Rochester Joint Chapter of the IEEE Computer and Computational Intelligence Societies

Rochester, New York

present

3D Printing and Its Computational Challenges/Opportunities

by

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Date: Monday, May 2, 2016
Time: 6:00 p.m. to 7:30 p.m. -- 6:00 Pizza/Networking, 6:30 Presentation
Location: RIT Campus, Golisano Hall - Bldg 70, Room 1400
Computer Society announcements and venue information:
http://ewh.ieee.org/r1/rochester/computer
Cost: Free. Open to IEEE members and non-members.

Abstract

The 3D Printing (3DP) industry has witnessed tremendous growth over the past decade. Much of the technology's growth stems from the fact that it allows virtually anyone to quickly and easily turn their ideas into functional prototypes. This talk will provide a short introduction to the wide range of 3D printing technologies in use today. One of the most exciting recent developments in 3D printing involves the use of "digital materials". In the same way that color documents are produced with multiple ink or toner cartridges, multi-material 3D printed parts can be produced by locally printing blends of different materials in any desired proportion. The resulting part's material properties can therefore be optimized for a given application and need not be uniform. As exciting as multi-material 3D printing is, it opens up a number of computing challenges for part design, geometry optimization, and file preparation. This talk will describe these challenges/opportunities in the context of recent multi-material 3D printing research projects at RIT's Additive Manufacturing and Multifunctional Printing (AMPrint) Center.

Speaker's Biography

Dr. Denis Cormier is the Earl W. Brinkman Professor of Industrial and Systems Engineering at Rochester Institute of Technology where he serves as director of the Additive Manufacturing and \ Multifunctional Printing (AMPrint) Center. He has worked in the area of additive manufacturing (commonly known as 3D printing) for 20 years with a specific focus on aerospace materials and applications of metal additive manufacturing. Most recently, his research has focused on multi-material functional printing processes and materials. Prior to joining RIT in 2009, he was a professor at North Carolina State University for 15 years. He is a founding member of ASTM's F-42 additive manufacturing standards group, and he serves on the editorial advisory boards for several journals including the *Rapid Prototyping Journal*, the *International Journal of Rapid Manufacturing*, and *Additive Manufacturing*.