

CURRICULUM VITAE

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EDUCATION:

Ph. D. in Mechanical Engineering, Georgia Institute of Technology, 2001.

Major: *Computer Aided Engineering and Design*.

Dissertation: *Computer-Aided Design for Rapid Tooling: Methods for Mold Design and Design-for-Manufacture*.

Dissertation Advisor: *David W. Rosen*

M. S. in Mechanical Engineering, Huazhong University of Science and Technology, 1996.

Major: *Computer Aided Geometric Design*.

Thesis: *Research on a Graphics Intelligent Recognition System for Scanned Images of Engineering Drawing*.

B. S. in Mechanical Engineering, Zhejiang University, 1993.

Major: *Manufacturing Engineering*.

PROFESSIONAL EXPERIENCE:

7/06~present: **Assistant Professor**, Epstein Department of Industrial and Systems Engineering, University of Southern California, Los Angeles, CA.

8/06~6/07: **Consultant**, 3D Systems Inc., Valencia, CA.

8/01~7/06: **Senior R&D Engineer**, 3D Systems Inc., Valencia, CA.

3/98~7/01: **Doctoral Research Assistant**, Georgia Institute of Technology, Atlanta, GA.

7/96~2/98: **Research Scientist**, CAD Center, Huazhong University of Science and Technology, Wuhan, Hubei, China.

7/96~2/98: **Lecturer**, School of Mechanical Engineering, Huazhong University of Science and Technology, Wuhan, Hubei, China.

9/93~6/96: **Graduate Research Assistant**, Huazhong University of Science and Technology, Wuhan, Hubei, China.

AWARDS, FELLOWSHIPS AND HONORS:

- 2011: **CAPPD Best Paper Award**, ASME 31th Computers and Information in Engineering Conference, Washington DC, August, 2011.

- 2011: **Outstanding Paper Award**, SME 39th North American Manufacturing Research Conference (NAMRC), Corvallis, Oregon, June, 2011.
- 2011: **NSF Fellowship** for Summer Institute on Energy Manufacturing, June 26 -July 1, Evanston, IL.
- 2010: **Leadership and Service Award**, Computer-aided Product and Process Development Technical Committee, ASME CIE Division, August 16, 2010, Montreal, Quebec, Canada.
- 2010: **Symposium Outstanding Paper**, 21st International Solid Freeform Fabrication (SFF) Symposium, Austin, Texas, August, 2010.
- 2010: **NSF Fellowship** for Summer Institute on Laser-Manufacturing, June 1-4, Evanston, IL.
- 2009: **Selected Participant**, U.S. Frontiers of Engineering Symposium, National Academy of Engineering, September 10-12, Irvine, California.
- 2009: **Invited Participant**, National Science Foundation (NSF) workshop on developing *Roadmap for Additive Manufacturing*, March 30-31, Arlington, VA.
- 2009: **NSF Fellowship** for Summer Institute on Nanoparticles and Nanocomposites, June 15-18, Lowell, MA.
- 2008: **Best Paper Award**, ASME 28th Computers and Information in Engineering Conference, Brooklyn, New York, August, 2008.
- 2008: **Outstanding Young Manufacturing Engineer**, Society of Manufacturing Engineers (SME).
- 2008: **NSF Fellowship** for Summer Institute on Nano-Manufacturing, June 2-5, Evanston, IL.
- 2007: **Zumberge Award** for Individual Research and Innovation, USC.
- 2007: **Research Initiation Award**, Society of Manufacturing Engineers (SME).
- 2007: **NSF Fellowship** for Summer Institute on Nano-Mechanics and Materials, June 23-26, Los Angeles, CA.
- 2005: **Best Paper Award**, ASME 25th Computers and Information in Engineering Conference, Long Beach, California, September, 2005.

RESEARCH

PRIMARY RESEARCH INTERESTS

My research interests are centered on Direct Digital Manufacturing (DDM) in micro- and meso-scales. DDM is a fabrication approach that can directly convert a computer-aided design model into a physical object. Hence it has been widely recognized as a disruptive manufacturing technology for a wide variety of applications. To achieve the full potentials of DDM on cost and time savings, the development

of novel DDM process, new process planning methodologies and a wide selection of materials are critical. In addition, DDM enables revolutionary new design by using complex three-dimensional shapes, heterogeneous material properties and multi-functionality. Systematic knowledge regarding modeling, analyzing, synthesizing, and optimizing such designs are required in order to achieve desired performance.

Aiming to develop DDM technologies that enable people to revolutionize future product design and manufacturing, my current research focuses on the following areas:

- (1) Process and machine development for direct digital manufacturing:
 - a. Develop novel processes based on new technologies
 - b. Use advanced computational techniques to improve process planning
- (2) Design methods for direct digital manufacturing and related CAD tools:
 - a. Topology design
 - b. Design analysis, optimization and visualization
- (3) Geometric computation and modeling methods for direct digital manufacturing.

PUBLICATIONS:

(names listed in order of authorship)

Referred Journal Articles Published or Accepted for Publication:

1. **Yong Chen**, Stephen Stoyan. “Optimal Multi-Piece Mold Design Based on a Mixed-Integer Programming Method”. International Journal of Computer Integrated Manufacturing (Accept).
2. Chi Zhou, **Yong Chen**, Zhigang Yang, Behrokh Khoshnevis, “Digital Material Fabrication Using Mask-Image-Projection-based Stereolithography.” Rapid Prototyping Journal (Accept).
3. Chi Zhou, **Yong Chen**, “Additive Manufacturing based on Optimized Mask Video Projection for Improved Accuracy and Resolution.” SME Journal of Manufacturing Processes (Accept).
4. Behrokh Khoshnevis, Mahdi Yoozbashizadeh, **Yong Chen**, “Metallic Part Fabrication Using Selective Inhibition Sintering (SIS).” Rapid Prototyping Journal, Vol. 18, No. 2, 2012.
5. **Yong Chen**, Jinho Jung, Yongqiang Li, “A Rapid Shape Acquisition Method by Integrating User Touching Input.” Virtual and Physical Prototyping, Vol. 6, No. 3, pp. 133-147, 2011.
6. Hanli Zhao, Charlie C. L. Wang, **Yong Chen**, Xiaogang Jin, “Parallel and Efficient Boolean on Polygonal Solids.” Visual Computer, Vol. 27, No. 6-8, pp. 507-517, 2011.
7. **Yong Chen**, Chi Zhou, Jingyuan Lao, “A Layerless Additive Manufacturing Process based on CNC Accumulation.” Rapid Prototyping Journal, Vol. 17, No. 3, pp. 218-227, 2011.
8. **Yong Chen**, Charlie C. L. Wang, “Uniform Offsetting of Polygonal Model based on Layered Depth-Normal Images.” Computer-aided Design, Vol. 43, No. 1, pp. 31-46, 2011.

9. Charlie C. L. Wang, Yuen-Shan Leung, **Yong Chen**, "Solid Modeling by Layered Depth-Normal Images on the GPU." *Computer-aided Design*, Vol. 42, No. 6, pp. 535-544, 2010.
10. Chi Zhou, **Yong Chen**, Richard A. Waltz, "Optimized Mask Image Projection for Solid Freeform Fabrication." *ASME Journal of Manufacturing Science and Engineering*, Vol. 131, No. 6, pp. 061004-1~12, 2009.
11. Chi Zhou, **Yong Chen**, "Three-Dimensional Digital Halftoning for Layered Manufacturing Based on Droplets." *Transactions of the North American Manufacturing Research Institution of SME*, Vol. 37, pp. 175-182, 2009.
12. **Yong Chen**, Shanglong Wang, "Computer-aided Product Design with Performance-Tailored Mesostructures." *Computer-aided Design and Application*, Vol. 5, No. 1-4, pp. 565-576, 2008.
13. **Yong Chen**, "An Accurate Sampling-based Method for Approximating Geometry." *Computer-aided Design*, Vol. 39, No. 11, pp. 975-986, 2007.
14. **Yong Chen**, "3D Texture Mapping for Rapid Manufacturing." *Computer-aided Design and Application*, Vol. 4, No. 6, pp. 761-771, 2007.
15. Shiva Sambu, **Yong Chen**, and David Rosen. "Geometric Tailoring: A Design For Manufacturing Method for Rapid Prototyping and Rapid Tooling." *ASME Journal of Mechanical Design*, Vol. 126(4), pp. 571-580, 2004.
16. **Yong Chen** and David Rosen. "A Reverse Glue Approach to Automated Construction of Multi-Piece Molds With Application to Rapid Tooling." *ASME Journal of Computing and Information Science in Engineering*, Vol. 3(3), pp. 219-230, 2003.
17. David Rosen, **Yong Chen**, Shiva Sambu, Janet Allen, and Farrokh Mistree. "The Rapid Tooling Testbed: A Distributed Design-For-Manufacturing System". *Rapid Prototyping Journal*, Vol. 9(3), pp. 122-132, 2003.
18. **Yong Chen** and David Rosen. "A Region Based Method to Automated Design of Multi-Piece Molds with Application to Rapid Tooling". *ASME Journal of Computing and Information Science in Engineering*, Vol. 2(2), pp. 86-97, 2002.
19. **Yong Chen**, Ling Zhu, Ming Chang. "A Global Line and Arc Recognition Approach for Scanned Image of Mechanical Drawings". *Chinese Journal of CAD & CG. Supplement*, Vol. 8, 1996.
20. **Yong Chen**, Ling Zhu, Ming Chang. "The Extraction and Segmentation of Connected Characters from Engineering Drawing". *Chinese Journal of Huazhong University of Science and Technology*. No. 4, Vol. 24, 1996.
21. **Yong Chen**, Ling Zhu, Ming Chang. "The Techniques of Processing Characters in Engineering Drawings". *Chinese Journal of Engineering and Computer Graphics*. No.1, Vol.9, 1996: 1~6.

Referred Journal Articles Submitted for Publication:

22. Yayue Pan, Chi Zhou, **Yong Chen**, “A Fast Mask Projection Stereolithography Process for Fabricating Digital Models in Minutes.” ASME Journal of Manufacturing Science and Engineering (in review).
23. **Yong Chen**, Charlie C. L. Wang, “Regulating Complex Geometries Using Layer Depth-Normal Images for Rapid Prototyping.” Rapid Prototyping Journal (in review).
24. Charlie C. L. Wang, **Yong Chen**, “Thickening Freeform Surface for Solid Fabrication.” Computer-aided Design (in review).
25. Pu Huang, Charlie C. L. Wang, **Yong Chen**, “Self-Intersection Free and Topologically Faithful Slicing of Implicit Solid.” ASME Journal of Computing and Information Science in Engineering (in review).
26. Yongqiang Li, **Yong Chen**, “Principal Stress Line Method for Topology, Shape and Size Optimization of Beam Structures.” ASME Journal of Mechanical Design (in review).
27. Chi Zhou, **Yong Chen**, “Mask Projection Large-area Stereolithography based on Calibrated Image Projection Systems.” Rapid Prototyping Journal (in review).

Referred Conference Proceedings (full paper review):

28. Behrokh Khoshnevis, Mahdi Yoozbashizadeh, **Yong Chen**, “Advancements in Solid Freeform Fabrication for Metallic Parts based on Selective Inhibition of Sintering (SIS).” ASME/ISCIE International Symposium on Flexible Automation (ISFA), St. Louis, Missouri, June 18-20, 2012.
29. Hamid Chabok, Chi Zhou, **Yong Chen**, Arash Eskandarinzhad, Qifa Zhou, and Kirk Shung, “Ultrasound Transducer Array Fabrication Based on Additive Manufacturing of Piezocomposites.” ASME/ISCIE International Symposium on Flexible Automation (ISFA), St. Louis, Missouri, June 18-20, 2012.
30. Yayue Pan, Chi Zhou, **Yong Chen**, “Rapid Manufacturing in Minutes: The Development of a Mask Projection Stereolithography Process for High-speed Fabrication.” Proceeding of the 2012 International Manufacturing Science and Engineering Conference, MSEC2012-7232, Notre Dame, Indiana, June 4 - 8, 2012.
31. Yayue Pan, Xuejin Zhao, Chi Zhou, **Yong Chen**, “Smooth Surface Fabrication in Mask Projection based Stereolithography.” Proceeding of 40th SME-North American Manufacturing Research Conference, NAMRC40-7715, Notre Dame, Indiana, June 4 - 8, 2012.
32. Behrokh Khoshnevis, Mahdi Yoozbashizadeh, **Yong Chen**, “Metallic Part Fabrication Using Selective Inhibition Sintering (SIS).” Materials Science & Technology 2011 - Proceedings: Additive Manufacturing of Metals, Editors: I. Harris, U. Ackelid, O. Harrysson, S. Babu, and B. Stucker, Columbus, OH, Oct. 16-20, 2011.
33. Pu Huang, Charlie C. L. Wang, **Yong Chen**, “Self-Intersection Free and Topologically Faithful Slicing of Implicit Solid.” ASME Computers and Information in Engineering Conference, DETC2011-47661, Washington, DC, USA, Aug. 28 ~ 31, 2011 (**CAPPD Best Paper Award**).

34. Yayue Pan, **Yong Chen**, Chi Zhou, “Fabrication of Smooth Surfaces based on Mask Projection Stereolithography.” Proceedings of Solid Freeform Fabrication Symposium, pp. 263-278, Austin, Texas, August 8~10, 2011.
35. Chi Zhou, **Yong Chen**, Zhigang Yang, Behrokh Khoshnevis, “Development of Multi-material Mask-Image-Projection-based Stereolithography Process for the Fabrication of Digital Materials.” Proceedings of Solid Freeform Fabrication Symposium, pp. 65-80, Austin, Texas, August 8~10, 2011.
36. Yayue Pan, Chi Zhou, **Yong Chen**, Jouni Partanen, “Fabrication of Conformal Ultrasound Transducer Arrays and Horns Based on Multi-axis CNC Accumulation.” Proceeding of the 2011 International Manufacturing Science and Engineering Conference, MSEC2011-50139, Corvallis, Oregon, June 13 - 17, 2011.
37. Chi Zhou, **Yong Chen**, “Additive Manufacturing based on Optimized Mask Video Projection for Improved Accuracy and Resolution.” Proceeding of 39th SME-North American Manufacturing Research Conference, NAMRC39-4725, Corvallis, Oregon, June 13 - 17, 2011 (**Outstanding Paper Award**).
38. Hanli Zhao, Charlie C. L. Wang, **Yong Chen**, Xiaogang Jin, “Parallel and Efficient Boolean on Polygonal Solids.” Computer Graphics International (CGI) 2011, Ottawa, Canada, June 12 - 15, 2011.
39. **Yong Chen**, Xiaoshu Xu, “Robust Geometric Computation for Complex Component Design and Manufacturing.” Proceeding of 2011 NSF Engineering Research and Innovation Conference, Atlanta, Georgia, January 4 - 7, 2011.
40. Stephen Stoyan, **Yong Chen**. “Multi-Piece Mold Design Based on Linear Integer Programming Toward Guaranteed Optimality”. Int’l Conference on Manufacturing Automation (ICMA 2010), Hong Kong, China, Dec. 13~15, 2010.
41. **Yong Chen**, Xiaoshu Xu. “Manufacturability Analysis of Infeasible Features in Polygonal Models for Web-based Rapid Prototyping”. Int’l Conference on Manufacturing Automation (ICMA 2010), Hong Kong, China, Dec. 13~15, 2010.
42. Hamid Reza Chabok, Chi Zhou, Shima Alagha, **Yong Chen**, Qifa Zhou, and Kirk K. Shung, “Development of a Digital Micro-Manufacturing Process for High Frequency Ultrasound Transducers.” IEEE International Ultrasonics Symposium, San Diego, California, October 11 ~ 14, 2010.
43. Chi Zhou, **Yong Chen**, “Additive Manufacturing based on Multiple Calibrated Projectors and Its Mask Image Planning.” ASME Design Automation Conference, DETC2010-28922, Montreal, Quebec, Canada, Aug. 15 ~ 18, 2010.
44. Yongqiang Li, **Yong Chen**, “Five-axis Manufacturing Simulation based on Normal Arc Mapping and Offset Volume Computation.” ASME Computers and Information in Engineering Conference, DETC2010-29051, Montreal, Quebec, Canada, Aug. 15 ~ 18, 2010.
45. **Yong Chen**, Charlie C. L. Wang, “Contouring of Structured Points with Small Features.” ASME Computers and Information in Engineering Conference, DETC2010-29094, Montreal, Quebec, Canada, Aug. 15 ~ 18, 2010.

46. Yongqiang Li, **Yong Chen**, “Beam Structure Optimization for Additive Manufacturing based on Principal Stress Lines.” Proceedings of Solid Freeform Fabrication Symposium, Austin, Texas, August 8~11, 2010.
47. **Yong Chen**, Chi Zhou, Jingyuan Lao, “Additive Manufacturing without Layers: A New Solid Freeform Fabrication Process based on CNC Accumulation.” Proceedings of Solid Freeform Fabrication Symposium, Austin, Texas, August 8~11, 2010 (**SFF Symposium Outstanding Paper**).
48. Jinho Jung, **Yong Chen**, “Touch-RE: A Touch-based Model Acquiring Method for Personal Manufacturing.” Proceedings of Solid Freeform Fabrication Symposium, Austin, Texas, August 8~11, 2010.
49. Yongqiang Li, **Yong Chen**, Chi Zhou, “Design of Flexible Skin for Target Displacements based on Meso-Structures.” ASME Computers and Information in Engineering Conference, DETC2009/CIE-87137, San Diego, California, Aug. 30 ~ Sept. 2, 2009.
50. Chi Zhou, **Yong Chen**, Richard A. Waltz, “Optimized Mask Image Projection for Solid Freeform Fabrication.” ASME Design Automation Conference, DETC2009/DAC-86268, San Diego, California, Aug. 30 ~ Sept. 2, 2009.
51. Chi Zhou, **Yong Chen**, “Calibrating Large-area Mask Projection Stereolithography for Its Accuracy and Resolution Improvements.” Proceedings of Solid Freeform Fabrication Symposium, Austin, Texas, August 2009.
52. Behrokh Khoshnevis, Mahdi Yoozbashizadeh, **Yong Chen**, “Metallic Parts Fabrication with Selective Inhibition Sintering.” Supplemental Proceedings: Volume 1: Fabrication, Materials, Processing and Properties, The Minerals, Metals, & Materials Society (TMS) 2009, pp. 381~388.
53. **Yong Chen**, Charlie C. L. Wang, “Layer Depth-Normal Images for Complex Geometries – Part One: Accurate Modeling and Adaptive Sampling.” ASME Computers and Information in Engineering Conference, DETC2008-49432, Brooklyn, New York, August 3 ~ 6, 2008 (**Best Paper Award**).
54. Charlie C. L. Wang, **Yong Chen**, “Layer Depth-Normal Images for Complex Geometries – Part Two: Manifold-Preserved Adaptive Contouring.” ASME Computers and Information in Engineering Conference, DETC2008-49576, Brooklyn, New York, August 3 ~ 6, 2008.
55. **Yong Chen**, Shanglong Wang, “Computer-aided Product Design with Performance-tailored Mesostructures.” International CAD Conference and Exhibition, Orlando, Florida, June 23 ~ 27, 2008.
56. **Yong Chen**, “Accurate and Robust Boolean Operations on Polygonal Models.” ASME Computers and Information in Engineering Conferences, DETC2007-35731, Las Vegas, Nevada, Sept. 4 ~ 7, 2007.
57. **Yong Chen**, “Non-uniform Offsetting for Laser Path Planning of Solid Freeform Fabrication Machines.” Proceedings of Solid Freeform Fabrication Symposium, pp. 174-186, Austin, Texas, August 6 ~ 8, 2007.

58. **Yong Chen**, “3D Texture Mapping for Rapid Manufacturing.” International CAD Conference and Exhibition, Honolulu, Hawaii, June 25 ~ 29, 2007.
59. **Yong Chen**, “A Mesh-based Geometric Modeling Method for General Structures.” ASME Computers and Information in Engineering Conferences, DETC2006-99513, Philadelphia, Pennsylvania, Sept. 10 ~ 13, 2006.
60. **Yong Chen**, Hongqing Wang, David Rosen, and Jarek Rossignac, 2005, “Filleting and Rounding Using A Point-Based Method.” ASME Design Automation Conference, DETC2005/DAC-85408, Long Beach, California, Sept. 24 ~ 28, 2005.
61. Hongqing Wang, **Yong Chen**, and David Rosen, 2005, “A Hybrid Geometric Modeling Method for Large Scale Conformal Cellular Structures.” ASME Computers and Information in Engineering Conference, DETC2005/CIE-85366, Long Beach, California, Sept. 24 ~ 28, 2005 (**Best Paper Award**).
62. **Yong Chen** and David Rosen. “A Reverse Glue Approach to Automated Construction of Multi-Piece Molds.” ASME Computers and Information in Engineering Conference, DETC2003/CIE-48171, Chicago, Illinois, Sept. 9-12, 2003.
63. David Rosen, **Yong Chen**, Shiva Sambu, Janet Allen, and Farrokh Mistree, 2002. “The Rapid Tooling Testbed: A Distributed Design-For-Manufacturing System”. Int’l Conference on Manufacturing Automation (ICMA 2002), Hong Kong, China, Dec. 10~12, 2002.
64. Shiva Sambu, **Yong Chen**, and David Rosen. “Geometric Tailoring: A Design For Manufacturing Method for Rapid Prototyping and Rapid Tooling.” ASME Design for Manufacturing Conference, DETC2002/DFM-34169, Montreal, Canada, Sept. 29 ~ Oct. 2, 2002.
65. **Yong Chen** and David Rosen. “A Region Based Method to Automated Design of Multi-Piece Molds with Application to Rapid Tooling.” ASME Computers and Information in Engineering Conference, DETC2001/CIE-21294, Pittsburgh, Pennsylvania, Sept. 9-12, 2001.
66. **Yong Chen** and David Rosen. “Problem Formulation and Basic Elements for Automated Multi-Piece Mold Design.” ASME Computers and Information in Engineering Conference, DETC2001/CIE-21293, Pittsburgh, Pennsylvania, Sept. 9-12, 2001.
67. David Rosen, **Yong Chen**, Jonathan Gerhard, Janet Allen, and Farrokh Mistree, 2000, “Design Decision Templates and Their Implementation for Distributed Design and Fabrication”. ASME DETC 2000 Conference, DAC-14293, Baltimore, Maryland, Sept. 10-13, 2000.
68. Jonathan Gerhard, Scott Duncan, **Yong Chen**, Janet Allen, David Rosen, Farrokh Mistree and Andrew Dugenske. 1999. “Towards a Decision-Based, Distributed Product Realization Environment for Engineering Systems”. ASME DETC 1999 Conference, CIE-9085, Las Vegas, Nevada, Sept. 14-17, 1999.
69. **Yong Chen** and Ming Chang. "A New Algorithm for Interactive B-Spline Surface Interpolation and Its Realization". Proc. of the National Conference of Young Computer Scientists (NCYCS'96) — The New Research Advance of Chinese Young Computer Scientists, Zhejiang University Press, Oct. 1996.

Non-referred Conference Proceedings (Presentation only):

70. Stephen Stoyan, **Yong Chen**. “Mixed-integer Programming Approach to Multi-piece Mold Design and Supply Chain Extensions”. Institute of Operational Research and Management Science (INFORMS) Annual Meeting 2011, Charlotte, NC, Nov. 15, 2011.
71. Behrokh Khoshnevis, Anahita Afshin Navid, Mahdi Yoozbashizadeh, **Yong Chen**, “Moldless Powder Metallurgy by Sintering Inhibition.” Proceedings of Industrial Engineering Research Conference, Nashville, Tennessee, May 19 ~ 23, 2007.

Technical Reports:

72. Charlie C.L. Wang, **Yong Chen**, “Layered Depth-Normal Images: a Sparse Implicit Representation of Solid Models.” Technical report, 2008.
73. **Yong Chen**, Hongqing Wang, David Rosen, and Jarek Rossignac, “A Point-based Offsetting Method of Polygonal Meshes.” Technical report, 2005.

Theses:

74. **Yong Chen**, “Computer-aided Design for Rapid Tooling: Methods for Mold Design and Design-for-Manufacture.” Ph.D. Dissertation, G. W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, 2001.

Others:

75. **Yong Chen**, “Point-based Computational Techniques in Computer-aided Product Development.” ASME CIE Division Summer Newsletter, 2008.

PATENTS:

- Tom Kerekes, Jouni Partanen, **Yong Chen**, Charles Hull. “Improved Wall Smoothness, Feature Accuracy and Resolution in Projected Images via Exposure Levels in Solid Imaging”. 3D Systems, Inc. Chinese Patent Office Applied, 2007, (In pending).
- Tom Kerekes, Jouni Partanen, **Yong Chen**, Charles Hull. “Improved Wall Smoothness, Feature Accuracy and Resolution in Projected Images via Exposure Levels in Solid Imaging”. 3D Systems, Inc. European Patent Applied – EP1894704, 2007, (In pending).
- Tom Kerekes, Jouni Partanen, **Yong Chen**, Charles Hull. “Improved Wall Smoothness, Feature Accuracy and Resolution in Projected Images via Exposure Levels in Solid Imaging”. 3D Systems, Inc. USP Applied – US20080054531, July 2006, (In pending).
- **Yong Chen** and Rajeev Kulkarni. “Support Volume Calculation for a CAD Model”. 3D Systems, Inc. USP patent No. 6,907,307.

PROVISIONAL APPLICATIONS:

- **Yong Chen**, Chi Zhou, “Additive Manufacturing without Layers: A New Solid Freeform Fabrication Process based on CNC Accumulation.” 61/521,579, August, 2011.
- **Yong Chen**, Jinho Jung, “Touch-RE: A Touch-based Method for Model Acquiring of Physical Objects.” 61/521,574, August, 2011.

TECHNOLOGY DISCLOSURES:

- **Yong Chen**, Yayue Pan, Chi Zhou, “A Fast Mask Projection Stereolithography Process for Building Digital Models in Minutes.” USC, 12-283, November, 2011.
- **Yong Chen**, Yayue Pan, “Digital Mask Image Projection based Additive Manufacturing with Smooth Surfaces.” USC, 12-056, August, 2011.
- **Yong Chen**, Chi Zhou, “Digital Mask Image Projection based Additive Manufacturing for the Fabrication of Digital Materials.” USC, 12-055, August, 2011.
- **Yong Chen**, Jinho Jung, “Touch-RE: A Touch-based Model Acquiring Method for Personal Manufacturing.” USC, 11-026, July, 2010.
- **Yong Chen**, Chi Zhou. “Additive Manufacturing without Layers: A New Solid Freeform Fabrication Process based on CNC Accumulation.” USC, 11-020, July, 2010.
- **Yong Chen**, Chi Zhou. “Three-Dimensional Digital Halftoning for Layered Manufacturing based on Droplets”. USC, 09-210, May, 2009.
- **Yong Chen**, Chi Zhou. “Optimized Pixel Blending for Mask Image Projection”. USC, 08-230, March, 2008.
- David Rosen, **Yong Chen**. “Injection Mold Design Method and Systems for Multi-Piece Molds with Planar Parting Planes”. Georgia Tech Research Corporation, 03-2576, Feb. 2003.
- David Rosen, **Yong Chen**. “Injection Mold Design Method and System for 2-Piece and Multi-Piece Molds”. Georgia Tech Research Corporation, Nov. 2001.

INDUSTRIAL COMPANIES WORKED WITH:

- Current
 - Chemat Inc., Northridge, CA
 - EnvisionTec Inc., Ferndale, MI
- Previous
 - 3D Systems Inc., Rock Hill, SC
 - Solid Concepts Inc., Valencia, CA

SIGNIFICANT HARDWARE SYSTEMS DEVELOPED:

- 3D Direct Input CAD System, Univ. of Southern California, Supervisor, 2011.
- Micro-scale Mask Projection SLA System, Univ. of Southern California, Supervisor, 2011.

- Fast Direct Digital Manufacturing System, Univ. of Southern California, Supervisor, 2011.
- Multiple-material Direct Digital Manufacturing System, Univ. of Southern California, Supervisor, 2011.
- Touch-based Reverse Engineering System, Univ. of Southern California, Supervisor, 2010.
- Computer Numerical Controlled Accumulation Testbed, Univ. of Southern California, Supervisor, 2009~2010.
- Large-Area Mask Image Projection System for Plastic and Ceramic Parts, Univ. of Southern California, Supervisor, 2008~2009.

SIGNIFICANT SOFTWARE SYSTEMS DEVELOPED:

- Three-Dimensional Digital Halftoning System for Layer Manufacturing, Univ. of Southern California, Supervisor, 2009.
- Optimized Pixel Blending System for Mask Image Projection, Univ. of Southern California, Supervisor, 2008.
- Point-based STL Offsetting System, Univ. of Southern California, Major developer, 2008.
- V-Flash 3-D Modeler Process Planning Software, Alpha Version, 3D Systems Inc., Sole developer, 2006.
- 3D Lightyear for Stereolithography Apparatus (SLA), Version 1.4 & 1.5, 3D Systems Inc., Major developer, 2002 - 2005 (Note: Lightyear was used by all SLA users of 3D Systems Inc.).
- InVision 3-D Printer Software, Version 3.1-3.3, 3D Systems Inc., Major developer, 2004 (Note: InVision 3-D Printer Software was used by all InVision Printer users of 3D Systems Inc.).
- BuildSetup for Selective Laser Sintering (SLS), Version 3.3 & 3.4, 3D Systems Inc., Major developer, 2003 - 2004 (Note: BuildSetup was used by all SLS users of 3D Systems Inc.).
- Multi-Piece Injection Mold Design System for Rapid Tooling Testbed (RTTB-Mold), Georgia Institute of Technology, Sole developer, 1999-2001 (Note: RTTB was sponsored by NSF and RTTB-Mold has been used by three RP&M service bureaus).
- Graphics Intelligent Recognition System (GIRS), Huazhong University of Science and Technology, Major developer, 1995-96 (Note: GIRS was used in hundreds of factories in China and was conferred “*Scientific and Technical Progress Award – Third Prize*” by National Science and Technology Committee of China in Oct. 1996).
- CADTools (KT-CAD), Huazhong University of Science and Technology, Developer, 1993-94 (Note: KT-CAD was sold for more than 1500 sets till June 1996 and was awarded “*Excellent Software Production*” by China Software Industry Association in 1996).

PRESENTATIONS AND TALKS:

1. “Direct Digital Manufacturing of Structured Points with Complex Geometries.” International Solid Freeform Fabrication Symposium, Modeling I Session, Austin, Texas, August 9, 2011.

2. "Development of a Mask-Image-Projection based Additive Manufacturing Process for the Fabrication of Digital Materials." International Solid Freeform Fabrication Symposium, Process Development I (Plenary Session), Austin, Texas, August 8, 2011.
3. "High Frequency Ultrasound Transducer Fabrication based on additive Manufacturing of Piezo-Composites." International Solid Freeform Fabrication Symposium, Application I Session, Austin, Texas, August 8, 2011.
4. "Fabrication of Conformal Ultrasound Transducer Arrays and Horns Based on Multi-axis CNC Accumulation." ASME Manufacturing Science and Engineering Conference (MSEC) 2011, Corvallis, Oregon, June 16, 2011.
5. "Direct Digital Manufacturing and Its Future Applications." Xiangtan University, Hunan, China, December 15, 2010.
6. "Multi-Piece Mold Design Based on Linear Mixed-Integer Program Toward Guaranteed Optimality." International Conference on Manufacturing Automation (ICMA) 2010, Hong Kong, China, December 14, 2010.
7. "Manufacturability Analysis of Infeasible Features in Polygonal Models for Web-based Rapid Prototyping." International Conference on Manufacturing Automation (ICMA) 2010, Hong Kong, China, December 14, 2010.
8. "Contouring of Structured Points with Small Features." ASME Computer in Engineering Conference, Montreal, Canada, August 18, 2010.
9. "Five-Axis Manufacturing Simulation Based on Normal Arc Mapping, Continuous Offsetting and Discrete Computation." ASME Computer in Engineering Conference, Montreal, Canada, August 18, 2010.
10. "Additive Manufacturing based on Multiple Calibrated Projectors and Its Mask Image Planning." ASME Design Automation Conference, Montreal, Canada, August 17, 2010.
11. "Additive Manufacturing without Layers: A New Solid Freeform Fabrication Process Based on CNC Accumulation". SFF Symposium, Process I Session, Austin, Texas, August 9, 2010.
12. "Touch-RE: A Touch-based Model Acquiring Method for Personal Manufacturing". SFF Symposium, Modeling II Session, Austin, Texas, August 11, 2010.
13. "Beam Structure Optimization for Additive Manufacturing based on Principal Stress Lines". SFF Symposium, Design Session, Austin, Texas, August 11, 2010.
14. "Computer-aided Design and Manufacturing for Dental Applications." Glidewell Dental Laboratories, Irvine, California, June 30, 2010.
15. "Optimized Mask Image Projection for Solid Freeform Fabrication." ASME Design Automation Conference, San Diego, California, Sept. 1, 2009.

16. "Design of Flexible Skin for Target Displacements based on Meso-Structures." ASME Computers and Information in Engineering Conference, San Diego, California, Aug. 31, 2009.
17. "Adaptive Cells and Anisotropic Mapping for Designing Complex Structures". SFF Symposium, Modeling II Session, Austin, Texas, August 5, 2009.
18. "Calibrating Large-area Mask Projection Stereolithography for Its Accuracy and Resolution Improvements". SFF Symposium, Process Development II Session, Austin, Texas, August 4, 2009.
19. "A Contour-based Support Generation Method for Solid Freeform Fabrication of Complex Parts". SFF Symposium, Modeling I Session, Austin, Texas, August 3, 2009.
20. "3-Dimensional Digital Halftoning for Layered Manufacturing based on Droplets". SME North American Manufacturing Research Conference (NAMRC), Session B-3-1, Greenville, South Carolina, May 22, 2009.
21. "Complex Shape Design for Direct Digital Manufacturing". USC ISE Visiting Advisory Committee Meeting, Los Angeles, CA, April 2, 2009.
22. "Layer Depth-Normal Images for Complex Geometries – Part One: Accurate Modeling and Adaptive Sampling". ASME Computers and Information in Engineering Conference (CIE), Session 12-1, Brooklyn, New York, August 6, 2008.
23. "Computer-aided Product Design with Performance-tailored Mesostructures". International CAD Conference and Exhibition, Orlando, Florida, June 24, 2008.
24. "Robust and Accurate Boolean Operations on Polygonal Models". ASME Computers and Information in Engineering Conference (CIE), Las Vegas, Nevada, Sept. 5, 2007.
25. "Non-uniform Offsetting for Laser Path Planning of Solid Freeform Fabrication Machines". SFF Symposium, Modeling Session, Austin, Texas, August 8, 2007.
26. "3D Texture Mapping for Rapid Manufacturing". International CAD Conference and Exhibition, Honolulu, Hawaii, June 25, 2007.
27. Guest lecture, "3D Printing Processes". MIT - MAS 960 "*Special Topics: How to make something that makes (almost) anything*" by Prof. Neil Gershenfeld, April 2, 2007.
28. "A Mesh-based Geometric Modeling Method for General Structures". ASME Computers and Information in Engineering Conference (CIE), Session 4-2, Philadelphia, PA, Sept. 11, 2006.
29. "Filleting and Rounding Using A Point-Based Method". ASME Design Automation Conference (DAC), Long Beach, California, Sept. 26, 2005.
30. "A Reverse Glue Approach to Automated Construction of Multi-Piece Molds". ASME Computers and Information in Engineering Conference (CIE), Chicago, Illinois, Sept. 10, 2003.
31. "Computer-aided Product/Process Synthesis for Rapid Tooling". CFD Research Corporation, Huntsville, Alabama, March 12, 2001.
32. "Computer-aided Product/Process Synthesis for Rapid Tooling". Siemens Technology-to-Business (TTB) Center, Berkeley, California, Sept. 28, 2000.

MEDIA:

NAE News:

2009: News of National Academy of Engineering, Creative Young Engineers Selected to Participate in NAE's 2009 U.S. Frontiers of Engineering Symposium (<http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=06252009b>)

Manufacturing Engineering

2011: Issue October, Page 14, "SME Speaks – NAMRC 39 Successfully Integrates with Collocated Conferences" (http://www.nxtbook.com/nxtbooks/sme/ME_October_2011/index.php#/16)

University of Southern California

2009: News of Viterbi School of Engineering, Two from Viterbi School Named "Creative Young Engineers" (<http://viterbi.usc.edu/news/news/2009/two-from-viterbi.htm>)

2008: News of Viterbi School of Engineering, CAD Do! Factories of Tomorrow May Print Out, Instead of Put Together (<http://viterbi.usc.edu/news/news/2008/can-3d-printing.htm>)

2008: USC Chronicle, Vol. 28, No. 9, October 20, Model Paper.

2008: News of Viterbi School of Engineering, Assistant Professor Yong Chen Wins Best Paper Award (<http://viterbi.usc.edu/news/news/2008/assistant-prof-yong.htm>)

2007: USC Chronicle, Vol. 27, No. 8, October 15, Making His Mark Early.

2007: News of Viterbi School of Engineering, Yong Chen Wins Society of Manufacturing Engineering Award (<http://viterbi.usc.edu/news/news/2007/yong-chen-wins.htm>)

2007: News of Stevens Institute for Innovation, Yong Chen Wins Engineering Kudo (http://stevens.usc.edu/read_article.php?news_id=181)

TEACHING AND EDUCATION

TEACHING AND COURSE DEVELOPMENT:

University of Southern California

- ISE232L, *Manufacturing Processes* (undergraduate), 3 unit, Spring 2012.
- ISE650, *PhD Seminar in Industrial Engineering* (graduate), 1 unit, Spring 2012.
- ISE232L, *Manufacturing Processes* (undergraduate), 3 unit, Fall 2011.
- ISE790, *PhD Direct Research*, 3 unit, Fall 2011 (Yayue Pan).
- ISE790, *PhD Direct Research*, 3 unit, Fall 2011 (Kai Xu).
- ISE790, *PhD Direct Research*, 3 unit, Fall 2011 (Yongqiang Li).
- ISE599, *Point-Sampled Geometry for Product Design and Manufacturing* (graduate), 3 unit, Spring 2011 (new graduate-level course offering with Prof. Charlie Wang from CUHK). **Instr. Eval.:** 4.67/5.
- ISE232L, *Manufacturing Processes* (undergraduate), 3 unit, Spring 2011. **Instr. Eval.:** 3.50/5.
- ISE590, *M.S. Direct Research*, 1 unit, Spring 2011 (Malav Patwa).

- ISE232L, *Manufacturing Processes* (undergraduate), 3 unit, Fall 2010. **Instr. Eval.:** 3.30/5.
- ISE790, *PbD Direct Research*, 2 unit, Fall 2010 (Yayue Pan).
- ISE596, *M.S. Direct Research*, 1 unit, Fall 2010 (Pooja Chawla).
- ISE232L, *Manufacturing Processes* (undergraduate), 3 unit, Spring 2010, **Instr. Eval.:** 4.20/5.
- ISE590, *M.S. Direct Research*, 3 unit, Spring 2010 (Jinho Jung).
- ISE590, *M.S. Direct Research*, 1 unit, Spring 2010 (Jingyuan Lao).
- ISE232L, *Manufacturing Processes* (undergraduate), 3 unit, Fall 2009, **Instr. Eval.:** 2.78/5.
- ISE510, *Advanced Computational Design and Manufacturing* (graduate), 3 unit, Fall 2009 (new graduate-level course offering), **Instr. Eval.:** 4.80/5.
- ISE590, *M.S. Direct Research*, 3 unit, Fall 2009 (Jinho Jung).
- ISE590, *M.S. Direct Research*, 1 unit, Fall 2009 (Jingyuan Lao).
- ISE511, *Computer-aided Manufacturing* (graduate), 3 unit, Spring 2009, **Instr. Eval.:** 4.46/5.
- ISE232L, *Manufacturing Processes* (undergraduate), 3 unit, Fall 2008, **Instr. Eval.:** 4.10/5.
- ISE790, *PbD Direct Research*, 3 unit, Fall 2008 (Chi Zhou).
- ENGR150L, *From Humans to Robots* (undergraduate), 3 unit, Fall 2008 (guest lecture).
- ISE232L, *Manufacturing Processes* (undergraduate), 3 unit, Fall 2007, **Instr. Eval.:** 3.52/5.
- ISE790, *PbD Direct Research*, 1 unit, Summer 2007 (Shanglong Wang).
- ISE650, *PbD Seminar in Industrial Engineering* (graduate), 1 unit, Spring 2007.
- ISE650, *PbD Seminar in Industrial Engineering* (graduate), 1 unit, Fall 2007, **Instr. Eval.:** 4.33/5.
- ENGR499, *From Humans to Robots* (undergraduate), 3 unit, Fall 2007 (guest lecture).
- ISE232L, *Manufacturing Processes* (undergraduate), 3 unit, Fall 2006, **Instr. Eval.:** 4.00/5.
- ISE590, *M.S. Direct Research*, 3 unit, Fall 2006 (Kasidit Subsomboon).
- ISE599, *Geometric Modeling and Computation for Digital Fabrication* (graduate), 3 unit, Spring 2006 (*developed a graduate-level course offering*), **Instr. Eval.:** 4.50/5.

SPONSORED RESEARCH ON ENGINEERING EDUCATION:

- **USC Epstein Institute**, “Developing Product Dissection Projects for Undergraduate Education of Manufacturing Processes”, 05/2011-08/2011, \$2,000 (no overhead). (**Principal Investigator**).

ENGINEERING EDUCATION WORKSHOP:

Invited Participant, NSF-Funded Manufacturing Integrated Learning Lab (MILL) Program for Faculty Development Workshop, Detroit, Michigan, Nov. 4-5, 2010.

RESEARCH SUPERVISION:

In Progress:

PhD students:

Yongqiang Li: Topology Optimization and Computation, Screening in Fall 2009.

Yayue Pan: Process Development and Optimization.

Kai Xu: Additive Manufacturing Online Control.

Xuan Song: Design for Additive Manufacturing.

Dongping Deng: Process and Product Development.

MS students:

Alex Yang: Process Development and Optimization.

Malav Patwa: Multi-piece urethane molding.

BS students:

Alex Amato: Human organ design strategy.

Michael Hintlian: CAD/CAM demonstration system.

Visiting Scholars:

Xuejin Zhao (from Shandong University, China): December 2010 – December 2011.

Completed:

PhD students:

Chi Zhou: Optimized Mask Image Projection for Large-area based Additive Manufacturing Process, Graduated in Fall 2011 (currently working for EnvisionTec Inc.).

MS students:

Jinho Jung: Investigation on Touching-based CAD System, Graduated in Summer 2010 (currently working for Korean Army).

Jingyuan Lao: Developing low cost SFF Processes, Graduated in Spring 2010 (currently working for Zap Manufacturing Inc.).

Varun Mittal: Developing low cost SFF Processes, Graduated in Spring 2010 (currently working for Walt Disney Inc.).

Shanglong Wang: Complex Truss Structure Analysis and Design, Graduated in Fall 2008 (currently working for GE Inc.).

Nanda Surendran: Reverse Engineering of 3D CAD Models, Graduated in Fall 2008.

Undergraduate summer intern:

Pu Huang (from Chinese University of Hong Kong): Computation Techniques for Layer Manufacturing Processes, Finished in Summer 2011.

Eun Cheol Yu (from Korean Aerospace University): A Study of Low-cost Rapid Tooling Processes, Finished in Summer 2010.

Brian Lam (from Illinois Institute of Technology): Curing Properties of UV LEDs, Finished in Summer 2008.

Visiting Scholars:

Charlie Wang (from Chinese University of Hong Kong): December 2010 – August 2011.

Jouni Partanen (from Aalto University, Finland): June 2011 – July 2011.

Weiqing Guo (from Zhejiang University of Technology, China): March 2010 – April 2011.

Shoudong Ni (from Nanjing University of Technology, China): February 2007 – June 2007.

BEST STUDENT PAPERS/POSTERS AND FINALISTS:

- 2009: **Finalist for Best Student Poster**, ASME 29th Computers and Information in Engineering Conference, San Diego, California, August, 2009. This poster is entitled “Optimized Mask Image Projection for Additive Manufacturing Process” by Chi Zhou, PhD student.

KEY AWARDS FOR PHD STUDENTS AT USC:

- 2009: **Chi Zhou**, Award for Outstanding Teaching Assistant of the Year, Industrial and Systems Engineering Department.

DISSERTATION COMMITTEE:

Dissertation Defense

- Hojong Choi, Ph.D. Dissertation: *Development of Front-End Circuits for High Frequency Ultrasonic System*, EE, USC, November 2011.
- Chi Zhou, Ph.D. Dissertation: *Optimized Mask Image Projection for Large-Area based Additive Manufacturing Process*, ISE, USC, August 2011.
- Hamid R. Chabok, Ph.D. Dissertation: *Development of High Frequency 1-3 Composite Annular Array Ultrasound Transducers*, ISE, USC, March 2011.
- Majid Yahyaei, Ph.D. Dissertation: *Modeling Enterprise Operations and Organizations for Productivity Improvement*, AME, USC, Dec. 2009.
- Dawei Wu, Ph.D. Dissertation: *Development of High-Frequency (~100MHZ) PZT Thick-Film Ultrasound Transducers and Arrays*, BME, USC, July 2009.
- Khashayar Behdinin, Ph.D. Dissertation: *Methodology for Design of a Vibration Operated Valve for Abrasive Viscous Fluids*, ISE, USC, March 2009.
- Jing Zhang, Ph.D. Dissertation: *Contour Crafting Process Planning and Optimization*, ISE, USC, Feb. 2009.
- George E. Zouein, Ph.D. Dissertation: *A Biologically Inspired DNA-based Cellular Approach to Developing Complex Adaptive Systems*, AME, USC, Jan. 2009.

Proposal Defense

- Hojong Choi, Ph.D. Dissertation: *Development of Front-End Integrated Preamplifier for High Frequency Ultrasonic Transducer*, EE, USC, October 2010.
- Hamid R. Chabok, Ph.D. Dissertation: *Development of High Frequency 1-3 Composite Annular Array Ultrasound Transducers*, ISE, USC, May 2010.
- Chi Zhou, Ph.D. Dissertation: *Optimized Mask Image Projection for Large-Area based Additive Manufacturing Process*, ISE, USC, September 2010.
- Tony Di Carlo, Ph.D. Dissertation: *Modeling and Optimization of a Cementitious Material System for Automated Construction of Sustainable and Affordable Homes*, ISE, USC, August 2010.
- Mahdi Yoozbashizadeh, Ph.D. Dissertation: *Metallic Parts Fabrication with the Selective Inhibition Sintering (SIS) based on Microscopic Inhibition*, ISE, USC, January 2010.
- Hamid R. Chabok, Ph.D. Dissertation: *Development of High Frequency 1-3 Composite Annular Array Ultrasound Transducers*, ISE, USC, November 2009.
- Kathryn R. Rieger, Ph.D. Dissertation: *A Performance-based Bayesian Model to Identify Use-Error Risk Levels in Medical Devices*, ISE, USC, May 2009.
- Majid Yahyaei, Ph.D. Dissertation: *Process Management Technology (PMT): Modeling Enterprise Operations and Organizations*, AME, USC, Dec. 2008.
- Khashayar Behdinin, Ph.D. Dissertation: *Analysis of a Piezoelectric Operated Valve for Abrasive Viscous Fluids*, ISE, USC, Jan. 2008.
- Jing Zhang, Ph.D. Dissertation: *Contour Crafting Process Planning and Optimization*, ISE, USC, Dec. 2007.
- Haifeng Ji, Ph.D. Dissertation: *Extraction of Preferences from Early Stage Engineering Design Team Discussion*, ISE, USC, May, 2007.
- Gregory Placencia, Ph.D. Dissertation: *A Finite Element Model of Haptic Tactile Response*, ISE, USC, Dec. 2006.

MS THESIS COMMITTEE:

Kabir Kanodia, M.S. Thesis: *Real-time Flow Control of Viscous Fluids Using 3D Image Processing*, ISE, USC, Aug. 2008.

SERVICE

PROFESSIONAL AFFILIATIONS:

Member of American Society of Engineering Education (ASEE), since 2011

Member of American Society of Mechanical Engineers (ASME), since 1998

Member of Association for Computing Machinery (ACM)-SIGGRAPH, since 2001

Senior member of Society of Manufacturing Engineers (SME), since 2006

Member of Institute of Industrial Engineers (IIE), since 2006

Member of Solid Modeling Association (SMA), since 2006

Member of Chinese American Faculty Association (CAFA)

PROFESSIONAL ACTIVITIES:

ASME CIE Division

Senate, Computer-aided Product and Process Development (CAPPD) Committee, 2010-current.

Chair, Computer-aided Product and Process Development (CAPPD) Committee, 2008.

Vice Chair, Computer-aided Product Development (CAPD) Committee, 2007.

Secretary, Computer-aided Product Development (CAPD) Committee, 2006.

SME/NAMRI Scientific Committee

Member, 2012-2014.

NSF Roadmap for Additive Manufacturing Workshop

Invited participant, NSF, CMMI Division, March, 2009.

JOURNAL SERVICE:

Editorial Board Member, International Journal of Precision Engineering and Manufacturing.

CONFERENCE SESSION ORGANIZED:

Session Co-Organizer, Session Computer-aided Design and Manufacturing, 2010 International Symposium on Flexible Automation, St. Louis, MO, June 19-20, 2012.

Member of Program Committee, 2010 International Symposium on Flexible Automation, St. Louis, MO, June 19-20, 2012.

Session Chair, Session 1-6: Additive and Polymer manufacturing, 39th North American Manufacturing Research Conference (NAMRC), Corvallis, Oregon, June 15, 2011.

Review Co-Coordinator and Special Session Organizer, Geometry in Design, 37th ASME Computers and Information in Engineering Conference, Washington DC, USA (2011).

Review Co-Coordinator, Direct Digital Manufacturing, 37th ASME Design Automation Conference, Washington DC, USA (2011).

Conference Program Chairman, International Conference on Manufacturing Automation (ICMA) 2010, Hong Kong, China (2010).

Session Chair, Session 4B Computer-aided Manufacturing I, International Conference on Manufacturing Automation (ICMA) 2010, Hong Kong, China (2010).

Session Chair, Session 5B Computer-aided Manufacturing II, International Conference on Manufacturing Automation (ICMA) 2010, Hong Kong, China (2010).

Symposium Organizer, Sampling based Geometric Modeling and Computing (CIE-14), 30th ASME

- Computers and Information in Engineering Conference, Montreal, Quebec, Canada (2010).
- Symposium Co-Organizer**, Computer-aided Product and Process Development Symposium, 30th ASME Computers and Information in Engineering Conference, Montreal, Quebec, Canada (2010).
- Review Coordinator and Special Session Organizer**, Direct Digital Manufacturing (Topic), 36th ASME Design Automation Conference, Montreal, Quebec, Canada (2010).
- Session Chair**, Session CIE-9-3 *Geometric Modeling, Analysis and Optimization*, 30th ASME Computers and Information in Engineering Conference, Montreal, Quebec, Canada (2010).
- Session Chair**, Session CIE-14-1 *Sampling based Geometric Modeling and Computing*, 30th ASME Computers and Information in Engineering Conference, Montreal, Quebec, Canada (2010).
- Session Co-Chair**, Session DAC-15-1 *Direct Digital Manufacturing*, 36th ASME Design Automation Conference, Montreal, Quebec, Canada (2010).
- Symposium Co-Organizer**, Computer-aided Product and Process Development Symposium, 29th ASME Computers and Information in Engineering Conference, San Diego, CA (2009).
- Review Co-Coordinator**, Direct Digital Manufacturing (Topic), 35th ASME Design Automation Conference, San Diego, CA (2009).
- Session Chair**, Session CIE-10-3 *Computers and Knowledge Management*, 29th ASME Computers and Information in Engineering Conference, San Diego, CA (2009).
- Session Co-Chair**, Session DAC-18-1 *Direct Digital Manufacturing*, 35th ASME Design Automation Conference, San Diego, CA (2009).
- Symposium Co-Organizer**, Computer-aided Product Development Symposium, 28th ASME Computers and Information in Engineering Conference, Brooklyn, NY (2008).
- Review Co-Coordinator**, Direct Digital Manufacturing (Topic), 34th ASME Design Automation Conference, Brooklyn, NY (2008).
- Session Chair**, Session CIE-3-2 *Features and Solid Modeling*, 28th ASME Computers and Information in Engineering Conference, Brooklyn, NY (2008).
- Session Co-Chair**, Session DAC-13-1 *Direct Digital Manufacturing*, 34th ASME Design Automation Conference, Brooklyn, NY (2008).
- Session Co-Chair**, Session CIE-12-1 *Optimal Product Design*, 28th ASME Computers and Information in Engineering Conference, Brooklyn, NY (2008).
- Symposium Co-Organizer**, Computer-aided Product Development Symposium, 27th ASME Computers and Information in Engineering Conference, Las Vegas, Nevada (2007).
- Session Co-Chair**, Session CIE-3-5 *Object Visualization and Manipulation*, 27th ASME Computers and Information in Engineering Conference, Las Vegas, Nevada (2007).
- Session Co-Chair**, Session CIE-4-2 *Geometric Analysis in Simulation-based Design*, 26th ASME Computers and Information in Engineering Conference, Philadelphia, PA (2006).
- Session Co-chair**, Session CIE-3-10 *Solid Modeling Applications*, 25th ASME Computers and Information in Engineering Conference, Long Beach, California (2005).

GRANT PROPOSAL REVIEW:

Panel Reviewer, Zumberge Faculty Research & Innovation Fund, 2011.

Panel Reviewer, National Science Foundation (NSF), CMMI Division, 2010.

Panel Reviewer, Zumberge Faculty Research & Innovation Fund, 2010.

Panel Reviewer, National Science Foundation (NSF), CMMI Division, 2009.

Panel Reviewer, Zumberge Faculty Research & Innovation Fund, 2009.

Panel Reviewer, National Science Foundation (NSF), CMMI Division, 2008.

Panel Reviewer, National Science Foundation (NSF), CMMI Division, 2007.

PAPER REVIEW:

Journal and Conference Proceedings Reviewer

ASME - Journal of Computing and Information Science in Engineering

ASME - Journal of Mechanical Design

ASME - Journal of Manufacturing Science and Engineering

SME - Journal of Manufacturing Systems

SME - Journal of Manufacturing Processes

IIE Transactions

IEEE – Transactions on Industrial Informatics

IEEE – Transactions on Automation Science and Engineering

Computer-aided Design

Computer-aided Design and Application

Computer in Industry

Rapid Prototyping Journal

Virtual and Physical Prototyping

International Journal of Computer Integrated Manufacturing

International Journal of Computer Aided Engineering and Technology

Conference Proceedings Reviewer

CAD Conference and Exhibition, 2009, 2010, 2011

Solid Freeform Fabrication Symposium, 2009, 2010, 2011

ASME - DETC Conferences, 1999 - 2011

ASME - IMECE Conference, 2002, 2007

Euro-Graphics, 2007

International Symposia on Tools and Methods of Competitive Engineering, 2002 – 2006

CONFERENCE POSTER REVIEW:

Graduate Student Poster Competition Reviewer, 30th ASME Computers and Information in Engineering Conference, Montreal, Quebec, Canada (2010).

Graduate Student Poster Competition Reviewer, 29th ASME Computers and Information in Engineering Conference, San Diego, California (2009).

BOOK REVIEW:

1 book by Elsevier publisher, 2009

INSTITUTIONAL SERVICES:

University of Southern California – Department of Industrial & Systems Engineering:

- Chair – Research Space Review Committee, 2011.
- Member – Ph.D. Admission Committee, 2011.
- Chair – Course Review Committee (ISE435), 2011.
- Member – Course Review Committee (ISE482), 2010.
- Member – Ph.D. Admission Committee, 2009.
- Chair – Course Review Committee (ISE410), 2009.
- Member – Faculty Merit Evaluation Committee, 2009.
- Chair – Ph.D. Admission Committee, 2008.
- Member – Ph.D. Admission Committee, 2006-07.
- Member – Undergraduate Curriculum Development Committee, 2006-07.
- Member – Ph.D. Program Development Committee, 2006-08.
- Doctoral Screening Examiner, 2007-09.
- USC Commencement Marshal, 2007.

University of Southern California – Viterbi School of Engineering:

- Member – VSoE Space Metrics Committee, 2010.
- Academic advisor – Undergraduate Fab Lab, USC, 2007 ~ current.

OTHER SERVICES:

- Mentor – WESTEC Guided Tours for High School Students, SME, March 24, 2010.
- Advisor – USC Chinese Engineering & Science Student Association, 2008~Present.
- Mentor - Bright Minds Workgroup for High School Students, SME, 2007.
- Panelist - Global Access Program Final Presentation, Anderson School, UCLA, 2006.