



TEXAS A&M
Institute of
Data Science

Texas A&M Institute of Data Science Seminar Series

Online Monitoring of Big Data Streams—Roadmap and Recent Advances



The rapid advancements of internet of things (IoT) technology and cyber-physical infrastructure have resulted in a temporally and spatially dense data-rich environment, which provides unprecedented opportunities for performance improvement in various complex systems. Meanwhile, it also raises new research challenges on process monitoring, such as heterogeneous data formats, high-dimensional and big data structures, inherent complexity of the target systems, and potential lack of complete a priori knowledge. In this talk, the speaker will provide an overview of the research roadmap and recent advances in online monitoring of big data streams conducted by his group. Several research works will be discussed in detail to elaborate the needs and research evolution of developing data science and multidisciplinary analytics methods for effective process monitoring, dynamic sampling and quality improvement in industrial applications tailored to the characteristics of Big Data.

Kaibo Liu, Ph.D.

Associate Professor
Department of Industrial and Systems
Engineering
University of Wisconsin—Madison

Date: Monday, April 25, 2022

Time: 1:50 – 2:40 p.m. US Central Time

Zoom Meeting ID: 998 4499 3279

Passcode: 724615

Faculty host: Yu Ding, TAMIDS

Biography

Dr. Kaibo Liu is an associate professor in the Department of Industrial and Systems Engineering, University of Wisconsin-Madison, and is also the associate director of UW-Madison IoT Systems Research Center. He received the B.S. degree in industrial engineering from the HKUST, the M.S. degree in statistics and the Ph.D. degree in industrial engineering from the Georgia Institute of Technology. Dr. Kaibo Liu's research is in the area of system informatics and industrial big data analytics, with an emphasis on the data fusion approach for real-time system modeling, monitoring, diagnosis, prognostics, and decision making. His research has been funded by NSF, ONR, AFOSR, DOE, US ARMY CORPS OF ENGINEERS, and Industry. He is the recipient of three prestigious early career awards, including the 2019 Outstanding Young Manufacturing Engineer Award by SME, 2019 Feigenbaum Medal Award by ASQ, and 2019 Dr. Hamed K. Eldin Outstanding Early Career IE in Academia Award by IISE, and also the winner of the Innovations in Education Award from IISE in 2020 and the Award for Technical Innovation in Industrial Engineering from IISE in 2021. He is currently serving as an associate editor of IEEE Transactions on Automation Science and Engineering and a department editor of IISE Transactions.

You can also click this link to join the seminar <https://tamu.zoom.us/j/99844993279?pwd=TkJodWFVRURyMmkwakl4SWZGeVJTQT09>



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