

Biographical Sketch
Jie Shen, Ph.D., Associate Professor
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Professional Preparation

Univ. of Saskatchewan	Ph. D.	2000	Computer Science
Univ. of Saskatchewan	M.S.	1997	Computer Science
Beijing Univ. of A.E.	Ph.D.	1988	Vehicle Engineering
JiangSu Sci & Tech. Univ.	M.Sc.	1985	Ground-Vehicle System Dynamics
JiangSu Sci & Tech. Univ.	B.Sc.	1982	Design & Manufacturing of Automotive & Tractor

Professional Appointments

2008-present	Associate Professor, University of Michigan, Dearborn
2002-2008	Assistant Professor, University of Michigan, Dearborn
2000-2001	Computer Scientist, Altair Engineering Inc., CA

Related Publications

- **Shen, J.**, Mao, J., Chow, J., Boileau, J., Su, X.. and Wells, J.M. 2009. "Material Damage Explored with a Link from Microscale to Macroscale." *Science* (to be submitted) (ISI impact factor: **29.7**).
- **Shen, J.**, Mao, J., Reyes, G., Chow, J., Boileau, J., Su, X.. and Wells, J.M. 2009. "A Multiresolution Transformation Rule of Material Defects." *International Journal of Damage Mechanics* (accepted) (ISI impact factor: **1.91**).
- **Shen, J.**, Yoon, D., Shehu, D. and Zhang, C. 2009. "Spectral Moving Removal of Non-isolated Outlier Clusters." *Computer-Aided Design*, Vol. **41**, No. 4, pp. 256-267 (ISI impact factor: **1.22**).
- **Shen, J.**, Maxim, B. and Akingbehin, K. 2005. "Accurate Correction of Surface Noises of Polygonal Meshes." *International Journal for Numerical Methods in Engineering*, Vol. **64**, No.12, pp. 1678-1698 (ISI impact factor: **1.61**).
- **Shen, J.** and Yoon, D. 2003. "A New Scheme for Efficient and Direct Shape Optimization of Complex Structures represented by polygonal meshes." *International Journal for Numerical Methods in Engineering*, Vol. **58**, No. 4, pp. 2201-2223 (ISI impact factor: **1.61**).
- **Shen, J.** and Yoon, D. 2004. "A Freeform Shape Optimization of Complex Structures Represented by Arbitrary Polygonal or Polyhedral Meshes." *International Journal for Numerical Methods in Engineering*. Vol. **60**, No. 15, pp.2441-2466 (ISI impact factor: **1.61**).

Other Significant Publications

- **Shen, J.** and Kushwaha, R.L. 1998. "Soil-machine interactions, a finite element perspective." Marcel Dekker, New York, 352 pages.
- **Shen, J.** 2003. "Feature-based Optimization of Beam Structures Represented by Polygonal Meshes." *ASME/ACM Transactions, Journal of Computing and Information Science in Engineering*. Vol. **3**, No. 3, pp.250-259 (ISI impact factor: **0.45**).
- Shi, Z. and **Shen, J.**, 2005. "Convergence of Non-Monotone Line Search Methods." *Journal of Computational and Applied Mathematics*, Vol. **193**, No. 2, pp. 397-412 (ISI impact factor: **0.94**).
- Shi, Z. and **Shen, J.**, 2004. "A Gradient-Related Algorithm with Inexact Line Searches." *Journal of Computational and Applied Mathematics*, Vol. **170**, No. 2, pp. 349-370 (ISI impact factor: **0.94**).

- **Shen, J.** and Yang, Y.H. 1998. "Deformable Object Modeling Using the Time-Dependent Finite Element Method." *Graphical Models and Image Processing*. Vol. **60**, No. 6, pp. 461-487.
- Shi, Z. and **Shen, J.**, 2007. "Convergence of Liu-Storey conjugate gradient method." *European Journal of Operational Research*, Vol. **182**, No. 4, pp. 552-560 (ISI impact factor: **1.09**).

Synergistic Activities

- Developed a fully distributed, Internet e-computing platform that provided a robust, distributed, scalable e-education server suite, with an education funding from Ameritech in 2002. This e-education center can be used as an effective education tool to extend the impact of research results on curriculum and industry.
- Contributed to the development of the world-class commercial software, OptiStruct[®] and HyperMesh[®] during the period from 2000 to 2005. These two software products have been deployed in many Fortune 500 companies and Original Equipment Manufacturers (OEMs) worldwide.
- Invented a University of Michigan Invention 3805 entitled "Accurate Correction of Measurement Errors," which has been licensed to a U.S. company of laser sensors.
- Mentored 12 undergraduate students in senior design projects at the University of Michigan – Dearborn, with the participation of underrepresented groups in science and engineering during the period from January 2002 to December 2008.
- Served as a committee member for SAE New Concept Committee; a committee member for ASME B46.1 standard on surface texture; a committee member for the Computer Graphics Technical Committee, International Association of Science and Technology for Development; an associate editor for International Journal of Modelling and Simulation; an associate editor for International Journal of Computers and Applications; an associate editor for Proceedings of CGVR'06 and CGVR'07; a conference program committee member for ICCSA'06, ComVec'06, MSV'06, CAD'07, ICCS'07, CGVR'07, ICCSA'07, CAD'08, CAD'09, FIP'09, ASME'09.

Recent Collaborators

Drs. James Boileau, Xuming Su and Cedric Xia, Ford Scientific Research Lab; Dr. Yuqing Song, Chinese Academy of Science, China; Drs. Chi L. Chow and German Reyes, Dept. of Mechanical Engineering, University of Michigan – Dearborn (UM-D); Dr. Weichen Shi, Shanghai Maritime University, China; Mr. Marty Schuster, Laser Design Inc., Minnesota; Dr. David Luebke and Mr. Joseph Stam, Nvidia Research.

Graduate Advisor

Dr. Yee-Hong Yang, University of Alberta, Canada

Summary of Publications

- Books: 1
- Technical papers 100