	One-Class Classification for Neural Network Using Least Squares OCSVM	University of Central Florida	Statistics & Data Science	PhD Big Data Analytics
9	Yifei	Huang	Designer's Choice for Paid Research Study	University of Illinois Chicago	Mathematics, Stats & Computer Sci.	PhD in Statistics
10	Jeevan	Jankar	A DoE Approach for Variable Selections Through Active Learning for CE	University of Georgia	Statistics	PhD
11	Tanapol	Kosolwattana	Online Monitoring for Dependent Dynamic Processes with Resource Constraints	University of Houston	Industrial Engineering	PhD
12	Tong	Li	Distributional Robust POMDP Optimization with Distance-based Uncertainties	University of Houston	Industrial Engineering	PhD
13	Youhan	Lu	A Unified Approach to Variable Selection for Partially Linear Models	University of Illinois Chicago	Mathematics, Stats & Computer Sci.	PhD in Statistics
14	Michael	Magid	Prediction of Parkinson's Disease Progression Using Gait Data	Binghamton University	System Science & Industrial Eng.	PhD
15	Jurgen	Mezinaj	Monte Carlo Study to Estimate the Coverage Probabilities of the Bootstrap Confidence Intervals for the Sample Mean & Skewness	Oakland University	Mathematics & Statistics	PhD in Applied Mathematics
16	Saunak Kumar	Panda	Dynamic Resource Matching in Manufacturing Using Reinforcement Learning	University of Houston	Industrial Engineering	PhD
17	Man	Qi	A SWMM-based Evaluation of the Impacts of LID & Detention-basin Retrofits	University of Cincinnati	Geography	PhD
18	Behnam	Sabzi	Reinforcement Learning for Load Restoration in Micro Grids	University of Houston	Industrial Engineering	PhD
19	Daniel	Timme	Smoothing Kolmogorov-Smirnov for Discrete Data Using Bayesian Bootstrap in Nonparametric Multivariate Profile Monitoring	Florida State University	Statistics	Statistics
20	Yipeng	Wang	Nonparametric Online Monitoring of Dynamic Networks	University of Florida	Biostatistics	PhD
21	Haichao	Zhang	Bayesian Shared-component Model for Dependence Zero-inflated Count Data	University of Cincinnati	Mathematical Science	PhD in Statistics

Conference Sponsors

Many sincere thanks to the following entities that provided funding to help make QPRC 2023 possible.

Industry Sponsors:



TESSELLE

University Sponsors:

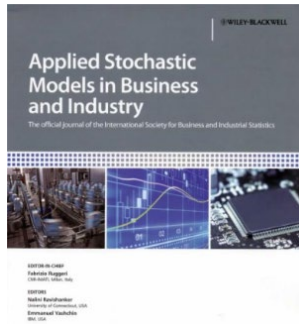


Hewlett Packard Enterprise Data Science Institute



Miscellaneous

Special Issue of ASMBI



Applied Stochastic Models in Business and Industry (ASMBI)

ASMBI has agreed to publish a special issue comprising selected papers from the QPRC 2023. To submit a paper, please visit ASMBI's [manuscript submission page](#) and follow the guidelines for authors. Please check "Yes" in the "Special Issue" section (in part 1 of the submission form), and then specify "2023QPRC" in the "Special Issue Information" section (in part 4 – Details & Comments). The deadline for submitting papers is September 30, 2023.

Papers will go through a peer review process.

For questions related to ASMBI and this special issue, please contact Emmanuel Yashchin at yashchin@us.ibm.com

ASA Membership Information

Please see the [ASA Membership Guide](#) for more information about the benefits of membership and how to become a member.

Family Care Conference Resources



For QPRC attendees with family care responsibilities, please visit <https://www.care.com/> to make the necessary arrangements for family care (e.g., child, elder care) in your local area or on-site at the conference to enable your attendance at the conference.

Conference Code of Conduct

All QPRC attendees are required to adhere to the American Statistical Association's [Code of Conduct](#) and the University of Houston's [Sexual Misconduct Policy](#). As needed, [this form](#) should be used to make a report of discrimination or sexual misconduct.

Upcoming Conferences of Interest

Virginia Tech will be hosting the Design and Analysis of Experiments (DAE) Conference on May 15-17, 2024. Please visit <https://sites.google.com/view/dae2024> for more information.

Feedback Surveys

Please complete these before you leave the short course and/or conference. They will only take a few minutes, and your feedback will provide invaluable information to help improve these events in the future. Click on the links below or scan the QR codes to access the surveys.

Short Course

https://universityofhouston.iad1.qualtrics.com/jfe/form/SV_cAbZDNZuOzPpHkW



Conference

https://universityofhouston.iad1.qualtrics.com/jfe/form/SV_cUtkl9pC6eUJlRQ



JOINT RESEARCH CONFERENCE 2024



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