

Center for e-Design

IT-Enabled Design and Realization of Products and Systems

A National Science Foundation Industry/University Cooperative Research Center

RESEARCH

Welcome from the Center Director

Dear friends and colleagues,

Welcome to the September issue of the Center for e-Design newsletter. This issue focuses on the depth and breadth of our research partner capabilities, and highlights several of the research projects underway with industry members. We are looking forward to being together at the upcoming Industrial Advisory Board meeting in Andover, Massachusetts, October 2-4. This year's meeting includes a tour of the Raytheon Company, and includes presentations by Raytheon, ONR Mantec, FTL Labs Corp, and PTC. The full agenda can be found [HERE](#).

University at Buffalo opens new facilities

The University at Buffalo launched the Automation Sandbox, the Fabrication Factory, and the Motion lab which are shared faculty spaces complete with state-of-the-art equipment to support research in design automation, advanced manufacturing, and autonomous systems. The facilities complement active research programs in artificial intelligence and autonomous systems, the physiological impacts of human-robot interaction, and design using innovative materials. Using motion capture systems, robotics and prototype manufacturing facilities, and fabrication equipment, including water-jet and laser cutters, faculty and students are able to pursue their own path of research or education in advanced manufacturing.



Iowa State and Rockwell Collins partner to reduce crew operations in air transport

Under the Center for e-Design, Michael Domeich and Rockwell Collins have been investigating approaches for reduced crew operations in air transport. They are developing an approach that consists of defining combinations of new roles for pilot and ground personnel, and more tightly coupled human-automation interaction with automation that plays more of a role of a team member (agent) than a simple tool. Human-autonomy teams will increasingly rely on adaptive automation, where the automation agents and human operator work jointly to dynamically adjust and cooperate in pursuit of a shared objective. >>

Wayne State researchers bring legacy life cycle analytics to

modernized platforms

The viability of medical devices, like most products and services, can be analyzed using the Customer Services Life Cycle framework, which presents four stages - requirements, acquisition, ownership, and retirement. However, most current design analytics systems in the medical device space do not consider the costs associated with the latter two stages, and processes of auditing these devices to ensure regulatory compliance as well as patient safety are often unstructured and laborious. >>

RESEARCHER AWARDS

Penn State e-Design researcher Tim Simpson receives two engineering design awards

Tim Simpson, a professor and researcher known for his knowledge within the realm of product design and additive manufacturing, was the recipient of two awards at the 2018 American Society of Mechanical Engineers International Design Engineering Technical Conferences and Computers and Information in Engineering Conference. >>



UMass-Amherst post doc wins ASME best dissertation award

Thomas Hagedorn, a post-doctoral researcher in the Mechanical and Industrial Engineering Department at the University of Massachusetts-Amherst, a Center for e-Design partner site, was named the recipient of the Computers and Information in Engineering Division of the American Society of Mechanical Engineers Best Dissertation Award. >>



STUDENT SPOTLIGHT

Grit and a great mentor gave this graduate student his competitive edge

Connor Jennings, who will graduate in December with his Ph.D. in Industrial Engineering, believes that the opportunities he has been granted through the curriculum and work with the Center for e-Design at Penn State have given him a competitive advantage in the industry. >>




CALENDAR

OCTOBER 2-4

Fall Industrial Advisory Board Meeting
Hosted by UMASS-Amherst and the Raytheon Company

Academic partners include: Brigham Young University, Iowa State University, Oregon State University, Penn State, University at Buffalo, University of Massachusetts-Amherst, and Wayne State University



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