

What to Do With All That Data: Failure Avoidance in Complex Systems

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Abstract: To address the need for increased system availability and reduced operating costs, organizations across all sectors of industry are turning to Prognostics and Health Management (PHM) to improve maintenance strategies and avoid unplanned downtime. Continued improvements in sensor and data storage technologies have enabled vast amounts of data to be collected on a wide array of systems, including aircraft, railway networks, and turbines. The immediate challenge for industry has become how to extract value from that data. In the longer term, what are the opportunities presented by data analytics, and what obstacles must be overcome to realize them?

This presentation will discuss the latest research at CALCE in the areas of PHM and machine learning and it will look ahead to a future where the abundance of data will place increasing demands on analytical resources and institutional conventions.

Presenter: Dr. Azarian's primary research interests are detection, prediction and analysis of failures in electronic components and systems. This extends from development of strategies for operating and maintaining complex systems such as aircraft, wind turbines, and rail systems, to the study of microscale phenomena such as wear of electrical contacts, electrochemical migration on printed circuit boards, and fatigue failure of solder joints. He has over 150 publications on electronic component reliability and packaging, prognostics and health management, and tribology, and holds 5 U.S. patents. He is chair of the SAE G-19A Test Laboratory Standards Development Committee on detection of counterfeit parts, which is developing the AS6171 family of standards.



If you are interested in further information, please email Dr. Azarian at mazarian@calce.umd.edu.