Industrial & Systems Engineering
Seminar Announcement

An Analytical Foundation for Optimal Compensation of Three-Dimensional Shape Deformation in Additive Manufacturing

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Abstract: Additive Manufacturing (AM) or three-dimensional (3D) printing is a promising technology that enables the direct fabrication of products with complex shapes without extra tooling and fixturing. However, control of 3D shape deformation in AM built products has been a challenging issue. One viable approach for accuracy control is through compensation of the product design to offset the geometric shape deformation. This work establishes an analytical foundation of optimal compensation of 3D shape deformation for high-precision AM.

Bio: *Qiang Huang* received his Ph.D. degree in Industrial and Operations Engineering from the University of Michigan-Ann Arbor. He is currently an Associate Professor and Gordon S. Marshall Early Career Chair in Engineering in the Daniel J. Epstein Department of Industrial and Systems Engineering, University of Southern California, Los Angeles. His research interests include Integrated Nanomanufacturing & Nanoinformatics, and Theoretical Foundations of Accuracy Control for Additive Manufacturing. He received the prestigious US National Science Foundation CAREER award in 2011 and IEEE Transactions on Automation Science and Engineering Best Paper Award from IEEE Robotics and Automation Society in 2014. He is an Associate Editor of IEEE Transactions on Automation Science and Engineering and of IEEE Robotics and Automation Letters. He is a Guest Editor for Journal of Quality Technology, and has been a member of the scientific committee (Editorial Board) for the North American Manufacturing Research Institution (NAMRI) of SME, 2009–2011 and 2013-2015. He is a member of IEEE, INFORMS, IIE and ASME.

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