

CURRICULUM VITAE

CHI ZHOU, PH.D.

Contact Information

Industrial and Systems Engineering
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(Updated: September 2017)

Education

- **Ph.D. in** Industrial Engineering, University of Southern California, Los Angeles, CA 12/2011
Dissertation: Optimized Mask Image Projection for Large-Area based Additive Manufacturing Process (2012 *Best Dissertation Award* in ISE Department at USC)
Dissertation Advisor: Dr. Yong Chen
- **M.S. in** Computer Science, University of Southern California, Los Angeles, CA 12/2010
- **M.S. in** Industrial Engineering, Huazhong University of Science and Technology, China 06/2007
Thesis: Research on Particle Swarm Optimization and Its Applications
- **B.S. in** Mechanical Engineering, Huazhong University of Science and Technology, China 06/2004
- **B.S. in** Industrial Engineering, Huazhong University of Science and Technology, China 06/2004
(Dual degrees)

Professional Experience

- 07/2013 – present: **Assistant Professor**, Department of Industrial and Systems Engineering, University at Buffalo, Buffalo, NY.
- 09/2011 – 06/2013: **Senior Software Engineer**, EnvisionTec Inc, Los Angeles, CA.
- 08/2007 – 08/2011: **Doctoral Research Assistant**, University of Southern California, Los Angeles, CA.
- 08/2010 – 05/2011: **Software Engineer**, Siemens PLM Inc, Irvine, CA.
- 09/2004 – 05/2007: **Graduate Research Assistant**, Huazhong University of Science and Technology, Wuhan, Hubei, China.

Awards and Honors

- 2017: **Young Investigator Award**, University at Buffalo, 2017.
- 2017: Co-supervised a group of graduate students to participate the International Hardware Design Contest sponsored by ACM SIGDA and Lattice titled “Towards FPGA-based Collision Detection Accelerator for 3D Printing Safety”, and won the **Second Prize**.
- 2017: Our 3D printed graphene aerogels were presented at Centre Pompidou, Paris: spotlight on 3D printed art in new 'Printing the World' exhibition, and received the **Guinness World Records**.
- 2017: the 3D printed aerogels were invited to participate in the Imprimer le Monde exhibition in Paris, which welcomed around 92,000 visitors in 2.5 months (~1,200/day).
- 2017: Our research work on “Continuous 3D Printing Acceleration” receives the **Best Paper Nomination** from ACM/IEEE ASPDAC'17.
- 2016: **Outstanding Paper Award**, SME 44th *North American Manufacturing Research Conference*

(NAMRC), Blacksburg, Virginia, June, 2016.

- 2016: Research work on "Smartphone hacks 3D Printers" has been widely publicized by media outlets.
- 2016: Advised a group of graduate student to participate *Singapore International 3D Printing Competitions* and won the **Top Prize**. (Over 100 teams participated from 9 countries, and we are the only Winner for Shoe - Open Category).
- 2016: **Most Accessed Paper** in the *Small* journal since 03/2016, its Am score is 175 and in the top 5% of all research outputs scored by Altmetric (the average score of *Science* journal is around 18).
- 2014: **Outstanding Young Manufacturing Engineer Award** from the *Society of Manufacturing Engineers* (SME).
- 2013: **Outstanding Paper Award**, SME 41th *North American Manufacturing Research Conference* (NAMRC), Madison, Wisconsin, June, 2013.
- 2012: **Outstanding Paper Award - Winner**, *Rapid Prototyping Journal*, Emerald Group Publishing Limited, for paper "A Layerless Additive Manufacturing Process based on CNC Accumulation." Vol. 17, No. 3, pp. 218-227, 2011.
- 2012: **Best Dissertation Award**, Epstein Department of Industrial and Systems Engineering, University of Southern California.
- 2012: **Best Paper Award (3rd Place)**, ASME *Manufacturing Science and Engineering Conference* (MSEC2012), Notre Dame, IL, June, 2012.
- 2011: **Outstanding Paper Award (1st Place)**, SME 39th *North American Manufacturing Research Conference* (NAMRC), Corvallis, Oregon, June, 2011.
- 2011: **Academic Achievement Award**, Office of International Services, University of Southern California.
- 2010: **Symposium Outstanding Paper**, 21st *International Solid Freeform Fabrication Symposium* (SFF), Austin, Texas, August, 2010.
- 2009: **Outstanding Teaching Assistant Award**, Epstein Department of Industrial and Systems Engineering, University of Southern California.
- 2009: **Finalist for Best Student Poster**, ASME 29th *Computers and Information in Engineering Conference*, San Diego, California, August, 2009.
- 2008: **Outstanding Master's Degree Thesis Award**, Wuhan, Hubei Province, China.
- 2006: **Overseas Fellowship (\$50,000)**, Chiang Chen Industrial Charity Foundation, Hongkong, China.
- 2005: **AAAI Fellowship (\$1,300)**, Doctoral Consortium, *International Conference on Automated Planning & Scheduling*, Monterey, California.

Publications

Refereed Journal Articles Published:

(Supervised students are marked as *, primary author or corresponding authors are marked as ✉)

1. Feng Zhang*, Min Wei, Vilayanur V Viswanathan, Benjamin Swart, Yuyan Shao, Gang Wu, and **Chi Zhou**✉, "3D Printing Technologies for Electrochemical Energy Storage." *Nano Energy* 2017, doi.org/10.1016/j.nanoen.2017.08.037.
2. Dengxin Ji, Haomin Song, Borui Chen, Feng Zhang*, Alec Cheney, Nan Zhang, Xie Zeng, **Chi Zhou**, Qiaoqiang Gan, Alexander Cartwright, "Frozen "tofu" effect: engineered pores of hydrophilic nanoporous materials," *ACS Omega*, 2(8), 2017, 4838-4844.
3. Pengli Yan, Emery Brown, Qing Su, Jun Li, Jian Wang, Changxue Xu, **Chi Zhou**, Dong Lin, "3D Printing Hierarchical Silver Nanowire Aerogel with Highly Compressive Resilience and Tensile Elongation through Tunable Poisson's Ratio", *Small*, 2017, 1701756.

4. Hongzhi Guo, Zhi Sun, **Chi Zhou**. "Practical Design and Implementation of Metamaterial-Enhanced Magnetic Induction Communication." *IEEE Access* (2017).
5. Guanglei Zhao*, **Chi Zhou**✉, Dong Lin, "Tool Path Planning for Directional Freezing Based 3d Nano Printing Process," *ASME Journal of Micro-and Nano-Manufacturing*. (Accepted).
6. Jida Huang*, Tsz-Ho Kwok and **Chi Zhou**, "V4PCS: Volumetric 4PCS Algorithm for Global Registration," *ASME Journal of Mechanical Design*. (Accepted)
7. Patatri Chakraborty, Naga B. Gundrati, **Chi Zhou** and D.D.L. Chung, "Effect of stress on the capacitance and electric permittivity of three-dimensionally printed polymer, with relevance to capacitance-based stress monitoring", *Sensors and Actuators A*, 263C, 380-385 (2017).
8. Pedram Parandoush, Levi Tucker, **Chi Zhou**, Dong Lin, "Laser Assisted Additive Manufacturing of Continuous Fiber Reinforced Thermoplastic Composites." *Materials and Design*. (2017): 10.1016/j.matdes.2017.06.013.
9. Wei, Min, Feng Zhang*, Wei Wang, Paschalis Alexandridis, **Chi Zhou**✉, and Gang Wu, "3D direct writing fabrication of electrodes for electrochemical storage devices." *Journal of Power Sources*. (2017): 354, 134-147.
10. Hang Ye*, **Chi Zhou**✉, Wenyao Xu, "Image based Slicing and Tool Path Planning for Hybrid Stereolithography Additive Manufacturing," *ASME Journal of Manufacturing Science and Engineering*. (2017): 10.1115/1.4035795.
11. Guanglei Zhao*, **Chi Zhou**✉, Dong Lin, "Thermal Analysis on Directional Freezing of Nano Aqueous Suspensions in Graphene Aerogel 3D Printing Process," *ASME Journal of Micro-and Nano-Manufacturing*. (2017): 10.1115/1.4035392, Vol. 5, No. 1.
12. Feng Zhang*, Feng Yang*, **Chi Zhou**✉, Dong Lin, "Parameter Study on 3D Printing Graphene Oxide based on Directional Freezing," *ASME Journal of Manufacturing Science and Engineering*. (2017): 139(3), 10.1115/1.4034669.
13. Hang Ye*, Abhishek Venketeswaran, Sonjoy Das, **Chi Zhou**, "Investigation of separation force for bottom-up stereolithography process from mechanics perspective," *Rapid Prototyping Journal*, (2017): Vol. 23 Issue: 4, doi: 10.1108/RPJ-06-2016-0091.
14. Abhishek Patil, Yayue Pan, **Chi Zhou**, "A Novel Projection based Electro-Stereolithography (PES) Process for Production of 3D Polymer-particle Composite Objects," *Rapid Prototyping Journal*, (2017) Vol. 23, No. 2.
15. Tsz-Ho Kwok, Hang Ye*, Yong Chen, **Chi Zhou**✉, Wenyao Xu, "Mass Customization: Reuse of Digital Slicing for Additive Manufacturing," *ASME Journal of Computing and Information Science in Engineering*. 16. 3 (2017) : 17(2), 021009.
16. Huachao Mao, **Chi Zhou**, Yong Chen, "LISA: Linear Immersed Sweeping Accumulation," *SME Journal of Manufacturing Processes*. (2016): 10.1016/j.jmapro.2016.06.021.
17. Panagiotis Vogiatzis, Shikui Chen, **Chi Zhou**, "An Open Source Framework for Integrated Additive Manufacturing and Level-set based Topology Optimization," *ASME Journal of Computing and Information Science in Engineering*.
18. Arzumand, Ayesha, Shruti Srinivas, Yuan Yuan, **Chi Zhou**, and Debanjan Sarkar, "Mechano - Morphological Characterization of Polyethylene - Glycol Based Polyurethane Microgel," *Macromolecular Materials and Engineering*, 301.10 (2016): 1158-1171.
19. Qiangqiang Zhang, Feng Zhang*, Sai Pradeep Medarametla, Hui Li, **Chi Zhou**✉ and Dong Lin✉, "Three-dimensional Printing of Graphene Aerogel," *Small*, DOI: 10.1002/smll.201503524, Vol. 12, No. 13, pp. 1702-1708, 2016.
20. Lin, Dong, Feng Zhang*, Chao Wang, Yiqian Wang, **Chi Zhou**✉, and Gary J. Cheng✉, "3D

stereolithography printing of graphene oxide reinforced complex architectures,” *Nanotechnology*, Vol. 26, No. 43 (2015): 434003-434011.

21. Farzad Liravi*, Sonjoy Das, **Chi Zhou**✉, “Separation Force Analysis and Prediction Based on Cohesive Element Model for Constrained-Surface Stereolithography Processes,” *Computer-Aided Design*, Vol. 69, pp. 134-142, 2015.
22. **Chi Zhou**✉, Hang Ye*, Feng Zhang*, “A Novel Low-Cost Stereolithography Process Based on Vector Scanning and Mask Projection for High-Accuracy, High-Speed, High-Throughput, and Large-Area Fabrication,” *ASME Journal of Computing and Information Science in Engineering* 15.1 (2015): 011003.
23. **Chi Zhou**✉, “A Direct Tool Path Planning Algorithm for Line Scanning Based Stereolithography,” *ASME Journal of Manufacturing Science and Engineering* 136.6 (2014): 061023.
24. Yayue Pan, **Chi Zhou**, Yong Chen, Jouni Partanen, “Multi-tool and Multi-axis CNC Accumulation for Fabricating Conformal Features on Curved Surfaces,” *ASME Journal of Manufacturing Science and Engineering*, Vol. 136, No. 3, pp. 031007, 2014. .
25. Xuejin Zhao, Yayue Pan, **Chi Zhou**, Yong Chen, Charlie C. L. Wang, “An Integrated CNC Accumulation System for Automatic Building-around-inserts,” *SME Journal of Manufacturing Process*, Vol. 15, No.4, pp. 432-443, 2013. .
26. **Chi Zhou**, Yong Chen, Zhigang Yang, Behrokh Khoshnevis, “Development of a Multi-material Mask-Image-Projection-based Stereolithography for the Fabrication of Digital Materials,” *Rapid Prototyping Journal*, Vol. 19, No.3, pp. 153-165, 2013.
27. 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*, Vol.134, No.5, pp. 051011, 2012.
28. Yayue Pan, Xuejin Zhao, **Chi Zhou**, Yong Chen, “Smooth Surface Fabrication in the Mask Projection based Stereolithography,” *SME Journal of Manufacturing Processes*, Vol. 14, pp. 460-470, 2012.
29. **Chi Zhou**, Yong Chen, “Additive Manufacturing based on Optimized Mask Video Projection for Improved Accuracy and Resolution,” *SME Journal of Manufacturing Processes*, Vol. 14, No. 2, pp. 107-118, 2012.
30. 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. (**Outstanding Paper Award** of the year)
31. **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.
32. **Chi Zhou**, Yong Chen, “Three-Dimensional Digital Halftoning for Layered Manufacturing based on Droplets,” *Transactions of North American Manufacturing Research Institute of SME*, Vol. 37, pp. 175-182, 2009.

Refereed Journal Articles Published (In China):

1. **Chi Zhou**, Liang Gao, Hai-Bing Gao, and Kun Zan, “Particle Swarm Optimization for Simultaneous Optimization of Design and Machining Tolerances,” *Lecture Notes in Computer Science*, 4247, pp.873-880, 2006.
2. **Chi Zhou**, Liang Gao, Hai-bing Gao, “Particle Swarm Optimization Based Algorithm for Permutation Flow Shop Scheduling,” *Acta Electronica Sinica*. 2006, 34(11). (In Chinese)
3. **Chi Zhou**, Liang Gao, Hai-bing Gao, “Particle Swarm Optimization based Algorithm for Constrained

- Layout Optimization,” *Control and Decision*. 2005, 20(1): 36-40. (In Chinese)
4. **Chi Zhou**, Hai-bing Gao, Liang Gao, “Particle Swarm Optimization (PSO) Algorithm,” *Application Research of Computers*. 2003, 20(12): 7-11. (In Chinese)
 5. Jing Yuan, Fengguang Luo, Liang Gao, **Chi Zhou**, Wanjun Chen, Bin Zhang, “Determination of ion exchange parameters by a neural network based on particle swarm optimization,” *Optical Engineering*, 2008, 47(2): Art.
 6. Yazhou Chen, Liang Gao, **Chi Zhou**, “Research on Multidisciplinary Design Optimization Based on Particle Swarm Optimization and Collaborative Optimization,” *Mechanical Science and Technology*. 2007, 26(4): 424-427. (In Chinese)
 7. Liang Gao, **Chi Zhou**, Hai-Bing Gao and Yong-Ren Shi, “Combining Particle Swarm Optimization and Neural Network for Diagnosis of Unexplained Syncope,” *Lecture Notes in Computer Science*, 4115, pp.174-181, 2006.
 8. Chuanyong Peng, Liang Gao, Xinyu Shao, **Chi Zhou**, “General particle swarm optimization algorithm for job-shop scheduling problem,” *Computer Integrated Manufacturing Systems*. 2006, 12(6): 911-917. (In Chinese)
 9. Liang Gao, Lin Yang, **Chi Zhou**, Yingbing Hu, “Category forecast application of neural network algorithm trained by particle swarm optimization,” *Computer Integrated Manufacturing Systems*. 2006, 12(3): 465-469. (In Chinese)
 10. Hai-bing Gao, **Chi Zhou**, Liang Gao, “General Particle Swarm Optimization Model,” *Chinese Journal of Computers*. 2005, 28(12): 1980-1987. (In Chinese)
 11. Liang Gao, Hai-bing Gao, **Chi Zhou**, “PSO based Scheduling Algorithm for Open Shop Scheduling Problem,” *Chinese Journal of Mechanical Engineering*. 2006, 47(2): 129-134. (In Chinese)
 12. Liang Gao, Hai-bing Gao, **Chi Zhou**, Dao-yuan Yu, “Acquisition of Pattern Classification Rule based on Particle Swarm Optimization,” *Journal of Huazhong University of Science and Technology*. 2004, 11(32): 24-26. (In Chinese)
 13. Hai-bing Gao, Liang Gao, **Chi Zhou**, Dao-yuan Yu, “Particle Swarm Optimization Based Algorithm for Neural Network Learning,” *Acta Electronica Sinica*. 2004, 32(9): 1572-1574. (In Chinese)

Conference Proceedings:

1. Jida Huang*, Tsz-Ho Kwok, **Chi Zhou**, “V4PCS: Volumetric 4PCS Algorithm for Global Registration,” *Proceedings of ASME Computers and Information in Engineering Conference, DETC2017*, Cleveland, Ohio, Aug. 6 ~ Aug. 9, 2017.
2. Yosep Oh, Sara Behdad, **Chi Zhou**, “Part Separation methods for Assembly based Design in Additive Manufacturing,” *Proceedings of ASME Computers and Information in Engineering Conference, DETC2017*, Cleveland, Ohio, Aug. 6 ~ Aug. 9, 2017.
3. Long Jiang, Hang Ye*, **Chi Zhou**✉, Shikui Chen, Wenyao Xu, “A Parametric Level Set Approach toward Rational Design & Efficient Prefabrication for Additive Manufacturing,” *ASME Manufacturing Science and Engineering Conference (MSEC)*, Los Angeles, CA, June 4 - June 8, 2017.
4. Guanglei Zhao*, **Chi Zhou**✉, Dong Lin, “Tool Path Planning for Directional Freezing Based 3D Nano Printing Process,” *ASME Manufacturing Science and Engineering Conference (MSEC)*, Los Angeles, CA, June 4 - June 8, 2017.
5. Tianjiao Wang*, Tsz-Ho Kwok, **Chi Zhou**, “In-situ Droplet Inspection and Control System for Liquid Metal Jet 3D Printing Process,” *SME North American Manufacturing Research Conference, NAMRC45*, Los Angeles, CA, June 4 - 8, 2017
6. Jerry Ajay, Chen Song, Aditya Singh Rathore, **Chi Zhou**, Wenyao Xu, “Instruction Level Power

- Analysis and Optimization of 3D Printers,” *The 22nd ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS 2017)*, Xi’an, China, April 8–12, 2017. (**Acceptance Rate: 17.4%**, 56 out of 321)
7. Aosen Wang, **Chi Zhou**, Zhanpeng Jin, Wenyao Xu, “Scalable and Efficient GPU-Enabled Slicing Acceleration for Continuous 3D Printing,” *The 22nd Asia and South Pacific Design Automation Conference (ASP-DAC 2017)*, Chiba/Tokyo, Japan, Jan.16-19, 2017. (**Best Paper Nomination**)
 8. Jerry Ajay, Aditya Singh Rathore, Chen Song, **Chi Zhou**, Wenyao Xu, “Don’t Forget Your Electricity Bills! An Empirical Study of Characterizing Energy Consumption of 3D Printers,” *ACM Asia-Pacific Workshop on Systems (APSys)*, Hong Kong, China, Aug 4-5, 2016.
 9. Chen Song, Feng Lin, Zongjie Ba, Kui Ren, **Chi Zhou**, Wenyao Xu, “My Smartphone Knows What You Print: Exploring Smartphone-based Side-channel Attacks Against 3D Printers,” *The 23rd ACM Conference on Computer and Communications Security (CCS 2016)*, Hofburg Palace, Vienna, Austria October 24-28, 2016. (**Acceptance Rate: 16.4%**, 137 out of 831.)
 10. Fan Yang, Feng Lin, **Chi Zhou**, Zhanpeng Jin, and Wenyao Xu, "PBench: A Benchmark Suite for Characterizing 3D Printing Prefabrication," *Workload Characterization (IISWC), IEEE International Symposium*, pp. 1-10. IEEE, RI, USA, 2016. (**Acceptance Rate: 30.4%**, 21 out of 69)
 11. Tsz-Ho Kwok, Hang Ye*, Yong Chen, **Chi Zhou** , Wenyao Xu, “Mass Customization: Reuse of Digital Slicing for Additive Manufacturing,” *Proceedings of ASME Computers and Information in Engineering Conference*, DETC2016, Charlotte, North Carolina, Aug. 21 ~ Aug. 24, 2016.
 12. Hang Ye*, **Chi Zhou** , Wenyao Xu, “Mass Customization: Reuse of Topology Information to Accelerate Slicing Process for Additive Manufacturing,” *Proceeding of Solid Freeform Fabrication Symposium*, Austin, Texas, August 8~10, 2016.
 13. Feng Zhang*, Qiangqiang Zhang, Weston Grove, Dong Lin and **Chi Zhou**, “3D-printing Graphene Oxidize Based on Directional Freezing,” *Proceeding of Solid Freeform Fabrication Symposium*, Austin, Texas, August 8~10, 2016.
 14. Hang Ye*, **Chi Zhou** , Wenyao Xu, “Image based Slicing and Tool Path Planning for Hybrid Stereolithography Additive Manufacturing,” *Proceedings of ASME Computers and Information in Engineering Conference*, DETC2016, Charlotte, North Carolina, Aug. 21 ~ Aug. 24, 2016.
 15. Jun Wang, Sonjoy Das, **Chi Zhou**, Rahul, Rai, “Data-driven Simulation for Fast Prediction of Pull-up Process in Bottom-up Stereo-lithography,” *Proceedings of ASME Computers and Information in Engineering Conference*, DETC2016, Charlotte, North Carolina, Aug. 21 ~ Aug. 24, 2016.
 16. Guanglei Zhao*, **Chi Zhou** , Dong Lin, “Thermal Analysis on Directional Freezing of Nano Aqueous Suspensions in Graphene Aerogel 3D Printing Process,” *ASME Manufacturing Science and Engineering Conference (MSEC)*, Blacksburg, Virginia, June 27 - July 1, 2016.
 17. Feng Zhang*, Feng Yang*, **Chi Zhou** , Dong Lin, “Parameter Study on 3D Printing Graphene Oxide based on Directional Freezing,” *ASME Manufacturing Science and Engineering Conference (MSEC)*, Blacksburg, Virginia, June 27 - July 1, 2016.
 18. Huachao Mao, **Chi Zhou** and Yong Chen, “LISA: Linear Immersed Sweeping Accumulation,” *SME North American Manufacturing Research Conference*, NAMRC44, Blacksburg, Virginia, June 27 - July 1, 2016. (**NAMRC Outstanding Paper Award**)
 19. Feng Zhang*, **Chi Zhou** , Sonjoy Das, “An Efficient Design Optimization Method for Functional Gradient Material Objects based on Finite Element Analysis,” *Proceedings of ASME Computers and Information in Engineering Conference*, DETC2015, Boston, Massachusetts, Aug. 2 ~ Aug. 5, 2015.
 20. Guanglei Zhao*, **Chi Zhou** , Sonjoy Das, “Solid Mechanics based Design and Optimization for Support Structure Generation in Additive Manufacturing,” *Proceedings of ASME Computers and*

Information in Engineering Conference, DETC2015, Boston, Massachusetts, Aug. 2 ~ Aug. 5, 2015.

21. Hang Ye*, Sonjoy Das, **Chi Zhou** , "Investigation of separation force for bottom-up stereolithography process from mechanics perspective," *Proceedings of ASME Computers and Information in Engineering Conference*, DETC2015, Boston, Massachusetts, Aug. 2 ~ Aug. 5, 2015.
22. **Chi Zhou** , Hang Ye*, Feng Zhang*, "A Novel Low-cost Stereolithography Process based on Vector Scanning and Mask Projection for High-accuracy, High-speed, High-throughput and Large-area Fabrication," *Proceedings of ASME Computers and Information in Engineering Conference*, DETC2014, Buffalo, New York, Aug. 17 ~ Aug. 20, 2014.
23. **Chi Zhou** , "A Direct Tool Path Planning Algorithm for Line Scanning based Stereolithography," *ASME International Mechanical Engineering Congress & Exposition*, IMECE2014, Montreal, Canada, November. 14 ~ 20, 2014.
24. Farzad Liravi*, Sonjoy Das, **Chi Zhou** , "Separation Force Analysis and Prediction Based on Cohesive Delamination Model for Bottom-up Stereolithography Using Finite Element Analysis," *Proceeding of Solid Freeform Fabrication Symposium*, Austin, Texas, August 8~10, 2014.
25. **Chi Zhou** , Hang Ye*, Feng Zhang*, "A Hybrid Additive Manufacturing Process based on Laser Scanning and Mask Projection for Improved Fabrication Performance," *Proceeding of Solid Freeform Fabrication Symposium*, Austin, Texas, August 8~10, 2014.
26. Xuejin Zhao, Yayue Pan, **Chi Zhou**, Yong Chen, Charlie C. L. Wang, "An Integrated CNC Accumulation System for Automatic Building-around-inserts," *SME North American Manufacturing Research Conference*, NAMRC41, Madison, Wisconsin, June 10~14, 2013. (**NAMRC Outstanding Paper Award**)
27. Yayue Pan, Yong Chen, **Chi Zhou**, "Fast Recoating Methods for the Projection-based Stereolithography Process in Micro- and Macro-scales," *Proceeding of Solid Freeform Fabrication Symposium*, Austin, Texas, August 8~10, 2012.
28. Dongping Deng, Yong Chen, **Chi Zhou**, "Investigation on PEEK Fabrication Using Mask image projection based Stereolithography," *Proceeding of Solid Freeform Fabrication Symposium*, Austin, Texas, August 8~10, 2012.
29. **Chi Zhou**, Hamid R. Chabok, Yong Chen, Qifa Zhou, Kirk K. Shung, "Ultrasound Transducer Array Fabrication based on Additive manufacturing of Piezocomposites," *Proceedings of 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 International Manufacturing Science and Engineering Conference*, MSEC2012, Notre Dame, Indiana, June 4 - 8, 2012. (**MSEC Best Paper Award – Third Place**)
31. Yayue Pan, Yong Chen, **Chi Zhou**, "Fabrication of Smooth Micro- and Meso- Channels based on Mask Projection Stereolithography," *Proceeding of the International Manufacturing Science and Engineering Conference*, MSEC2012, Notre Dame, Indiana, June 4 - 8, 2012.
32. Yayue Pan, Xuejin Zhao, **Chi Zhou**, Yong Chen, "Smooth Surface Fabrication in the Mask Projection based Stereolithography," *SME North American Manufacturing Research Conference*, NAMRC40, Notre Dame, Indiana, June 4 - 8, 2012.
33. **Chi Zhou**, Yong Chen, Zhigang Yang, Behrokh Khoshnevis, "Development of a Multi-material Mask-Image-Projection-based Stereolithography for the Fabrication of Digital Materials," *Proceedings of Solid Freeform Fabrication Symposium*, Austin, Texas, August 8~10, 2011.
34. Xuejin Zhao, Yayue Pan, **Chi Zhou**, Yong Chen, Charlie C. L. Wang, "Building around Inserts based on Automatic 5-Axis CNC Accumulation," *Proceedings of Solid Freeform Fabrication Symposium*, Austin,

Texas, August 8~10, 2011.

35. **Chi Zhou**, Yong Chen, "Additive Manufacturing based on Optimized Mask Video Projection for Improved Accuracy and Resolution," *SME North American Manufacturing Research Conference*, NAMRC39-4725, Corvallis, Oregon, June 13 - 17, 2011. (**NAMRC Outstanding Paper Award – First Place**)
36. Yayue Pan, **Chi Zhou**, Yong Chen, Jouni Partanen, "Fabrication of Conformal Ultrasound Transducer Arrays and Horns Based on Multi-axis CNC Accumulation," *ASME International Manufacturing Science and Engineering Conference*, MSEC2011-50139, Corvallis, Oregon, June 13 - 17, 2011.
37. 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**)
38. Hamid Reza Chabok, **Chi Zhou**, Yong Chen, Qifa Zhou and K. Kirk Shung, "Development of a Digital Micro-Manufacturing Process for High Frequency Ultrasound Transducers", *IEEE International Ultrasonics Symposium (IUS)*, San Diego, California, October 11-14, 2010.
39. **Chi Zhou**, Yong Chen, "Additive Manufacturing Based on Multiple Calibrated Projectors and Its Mask Image Planning," *Proceedings of ASME Internal Design Engineering Technical Conferences*. Montreal, Quebec, Canada, August 15-18, 2010.
40. **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.
41. Yongqiang Li, Yong Chen, **Chi Zhou**, "Design of Flexible Skin for Target Displacements based on Meso-Structures," *Proceedings of ASME Computers and Information in Engineering Conference*, DETC2009/DAC-86268, San Diego, California, Aug. 30 ~ Sept. 2, 2009.
42. **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 8~11, 2009
43. **Chi Zhou**, "Physical Model based Process Planning for Direct Digital Manufacturing," *Poster of ASME Internal Design Engineering Technical Conferences*. August 30-September 2, 2009, San Diego, California, USA. (**Best Student Poster**)

Conference Proceedings (In China):

1. **Chi Zhou**, Liang Gao, Haibing Gao and Chuanyong Peng, "Pattern Classification and Prediction of Water Quality by Neural Network with Particle Swarm Optimization," *Proceedings of IEEE the 6th World Congress on Intelligent Control and Automation*, June 21-23, 2006, Dalian, China, Vol.4, pp.2864-2868.
2. Yan Dong, **Chi Zhou**, Siliang Suo, Zailu Huang, "Adaptive Bandwidth Allocation Based on Particle Swarm optimization for Multimedia LEO Satellite Systems," *First International Conference on Communications and Networking in China*, ChinaCom, Beijing, China, 2006.
3. Liang Gao, Chuanyong Peng, **Chi Zhou**, Peigen Li, "Solving Flexible Job-shop Scheduling Problem Using General Particle Swarm Optimization," *The 36th CIE Conference on Computers Industrial Engineering*, 2006, 3018-3027.
4. **Chi Zhou**, "Generic PSO Heuristic for Constrained Planning," *Doctoral Consortium at International Conference on Automated Planning & Scheduling*, Monterey, California USA in June, 2005.
5. Hai-bing Gao, **Chi Zhou**, Liang Gao, "Particle Swarm Optimization based Algorithm for Economic Load Dispatch," *Progress in Intelligence Computation & Applications*. 2005, 594-599.

6. Liang Gao, Hai-bing Gao, **Chi Zhou**, "Particle Swarm Optimization based Algorithm for Cutting Parameter Optimization," *Proceedings of IEEE 5th World Congress on Intelligent Control and Automation*. 2004, 2867-2871.

Patents, Provisional Patent Applications and Technology Disclosures

- Yong Chen, **Chi Zhou**, "Digital Mask-image-projection-based Additive Manufacturing that Applied Shearing Force to Detach Each Added Layer". USP Patent No. 9,120,270, Issue date: 9/1/2015.
- Yong Chen, **Chi Zhou**, "Computer Numerical Control (CNC) Additive Manufacturing". USP Patent No. 9,221,216, Issue date: 12/29/2015.
- Ali El-Siblani, Alexandr Shkolnik, **Chi Zhou**, "Apparatus and Method for Forming Three-dimensional Objects Using Linear Solidification with Travel Axis Correction and Power Control," US Patent Application # US 14/243,967, Publication US20140306380.
- Ali El-Siblani, Alexandr Shkolnik, **Chi Zhou**, "Apparatus and Method for Forming Three-dimensional Objects Using a Curved Build Platform," Publication 20150102531.
- Qiaoqiang Gan, Alexander N. Cartwright, Haomin Song, Dengxin Ji, Borui Chen, **Chi Zhou**, "Manipulating the Pore Size of Polymer Photonic Crystal Grating for Reflection Color Display," UB STOR, R-7040.
- Wenyao Xu, **Chi Zhou**, Kui Ren, Chen Song, Feng Lin, "Methods of protecting 3D printers from side-channel attacks," UB STOR, Docket 7102.
- Wenyao Xu, **Chi Zhou**, Jerry Ajay, Chen Song, Aditya Singh Rathore, "Methods of Low-power 3D Printers," UB STOR, Docket 7126.
- Wenyao Xu, **Chi Zhou**, Kui Ren, Chen Song, Zhengxiong Li, "Unclonable QR Code via 3D printing," UB STOR, 030-7125

Presentations and Talks

- "3D printing: the next industrial revolution," UpBeat, Department of Computer Science and Engineering, University at Buffalo, the State University of New York, September 16, 2016.
- "3D Printing for Mass Customization," Kansas State University, April 18, 2016.
- "Investigation of separation force for bottom-up stereolithography process from mechanics perspective," SIAM Conference on Geometric and Physical Modeling (GDSPM15), Salt Lake City, Utah, October 12-14, 2015.
- "Solid Mechanics based Design and Optimization for Support Structure Generation in Additive Manufacturing," Solid Freeform Fabrication Symposium (SFF), Austin, Texas, August, 2015.
- "Investigation of separation force for bottom-up stereolithography process from mechanics perspective," Solid Freeform Fabrication Symposium (SFF), Austin, Texas, August, 2015.
- "3D Printing for Mass Customization," Rochester Institute of Technology, April 2, 2015.
- "3D Printing for Mass Customization," Stony Brook University, April 24, 2015.
- "3D Printing for Mass Customization," New Horizons in 3D Printing and Digital and Additive Manufacturing Conference, University at Buffalo, March 16 ~ 17, 2015.
- "A Novel Low-cost Stereolithography Process based on Vector Scanning and Mask Projection for High-accuracy, High-speed, High-throughput and Large-area Fabrication," New Horizons in 3D Printing and Digital and Additive Manufacturing Conference, Stony Brook University, September 29 ~ 30, 2014.
- "Process Planning and Optimization for Stereolithography based Additive Manufacturing," Advanced Design & Manufacturing Impact Forum, University at Buffalo, August 17, 2014,

Media

Liquid Metal Jetting 3D Printer

- [“Vader Systems may have created a quantum leap in manufacturing”](#) UB News (2017/01)
 - [“Your car's parts could one day be made by a printer”](#) PC World (2017/01)
 - [“Vader Systems creates liquid metal 3D printer for manufacturing”](#) Science Daily (2017/01)
 - [“Move Aside Skywalker, the Real Vaders are Here with Liquid Metal 3D Printing”](#) Steemit (2017/01)
 - [“Liquid Metal 3D Printing Holds Promise As Revolutionary Manufacturing Method”](#) Tech Times (2017/1)
 - [“Bringing liquid metal into the 3D printing mix”](#) Engineers Australia (2017/01)
 - [“Univ. Spin-Off Develops Lower Cost 3-D Metal Printing”](#) Science and Enterprise (2017/01)
 - [“3D printing with metals is nothing new but a startup is taking the process to the next level”](#) Pakistan Clip (2017/01)
 - [“3-D printing liquid metal with Vader Systems”](#) SV3DPRINTER (2017/01)
 - [“Vader Systems Might Have Combined A Quantum Jump In Manufacturing”](#) Global News Connect (2017/01)
-

Smartphone Hacks 3-D Printers

- [“Smartphone hacks 3-D printer by measuring ‘leaked’ energy and acoustic waves”](#) UB News (2016/09)
 - [“The spy who hacked me: Measuring the security vulnerabilities of 3-D printing”](#) NSF Science 360 (2016/09)
 - [“Top secret designs could be stolen from 3D printers using an ordinary smartphone”](#) Digital Trends (2016/09)
 - [“Smartphone hacks 3-D printer by measuring 'leaked' energy and acoustic waves”](#) National Science Foundation (2016/09)
 - [“Smartphones can steal 3-D printing plans by listening to the printer”](#) Fedscoop (2016/09)
 - [“Scientists' sneaky smartphone software steals 3D printer designs”](#) The Register (2016/09)
 - [“Smartphone hacks 3-D printer by measuring 'leaked' energy and acoustic waves”](#) Science Daily (2016/09)
 - [“More to Worry About: IP Thieves Could Use Smartphones to Steal Design Data from Your 3D Printer in Action!”](#) 3D Print (2016/09)
 - [“Smartphone Hacks 3D Printer by Measuring 'Leaked' Energy and Acoustic Waves”](#) Communications of the ACM (2016/09)
 - [“3D printers have been shown to be vulnerable to attack by smartphones that can steal designs by being within close proximity during the printing process”](#) E&T magazine (2016/09)
 - [“How IP Thieves Use Smartphones in Stealing Design Data from a 3D Printer”](#) 3DPrinting from scratch (2016/09)
 - [“Hackers can use smartphones to tap into your 3D printer”](#), eeDesignIt (2016/09)
-

International 3D Printing Competition Award

- [“Shoe design gives UB students win in international 3-D printing competition”](#) UB News (2016/03)
 - [“University at Buffalo Students Promote World Peace with 3D Printed Shoes”](#) 3D Print (2016/07)
 - [“Students design 3D printed shoes with a message for world peace”](#) 3Ders (2016/07)
 - [“3D Printed Shoe – Technology Meets Art to Shape a Better Future”](#) Buffalo Rising (2016/06)
 - [“3D Printing: Can Art with Technology shape a better future?”](#) Linked In (2016/07)
 - [“Students win international 3D printing competition”](#) 3D fab print (2016/07)
-

3D Printing Graphene Aerogel

- [“The secret to 3-D graphene? Just freeze it”](#) UB News (2016/03)
 - [“Lighter than air”](#) AtBuffalo EUREKA (2016/06)
 - [“You can now 3D print one of the world’s lightest materials”](#) QUARTZ (2016/02)
 - [“Scientists Research Materials & New Processes for 3D Printing Ultra Light Graphene Aerogels”](#) 3D Print
-

(2016/02)

- [“3D printed graphene aerogels take shape”](#) Chemistry World (2016/02)
- [“Buffalo and K-State scientists develop new technique for 3D printing graphene aerogels”](#) 3Ders (2016/02)
- [“10 Real Life Examples of 3D Printing”](#) Fox Business (2016/03)
- [“You can now 3D print one of the world’s lightest materials”](#) MSN (2016/03)
- [“New technique for 3D printing graphene aerogels open door to new applications”](#) Graphene-Info (2016/03)
- [“Scientists Create World’s Lightest 3D Printed Materials – Graphene Aerogel!”](#) Cheap Tubes (2016/03)
- [“University Researchers 3D Printing Graphene Aerogels”](#) 3D Print Board (2016/02)
- [“3D Printing of Graphene Aerogels”](#) Chemistry Views Magazine (2016/02)
- [“New technique for 3D printing graphene aerogels could open door to new applications”](#) Before it’s News (2016/03)
- [“Future Links March 1st”](#) Drupa News Room (2016/03)
- [“Cool 3D structures made from graphene”](#) Materials Today (2016/03)
- [“Researchers Create Complex 3D Structure Made of Graphene Aerogel”](#) AZO NANO (2016/03)
- [“A printer and some ice make 3D objects out of graphene”](#) Futurity (2016/03)
- [“Graphene Tamed by Freezing It”](#) Controlled Environments Magazine (2016/03)
- [“There’s Now 3D-Printed Graphene Aerogel”](#) Gizmodo (2016/03)
- [“The secret to 3-D graphene? Just freeze it”](#) Space Daily (2016/03)
- [“3-D graphene created by an international research team led by University at Buffalo engineers”](#) Nanotechnology Now (2016/03)

SME Outstanding Young Manufacturing Engineer Award

- [“Zhou receives Outstanding Young Manufacturing Engineer award”](#) UB SEAS (2014/12)
- [“2015 Outstanding Young Manufacturing Engineers”](#) SME (2015)
- [“SME Announces 11 New Outstanding Young Manufacturing Engineers”](#) Thomasnet and Prweb (2015/03)

Master Student Created Ultra-Fast 3D Printer

- [“Student Creates Super Fast 'Membrane Based' 3D Printer”](#) 3D Printer (2015/04)
 - [“Photos of 3D Printed objects from the Engineering Lab of Chi Zhou”](#) (2015)
 - [“Bo Pang’s Continuous DLP Technology is Taking Ultra Fast 3D Printing to the Masses”](#) 3D Printing Industry (2015/04)
 - [“Student Creates Super Fast Continuous SLA 3D Printer”](#) Hot Tech (2017/01)
 - [“4 and 1/2 3D Printing Trends You Should Know About”](#) Makezine (2015/04)
 - [“Bo Pang’s Continuous DLP Technology is Taking Ultra Fast 3D Printing to the Masses”](#) DIY3dprinted
 - [“Maker creates a super fast, continuous SLA 3D printer”](#) Atmel Corporation
-
- [“3-D printing enables students, researchers to create amazing things”](#) UB SEAS (2016/01)
-

Teaching and Course Development

- IE 505: Production Planning and Control (Spring 2015, Summer 2015, Spring 2016, Summer 2016)
- IE 680: Advanced Topics in 3D Printing (Spring 2014, Spring 2016, Spring 2017)
- IE 680: Uncertainty & Mechanics in 3D Printing (Joint course: Fall 2014)
- IE 406/506: Computer Integrated Manufacturing (Fall 2013, Fall 2014, Fall 2015, Fall 2016, Fall 2017)
- DMDII Online Course Series 101: Digital Manufacturing Commons (Spring, 2017)

Student Advising

Ph.D. Students:

- Hang Ye: *Rapid 3D Printing of Scale-up Vascularized Cell-laden Tissue and Organ Construct*, degree

expected Spring 2018)

- Feng Zhang: *3D Printing for Multiscale, Multifunctional Nano-material*, degree expected Spring 2018)
- Guanglei Zhao: *Processing-Structure-Properties-Performance Relationship for Direct Freezing 3D Printing*, degree expected Fall 2018)
- Jida Huang: *Geometric Modeling and Process Optimization for 3D Printing Prefabrication in Mass Customization*, degree expected Spring 2019)
- Tianjiao Wang: *Online Monitoring and Close-loop Control for High-fidelity, High-quality Inkjet Metal 3D Printing*, degree expected Spring 2020)

M.S. Students:

- Rohit Nikesh Kesavan, degree expected Spring 2018
- Arushi Dhakad: *Biomaterial based 3D Engineering of Composite Cartilage Structure*, Graduated Spring 2017
- Mariana Barato: *Precision Deposition of Cell-laden Collagen Droplets in Bio-printing Applications*, Graduated Spring 2016
- Yijing Xu: *Continuous 3D Printing of Human Liver Chip for Screening Drug-Induced Hepatotoxicity*, Graduated in Spring 2016
- Ashita Raghav Guthula: *Precision Deposition of Cell-laden Collagen Droplets in Bio-printing Applications*, Graduated in Fall 2015
- Farzad Liravi: *Dynamic Force Analysis for Bottom-up Projection-based Additive Manufacturing Using Finite Element Analysis*, Graduated in Spring 2014
- Feng Zhang: *Stereolithography and Jetting based Colorful 3D Printing*, Graduated in Spring 2014

Other Advisees:

- Independent Study / Individual Problems / Undergrad Research:
 - ◆ Spring 2017: Hardik Unmeshkumar Gandhi, Dhruvay Jain, Sudhir Krishna Gundmi, Hemang Rajendra Trivedi, Xin Wang
 - ◆ Fall 2016: Yi Ai, Tejas Ganesh Bhandarkar, Lokesh Boddu, Hardik Unmeshkumar Gandhi, Dhruvay Jain, Xin Li, Sagar Kacharulal Malwadkar, Mandar Pravin Markandeya, Rohitkumar Tulsibhai Moradiya, Sanket Ramchandra Nemade
 - ◆ Summer 2016: Dhruvay Jain, Sourabh Manoj Saptarshi
 - ◆ Spring 2016: Hardik Unmeshkumar Gandhi, Dhruvay Jain, Jida Huang, Guanglei Zhao
 - ◆ Fall 2015: Ning Li, Yuenan Li, Sathya Narayanan Ramamurthy, Praveen Babu Ravichandran, Shukun Ye, Jida Huang, Guanglei Zhao
 - ◆ Summer 2015: Yuan Li, Vedant Sandhya
 - ◆ Spring 2015: Bo Pang, Jida Huang, Feng Zhang, Guanglei Zhao
 - ◆ Fall 2014: Ajay Pal Singh Bath, Arushi Dhakad, Bo Pang, Hang Ye, Feng Zhang
 - ◆ Spring 2014: Bo Pang
 - ◆ Fall 2013: Guanglei Zhao
- Visiting Scholar:
 - ◆ Li Zhang, ISE, Mar 2017 - Feb 2018
 - ◆ Feng Yang, ISE, Sep 2015 - Aug 2016

Alumni

- Ning Li: *EnvisionTec Inc.* Dearborn, MI (SLA 3D printing company)

- Hardik Gandhi: *Shapeways Inc.* New York, NY (3D printing service company)
- Shukun Ye: *EnvisionTec Inc.* Los Angeles, CA (SLA 3D printing company)
- Dhruvay Jain: *Buffalo Manufacturing Works* Buffalo, NY (3D printing service and research organization)
- Yuenan Li: *Michael Foods Egg Products Co.*, Lenox, Iowa
- Ashita Guthula: *Thorlabs Inc.* Newton, NJ
- Bo Pang: *XYZ Printing Inc.* San Diego CA (FDM 3D printing company)
- Farzad Liravi: Pursing Ph.D. at Waterloo University, Canada

Dissertation/Thesis Committee

Ph.D. Students:

- Yuan Yuan, Preliminary Exam: *Both Mechanics and Micro-morphogenesis of Synthetic Matrix Regulates Cell Fate*, BME, UB, 2017/02
- Chen Song: Oral Qualification Exam: *Cyber Security of 3D Printing*, CS, UB, 2016/12
- Jerry Ajay, Oral Qualification Exam: *Power Analysis and Optimization of 3D Printers*, CS, UB, 2016/12

MS Students:

- Min Wei, MS Thesis: *Graphene-like Material for Electrochemical Energy Storage Device Applications*, CBE, UB, 2017/06.
- Wenyi Yang, MS Thesis: *Three-dimensionally Printed Polymer Rendered Electrical Resistance based Self-Sensing by Carbon Nanofiber Addition*, MAE, UB, 2017/01.
- Naga Bharath Gundrati, MS Thesis: *Capacitance-based Non-destructive Testing of Three-dimensionally Printed Polymer*, MAE, UB, 2017/01
- Sathish Kasilingam, MS Project: *Toward In-Situ Geometric Integrity Assessment in Additive Manufacturing*, MDI, UB, 2017/01
- Chenyu Li, Ms Thesis: *Floating Carbon-black-coated Paper Solar Vapor Generation*, EE, 2016/07
- Mohammad Firoz, Ms Thesis: *Physics Based Modeling of Filament Melting in Fused Deposition Modleing for 3D Printing*, MAE, 2016/05

Service

Profession:

- ASME CIE Division.
 - ◆ Chair, Computer-Aided Product and Process Development (CAPPD) Committee, 2016.
 - ◆ Co-Chair, Computer-Aided Product and Process Development (CAPPD) Committee, 2015.
 - ◆ Secretary, Computer-Aided Product and Process Development (CAPPD) Committee, 2014.
- Editorial Board of Computer-Aided and Digital Manufacturing Technologies.
- Symposium Co-Organizer, Computer-Aided Product and Process Development, 2017 ASME Computers and Information in Engineering Conference, August 6-9, Cleveland, Ohio, USA
- Symposium Co-Organizer, Simulation and Optimization for Additive Manufacturing, 2017 ASME Computers and Information in Engineering Conference, August 6-9, Cleveland, Ohio, USA
- Symposium Co-Organizer, Quality Assurance in Additive Manufacturing: Integrated Sensing, Modeling and Control, 2017 ASME Manufacturing Science and Engineering Conference (MSEC), June 4 - June 8, 2017, Los Angeles, CA
- Symposium Co-Organizer, Computer-Aided Product and Process Development, 2016 ASME Computers and Information in Engineering Conference, August 21-24, Charlotte, NC, USA

- Symposium Co-Organizer, Simulation and Optimization for Additive Manufacturing, 2016 ASME Computers and Information in Engineering Conference, August 21-24, Charlotte, NC, USA
- Symposium Co-Organizer, Digital Design and Manufacturing, ASME/ISCIE International Symposium on Flexible Automation (ISFA2016), August 1-3, 2016, Cleveland, Ohio, USA
- Symposium Co-Organizer, Quality Assurance in Additive Manufacturing: Integrated Sensing, Modeling and Control, 2016 ASME Manufacturing Science and Engineering Conference (MSEC), June 27 - July 1, 2016, Virginia Tech University
- Session Chair, Advances in Micro - and Nano - Additive Manufacturing, SME North American Manufacturing Research Conference (NAMRC), June 4-8, 2017, University of Southern California
- Session Chair, Process Monitoring in Additive Manufacturing I, SME North American Manufacturing Research Conference (NAMRC), June 4-8, 2017, University of Southern California
- Session Chair, Process, Property, Performance Relationship in Additive Manufacturing, SME North American Manufacturing Research Conference (NAMRC), June 27-July 1, 2016, Virginia Tech University
- Session Co-Chair, Quality Assurance in Additive Manufacturing Systems, ASME Manufacturing Science and Engineering Conference (MSEC), June 27-July 1, 2016, Virginia Tech University
- Chair, 2015 ASME-CIE Graduate Research Poster Session
- Review Coordinator, ASME Computers and Information in Engineering Conference, Boston, Massachusetts, 2015
- Session Co-Chair, CIE-2-2 Computer-Aided Product and Process Development (CAPPD General) - II, ASME Computers and Information in Engineering Conference, Boston, Massachusetts, 2015
- Session Co-Chair, Design and Simulation for AM - III, ASME Computers and Information in Engineering Conference, Boston, Massachusetts, 2015
- Session Co-Chair, Design for Additive Manufacturing, 2015 SME North American Manufacturing Research Conference (NAMRC), June 8-12, 2015, University of North Carolina at Charlotte
- Committee Member, the New York State Network of Excellence in Materials and Advanced Manufacturing.
- Session Co-Chair, Additive Manufacturing II, 2014 ASME Manufacturing Science and Engineering Conference (MSEC), June 9-13, 2014, University of Michigan
- Symposium Co-Organizer, Advances in Additive Manufacturing, 2014 ASME Manufacturing Science and Engineering Conference (MSEC), June 9-13, 2014, University of Michigan
- Session Chair, Session CIE-2-1 Manufacturing and Process Planning, ASME Computers and Information in Engineering Conference, Chicago, IL, 2012
- Paper Reviewed:
 - ◆ ACS Applied Materials & Interfaces, 2017
 - ◆ Additive Manufacturing Journal, 2014-2017
 - ◆ Advanced Materials Technologies, 2017
 - ◆ Advanced Engineering Materials, 2017
 - ◆ ASME International Journal of Computing and Information Science in Engineering, 2014-2017
 - ◆ ASME International Journal of Manufacturing Science and Engineering, 2014-2017
 - ◆ ASME International Journal of Mechanical Design, 2017
 - ◆ ASME Computers and Information in Engineering Conference, 2008-2016
 - ◆ ASME International Mechanical Engineering Congress & Exposition, 2014
 - ◆ ASME Manufacturing Science and Engineering Conference, 2014~2017
 - ◆ ASME International Conference on Innovative Design and Manufacturing, 2014

- ◆ ASME International Symposium on Flexible Automation, 2013-2016
- ◆ Applied Mathematics and Computation, 2014
- ◆ Computer Aided Design, 2013-2016
- ◆ Computer-Aided Design and Applications, 2014-2016
- ◆ Electronic Commerce Research and Applications, 2015
- ◆ International Journal of Advanced Manufacturing Technology, 2015
- ◆ IEEE Robotics and Automation, 2017
- ◆ IEEE Transactions on Automation Science and Engineering, 2016
- ◆ Journal of Nanotechnology in Engineering and Medicine, 2015
- ◆ Journal of Manufacturing Processes, 2015~2017
- ◆ Journal of Manufacturing System, 2017
- ◆ Journal of Engineering, 2015
- ◆ Materials Discovery, 2015
- ◆ Neurocomputing, 2014~2015
- ◆ Rapid Prototyping Journal, 2010-2014
- ◆ Robotics and Computer Integrated Manufacturing, 2015
- ◆ Scientific Report, 2017
- ◆ Sensors and Actuators, 2017
- ◆ Solid Freeform Fabrication Symposium, 2011-2016

University at Buffalo, SUNY:

- Conference Organizer, New Horizons in 3D Printing and Digital and Additive Manufacturing Conference, University at Buffalo, March 16 ~ 17, 2015.
- Give mock lecture for Accepted Students, Friday April 22, 2016
- Faculty Marshal, Engineering Commencement (May 2014, 2015, 2016)
- Advise a team participating 2016 Singapore International 3D Printing Competitions (2015-2016)
<http://sc3dp.ntu.edu.sg/pages/3dprintingcompetitions.aspx>
- Extensive involvement in the new SMART CoE activities
<http://www.buffalo.edu/sustainablemanufacturingandadvancedrobotictechnologies.html>

The School of Engineering and Applied Sciences (SEAS):

- Tinker - An Engineering Camp for High School Girls, 3D printing session (August, 2015-2016)
<http://engineering.buffalo.edu/home/Engagement/CommunityEngagement/tinker-a-summer-engineering-camp-for-high-school-girls.html>
- University at Buffalo Shared Instrumentation Laboratories Faculty Advisory Committee (2013-2017)
<http://www.buffalo.edu/shared-facilities-equip.html>
- Judge for the 2015, 2017 SEAS Graduate Poster Competition.
- IMPACT seed funding proposal reviewer, 2017

Industrial and Systems Engineering (ISE):

- Search committee member, 2017
- Organized a Middle and High School Students 3D Printing Learning Workshop, May, 2017
- 2015~2016 Praxair Seminar Coordinator (2015-2016) [Collaboration with Chase Murray]
- ISE Department Undergraduate Teaching Labs Committee, purchased Robot System (2013-2017)
- ISE Department Poster Competition Coordinator (March 2014, 2015, 2016, 2017) [Collaboration with

Matthew Bolton]

- Presented a lecture for IE 101, Spring 2014, Spring 2015, Spring 2016 and Spring 2017.

Outreach/Public Service

- Interdisciplinary Science and Engineering Partnership (ISEP) Program Summer Research between University at Buffalo and Hutch Tech High School (Summer 2014, 2015)
- Consultant for *EnvisionTec Inc.* <http://envisiontec.com/>
- Collaboration with *Vader Systems* <http://www.vadersystems.com/>
- Collaboration with *Post Process Inc.* <http://postprocess.com/>
- Collaboration with *XYZ printing.* <http://us.xyzprinting.com/>
- Collaboration with *Great Lakes Orthodontics.* <http://www.greatlakesortho.com/>

Professional Development

- Grant Revising and Resubmitting Proposals workshop, University at a Buffalo, May 24-26, 2017
- Grant Writing Workshop, University at a Buffalo, January 18, 2017
- NSF Workshop on Additive Manufacturing for Health, March 17 - 18, Arlington, VA, July 2016
- Pre-Seed Workshop 2016, Buffalo, NY, May 17, 19 and 26, 2016
- IIE New Faculty Colloquium, Anaheim, CA, May 21, 2016
- NSF CAREER Proposal Writing Workshop at the ASME IDETC, Boston, Massachusetts, August, 2015
- NSF Proposal Writing Workshop, University of North Carolina at Charlotte, NC, June 8, 2015
- NSF CAREER Proposal Writing Workshop, Northeastern University, Boston, MA, April 27 ~ 28, 2015
- NSF CAREER Proposal Writing Workshop at ASME IDETC, Buffalo, NY, August, 2014
- NSF Proposal Writing Workshop (Fall 2013)
- NSF Workshop on Frontiers of Additive Manufacturing Research and Education, July 11 - 12, Arlington, VA, July 2013