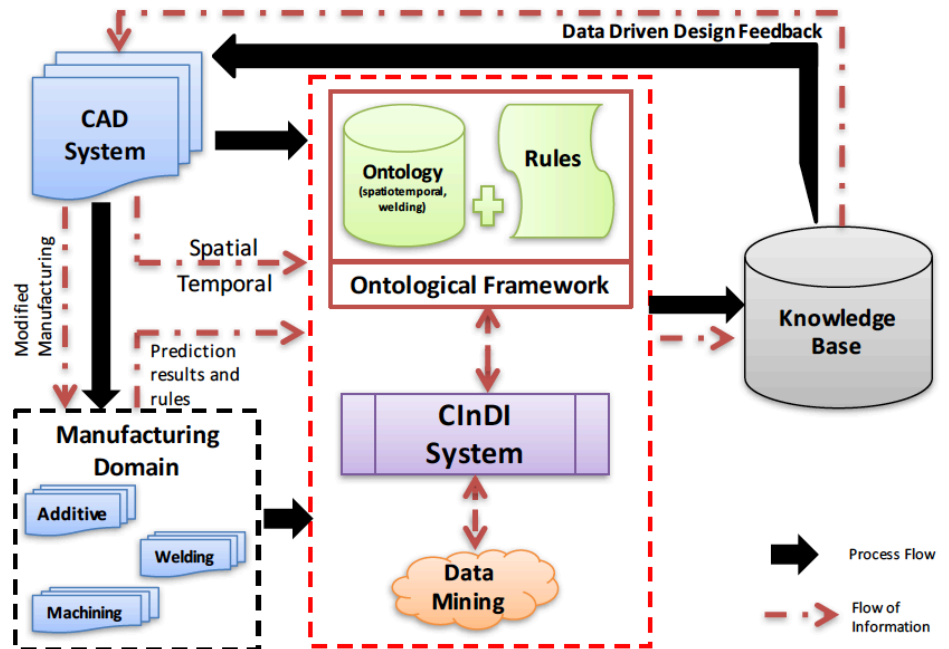


MAY
12th, 2017

h 9.30

Aula A (Giorgieri)
Edificio C7
(ex-Macchine)



Data-driven Design Decision Support for Welded Assembly

During the past decade, a significant effort has been undertaken in utilizing manufacturing process data to support decision making in engineering design. The manufacturing process data can play a significant role in the prediction of manufacturability and in defect detection.

The recent data-driven approaches range from using simple statistics from the historical data to building prediction models. Utilizing historical data can provide various opportunities for manufacturing processes. Also, it often results in increased engineering efficiency by reducing manual analysis and physical testing conducted by subject matter experts. However, the manufacturing process data has not been well integrated with design data models, and further in a more adaptable and machine interpretable manner to support a proper design decision.

In this talk, the current trends in data-driven approaches and ongoing efforts to integrate design, data, and decision support in the domain of the welded assembly design will be highlighted. The presented data-driven framework shows predictive modeling and design decision support methods with resistance spot welding quality data with highly-variable challenges. This talk will also cover the research directions to systematically build optimization models to support welded assembly design.

Dr. KYOUNG-YUN KIM

Dr. Kyoung-Yun Kim is an associate professor in the Department of Industrial and Systems Engineering at **Wayne State University**, where he directs the **Computational Intelligence and Design Informatics (CInDI) Laboratory**.



Dr. Kim's research focuses on Design Science; Design Informatics; Design Awareness on Manufacturing Processes; Semantic Assembly Design; and Product Life-cycle Modeling. Dr. Kim has received external funding from several U.S. federal agencies including NSF, DMDI, NIDRR, VA-CASE, DOD, and DOE, the Korean Ministry of Knowledge Economy, and various industries. Currently, Dr. Kim is a Site Director for the NSF Industry and University Cooperative Research Center (I/UCRC) for e-Design. Dr. Kim is an Associate Editor of Journal of Integrated Design and Process Science. Dr. Kim received top cited article award (2005-2010) from Journal CAD and 2003 IIE Transactions Best Paper Award. Dr. Kim is a member of IIE, ASME, SDPS, and ASEE.

