Mechanical and Aerospace Engineering Seminar

Dr. Thorsten Wuest
Industrial & Management Systems Engineering
West Virginia University

and

Mike Nager
Solution Center, Festo Didactic Inc

Will present a talk titled

Applying Smart Manufacturing Technologies for Research and Training

Abstract: During the presentation, the speakers will first address how they define the concepts of Advanced Manufacturing, Smart Manufacturing, and Industry 4.0. This includes discussion around selected key technologies related to Cyber-Physical (CP) Lab infrastructure, including data analytics, cybersecurity, energy monitoring, augmented and virtual reality (AR/VR), digital twins and visualization. We will showcase how a CP Lab is implemented at West Virginia University in support of the Industrial Engineering undergraduate and graduate program outreach activities with regional industry stakeholders. We will also touch upon the use of the CP Lab for various smart manufacturing research activities. Finally, we will discuss the specific example of our joint project by WVU and Festo funded by The Smart Manufacturing Institute (CESMII) where we are developing a scalable curriculum for Smart Manufacturing education.

Date: January 28, 2022
Location: CAMP 176
Time: 11:00 am
ZOOM Link for virtual attendance
https://clarkson.zoom.us/j/94333678632?pwd=b25DRlY3STRkak9iNGFmMUY1UjNPZz09
Meeting ID: 943 3367 8632
Passcode: 743721
One tap mobile
+16468769923,,94333678632# US (New York)
+13017158592,,94333678632# US (Washington DC)

Bios:

Dr. Thorsten Wuest

Dr. Thorsten Wuest in an Associate Professor at West Virginia University at the Benjamin M. Statler College of Engineering and Mineral Resources. His research focusses on Smart Manufacturing, Machine Learning/Data Analytics, AI/ML and Hybrid Analytics, Industry 4.0, Servitization and Product Service Systems, as well as closed-loop, item-level Product Lifecycle Management (PLM) with a focus on smart manufacturing systems.

Dr. Wuest's research is funded by a variety of federal agencies (incl. NSF, NIST, CESMII/DoE), international agencies (incl. Thomas Jefferson Fund, DFG, EC, BMBF, etc.), and industry. In his research, he puts an emphasis on an interdisciplinary and holistic approach towards analysis and optimization. He is a recognized Smart Manufacturing thought leader, recognized among the 20 most influential professors in smart manufacturing by SME. In addition to publishing his work in the premier academic outlets of his field, he was featured by Forbes, Futurism, IndustryWeek, the World Economic Forum, CBC Radio, and World Manufacturing Forum, etc. He is involved in several professional societies in his field, among others, he is a member of IFIP WG 5.1 & 5.7, IFAC TC 5.3, SME, a senior member of IISE, and research affiliate of the CIRP. Dr. Wuest gave invited talks in eight countries and published three award-winning books, incl. Digital Supply Networks (McGraw-Hill), and over 150 peer-reviewed articles in international archival journals and conferences gathering over 4,600 citations to-date, and serves as a reviewer for many.

He serves as Vice-Chair Americas for the IFIP WG 5.7, is an Associate Editor for the Robotics & Computer-Integrated Manufacturing (RCIM), ASTM Journal Smart and Sustainable Manufacturing Systems (SSMS), and the International Journal of Manufacturing Research (IJMR), and a member of the Editorial Board for the Journal of Manufacturing Systems (JMSY) and Production & Manufacturing Research (PMR). He is a member of the Provost's Academic Transformation Advisory Committee, the WVU Faculty Senate (2021-2024), and previously of the Strategic Core Transformation Team at WVU and the Statler College Glen H. Hiner Dean search committee 2019. He serves on the Advisory Board for several companies and startups, including Maven Machines, Veepio, Sustainment, and the WVU Industrial Extension.

Mike Nager

Mike Nager is the author of "*The Smart Student's Guide to Smart Manufacturing and Industry 4.0*" and "*The Smart Manufacturing Terms You Need to Know!*". He is recognized by Onalytica as a Top 100 Influencer for Industry 4.0 and the Industrial Internet of Things (IIoT).

Mike has worked in sales and marketing for manufacturers of automation and industrial controls and visited over 500 manufacturing facilities. Mike attended the University of Scranton and Trinity College Dublin and is an electrical engineer. Mike co-founded the Solution Center of Festo Didactic and provides the most advanced "Learning Factories" for educators and researcher to further their work in IIoT.

Mike has presented at conference and published several articles including:

- "You're Not in Kansas Anymore! The Strange Physical World of Industrial Ethernet" presentation *BiCSI Conf.*
- "The Internet of Industrial Things" presentation at the *IEEE/ACM Conference*
- "How to Future Proof your Career in IoT Era" presentation at the *IoT Emerge Conference*
- "The Future of Production" article in the *Industrial Machinery Digest*
- "Bridging the Industry 4.0 Innovation Gap" article in *Quality Digest*
- "Industry 4.0 and the Rebirth of American Manufacturing" Keynote Presentation *Nevada Economic Conference*
- "Disruptive Changes from Robotics Driving the IIoT" presentation at Canadian Manufacturing Technology
- "Industry 4.0 Manufacturing and Training" Keynote presentation at the Réseau Innovation 4.0 Network
- "Redefining White-Collar Jobs in America", article in ACTE Technologies magazine
- "Wireless Network Technologies and Security", presentation at the California Water Environment Association
- How 5G will impact manufacturing work, quoted in Cisco's Technology newsletter