



Call for Papers

Special Issue on Data Science-Enhanced Manufacturing

With the exponential growth in both the volume and complexity of data acquired from manufacturing machines and processes, new opportunities emerge to leverage data science to significantly enhance the state of manufacturing. This necessitates research into data analytics to optimize and complement physical systems, experimental procedures, and simulation studies. Advanced data science techniques (e.g., computational sensing, optimization, and machine learning algorithms) enable effective and efficient extraction of information embedded in raw data to derive new knowledge, which can then be applied to introducing intelligence into the operation and control of machines and processes, leading to the low-cost production of high quality products. Beyond individual machines and processes, actionable information generated by data science can also improve the system-level operation of manufacturing enterprises; for example, by increasing the accuracy and reliability in predictive modeling of equipment failure rates and remaining useful life, consequently improving the robustness in preventative maintenance scheduling. Furthermore, data science can help streamline inventory management to better leverage energy-efficient components, optimize factory floor space utilization, and assist in logistics planning.

This special issue of the *ASME Journal of Manufacturing Science and Engineering* aims to provide a platform for researchers to showcase findings and explore emerging technologies in data science that complement physical science to enhance manufacturing. Original research contributions and/or reviews are invited for this Special Issue. **Topics of interests include but are not limited to:**

- Innovative sensing strategies for efficient and high quality data collection
- Machine learning techniques for information extraction to improve production control and design decisions
- Methods for data dimensionality reduction and data fusion
- Data security and data management
- Modeling of manufacturing processes under uncertainty
- Integration of physical knowledge with data for remaining service life prognosis and maintenance scheduling

Manuscripts are due **January 15th31th, 2017**, and publication of the Special Issue is scheduled for **October 2017**.

Submission Guidelines

Papers should be submitted electronically to the Journal at <http://journaltool.asme.org>. If you already have an account, login as author and select **Submit Paper** at the bottom of the page. If you do not have an account, select **Submissions** and follow the steps. In either case, at the **Paper Submittal page**, select the **Journal of Manufacturing Science and Engineering** and then select the special issue **Data Science-Enhanced Manufacturing**.

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