Fuhua (Frank) Cheng

Gill Professorships in Engineering Selection Committee
University of Kentucky
Lexington, KY 40506

Dear Committee Members:

Please accept this letter and the enclosed résumé as my application for the Gill Professorships in the College of Engineering, as announced in your letter of February 25, 2022.

My research areas are *game development/graphics*, *geometric/solid modeling*, *3D imaging* and *3D pointing*. These areas find applications in many health related areas. I have done research work in 3D maxillofacial surgery simulation (grants 3, 5), medical image segmentation (grant 6), mouth and occlusion reproducing (grant 7), dental care CAD/CAM (grant 20), computer games for health professional education (paper 2), automatic placement/arrangement of underneath bone structures for 3D facial expression and animations (paper 5), monitoring technology for latent risk population (paper 6), modeling 3D human facial expressions (papers 8, 91), growth simulation of facial/head model (paper 12), and facial expressions transformation (paper 87).

In addition to developing computer games for medical applications (grant 1), I am also involved in the following two research projects in dental care and plastic surgery:

Non-Invasive Mouth Reproducing : use our patented 3D imaging (patents 3, 4, 5, 9, 13) and subdivision surface based modeling (patent 1) technologies to develop novel 3D data acquisition device and powerful subdivision surface based reverse engineering techniques so that a dentist can reproduce a patient's mouth without using the traditional impression-taking approach.

Virtual 3D Plastic Surgery : use the techniques developed in papers 5, 8, and 12, we will work with people in plastic surgery area to develop a realistic, not imaging processing based, but 3D facial plastic surgery simulator. The technology developed here would make outcome prediction of plastic surgery possible and, consequently, reduce the risk for any given patient.

The above information tells how my current research activites encompass interdisciplinary work at the interface between engineering and medicine.

I thank the Selection Committee very much for considering my application and I look forward to hearing from the Committee.

Sincerely yours,

Fuhua (Frank) Cheng
Encl. résumé.

Curriculum Vitae: Fuhua (Frank) Cheng

Personal Data:

Business Address:	Dept. of Computer Science, Univ. of Kentucky, Lexington, KY 40506-0633
Citizenship:	USA
Phone:	Office (859) 257-6760 Cell (859) 948-3375
Fax:	(859) 257-1505
E-mail:	cheng@cs.uky.edu
URL:	http://www.cs.uky.edu/~cheng/

Research Interests:

computer graphics, geometric modeling, 3D imaging, 3D pointing

Education:

9/80 - 5/82	Ph.D., Math (major) & Computer Science (minor), Ohio State Univ., Columbus, Ohio
9/78 - 5/80	M.S., Computer Science, Ohio State Univ., Columbus, Ohio
6/77 - 5/78	M.S., Mathematics, Ohio State Univ., Columbus, Ohio
9/69 - 6/75	M.S., Mathematics, Tsinghua Univ., Hsinchu, Taiwan

Professional Experience:

1/12 - 8/15	Joint Prof, Dept. of Computer Science, Tsinghua Univ., Taiwan
3/10 - 8/15	Vice President, Amchael Visual Technology Corp., Hsingchu, Taiwan
1/09 - 12/11	Visiting Prof, Dept. of Computer Science, Tsinghua Univ., Taiwan
7/98 -	Prof., Dept. of Computer Science, Univ. of Kentucky, Lexington, Kentucky
9/93 - 8/94	Visiting Prof., Dept. of Software, Univ. of Aizu, Japan
9/93 - 8/94	Project Director, Olympus Optical Co., Tokyo, Japan
9/93 - 3/94	Visiting Researcher, Dept. of Information Science, Univ. of Tokyo, Japan
7/89 - 7/98	Assoc Prof, Dept. of Computer Science, Univ. of Kentucky, Lexington, Kentucky
9/86 - 6/89	Assist Prof, Dept. of Computer Science, Univ. of Kentucky, Lexington, Kentucky
9/82 - 8/86	Assoc Prof, Dept. of Computer Science, Tsinghua Univ., Taiwan
8/75 - 5/77	Military service, Taiwan

Honors:

- Invited Keynote Speaker (Topic: One-Step Bicubic Interplation), *The 3rd Asian Conference on Design and Digital Engineering (ACDDE2014)*, Jinan, China, Oct. 31- Nov. 2, 2014.

- Invited Keynote Speaker (Topic: Guided Catmull-Clark Subdivision), *The 20th Workshop on Computer Graphics (CGW2012)*, Nanto, Taiwan, July 12-13, 2012.

- Invited Keynote Speaker (Topic: Growth Simulation of Facial/Head Model from Childhood to Adulthood), *The 2nd International Craniofacial Research Conference*, Chang-Gung Memorial Hospital, Taoyuan, Taiwan, April 28-29, 2012.

- Invited Keynote Speech Speaker (Topic: Fast Mesh Interpolation and Mesh Decomposition with Applications), *2011 International Conference on Computational and Information Sciences*, Chengdu, Sichuan, China, October 21-23, 2011.

- Invited University Lecture Speaker (Topic: STMIS - Digital 3D Contents Generators), Southwest Petroleum University, Chengdu, China, December 14, 2009.

- Invited Plenary Speaker (Topic: Fast Mesh Interpolation and Mesh Expansion with Applications), *12th International Conference on Humans and Computers*, Hamamatsu, Japan, December 9-11, 2009.

- Best Poster Award, *Geometric Modeling and Processing '2008*, April 23-25, 2008, Huang- zhou, China

- Best Teacher Award, ACM University of Kentucky Chapter & Upsilon Pi Epsilon Gamma Chapter, April 2007.

- Invited Plenary Speaker (Topic: Near-Optimum Adaptive Tessellation of General Catmull-Clark Subdivision Surfaces), 2006 International Symposium on Information and Computational Science (ISICS'06), Dalian, P.R.C., August 15-18, 2006.

- Invited speaker (Topic: Constrained Scaling of Catmull-Clark Subdivision Surfaces), 2003 Pacific Workshop on Geometric Modeling, University of Calgary, October 7, 2003, Calgary, Canada.

- Invited Minisymposium Speaker (Topic: Subdivision Depth Computation and Adaptive Subdivision of Catmull-Clark Subdivision Surfaces), SIAM Conference on Geometric Design and Computing, November 10-13, 2003, Seattle, Washington.

- Keynote Speaker, Annual Symposium in Mathematical Sciences, Eastern Kentucky University, Richmond, Kentucky, February 26, 1999

- Senior Visitor, CAD Center, Tsinghua University, Beijing, P.R.C., Summer 1997, 1998, and 1999

- Invited Visiting Professor, Shandong University, Jinan, P.R.C., 1995-present

- *Dr. Sun Yat-Sen* Technology Invention Award, Taipei, 1985. Awarded for the design of the special hardware: Bezier Curve Generator (BCG).

Journal Editing:

- Journal of Information and Computational Science (Member of Editorial Board, 2004-2009)

- Computer Aided Design & Applications (Member of Editorial Board, 2004-)

- Journal of Computer Aided design and Computer Graphics (Member of Editorial Board, 2006-)

- ISRN Journal of Applied Mathematics (Member of Editorial Board, 2010-)

- Computer Aided Drafting, Design and Manufacturing (Member of Editorial Board, 2012-)

Professional Activities:

- Member, International Program Committee, *15th International Conference on CAD/CG (CAD/ Graphics 2017)*, August 26-27, 2017, Zhangjiajie, China.

- Member, International Program Committee, *14th International Conference on CAD/CG (CAD/ Graphics 2015)*, August 26-28, 2015, Xi'an, China.

- Member, International Program Committee, *13th International Conference on CAD/CG (CAD/ Graphics 2013)*, November 16-18, 2013, Hong Kong, China.

- Co-Chair, Program Committee, *Computer Graphics Workshop 2013 (CGW2013)*, July 11-12, 2013, Hsinchu, Taiwan.

- Member, Conference Advisory Board, *CAD'13*, June 23-25, 2013, Italy.

- Member of Editorial Board, *Journal of Computer Aided Drafting, Design and Manufacturing*, January, 2012 - present.

- Member, Program Committee, *Computer Graphics Workshop 2012 (CGW2012)*, July 12-13, 2012, Nanto, Taiwan.

- Member, International Program Committee, *30th Computer Graphics International Conference 2012 (CGI'12)*, June 12-15, 2012, Bouremouth, United Kingdom.

- Member, Conference Advisory Board, *CAD'12*, June 11-14, 2012, Niagara Fall, Canada.

- Member, Program Committee, *12th International Conference on Computer Aided Design and Computer Graphics (CAD/Graphics 2011)*, September 15-17, 2011, Jinan, P.R.C.

- Member, Program Committee, *2011 SIAM/ACM Joint Conference on Geometric and Physical Modeling*, October 24-27, 2011, Orlando, Florida, USA.

- Conference Co-Chair, *CAD'11*, June 27-30, 2011, Taipei, Taiwan

- Member, International Program Committee, *29th Computer Graphics International Conference 2011 (CGI'11)*, June 12-15, 2011, Ottawa, Canada.

- Member, Conference Program Committee, *International Conference on Computer Applications and Computational Science (CACS 2010)*, December 4-6, 2010, Singapore.

- Member of Editorial Board, *ISRN Applied Mathematics*, December, 2010 - present.

- Member, Program Committee, *7th International Conference on Computer Graphics, Imaging and Visualization 2010 (CGiV2010)*, August 7-10, 2010, Sydney, Australia.

- Member, Conference Program Committee, *Computer Graphics Workshop (CGW2010)*, July 15-16, 2010, Hsinchu, Taiwan.

- Member, International Program Committee, *28th Computer Graphics International Conference 2010 (CGI'10)*, June 9-11, 2010, Singapore.

- Member, Program Committee, *14th ACM Symposium on Solid and Physical Modeling (2010)*, September 1-3, 2010, Haifa, Israel.

- Member, International Program Committee, *11th IASTED International Conference on Computer Graphics and Imaging (CGIM 2010)*, February 17-19, 2010, Innsbruck, Austria.

- Member, Conference Advisory Board, *CAD'10*, June 21-25, 2010, Dubai, United Arab Emirates.

- Member, Conference Program Committee, *Computer Graphics Workshop (CGW2009)*, July 23-24, 2009, Taipei, Taiwan.

- Member, Conference Program Committee, *6th International Conference on Graphics, Imaginging and Visualization (CGIV09)*, August 11-14, 2009, Tianjin, China.

- Member, Program Committee, *2009 SIAM/ACM Joint Conference on Geometric and Physical Modeling*, October 4-8, 2009, San Francisco, California, USA.

- Member, Conference Program Committee, *Shape Modeling International (SMI'09)*, June 26-28, 2009, Tsinghua University, Beijing, China.

- Member, Conference Advisory Board, *CAD'09*, June 8-12, 2009, Reno, Nevada.

- Member, International Program Committee, *13th ACM Symposium on Solid and Physical Modeling (2008)*, June 2-4, 2008, Stony Brook, New York.

- Member, Conference Advisory Board, *CAD'08*, June 23-27, 2008, Orlando, Florida.

- Member, Program Committee, *Geometric Modeling and Processing 2008*, April 23-25, 2008, Hangzhou, P.R.C.

- Member, International Program Committee, *10th IASTED International Conference on Computer Graphics and Imaging (CGIM 2008)*, February 13-15, 2008, Innsbruck, Austria.

- Member, International Program Committee, *Pacific Graphics 2007 (PG 2007)*, Oct. 29 - November 2, 2007, Maui, Hawaii.

- Member, International Program Committee, *10th International Conference on Computer Aided Design and Computer Graphics (CAD/Graphics 2007)*, October 15-18, 2007, Beijing, P.R.C.

- Member, Program Committee, *25th Computer Graphics International Conference (CGI 2007)*, May 30-June 2, 2007, Petropolis, Brazil.

- Member, Program Committee, *6th IFIP International Conference on Entertainment Computing 2007 (ICEC2007)*, September 20-22, 2007, Shanghai, P.R.C.

- Member, Program Committee, *11th ACM Symposium on Solid and Physical Modeling 2007*, June 4-6, 2007, Tsinghua University, Beijing, P.R.C.

- Member, Conference Advisory Board, *CAD'07*, June 25-29, 2007, Honolulu, Hawaii.

- Member, Program Committee, *IASTED International Conference on Computer Graphics and Imaging (CGIM 2007)*, February 13-15, 2007, Innsbruck, Austria.

- Member, Program Committee, *IASTED International Conference on Graphics and Visualization in Engineering (GVE 2007)*, January 3-5, 2007, Clearwater, Florida.

- Panelist, *NSF Career Award Proposal Review Panel*, October 23, 2006.

- Member, Program Committee, *International Symposium on Information and Computational Science (ISICS 2006)*, August 15-18, 2006, Dalian, P.R.C.

- Member of Editorial Board, *Journal of Computer Aided Design and Computer Graphics*, July, 2006 - present.

- Member, Program Committee, *Geometric Modeling and Processing '2006*, July 26-28, 2006, Pittsburgh, USA

- Member, Program Committee, *24th Computer Graphics International Conference (CGI 2006)*, June 26-28, 2006, Hangzhou, P.R.C.

- Member, Conference Advisory Board, *CAD'06*, June 19-23, 2006, Phuket Island, Thailand.

- Editor, *Journal of Mathematical Analysis and Approximation Theory*, November, 2005 - July, 2008.

- Reviewer, *NSF Applied Math Program Proposal*, March, 2005.

- Member, Program Committee, *CAD/Graphics 2005 (CAD/CG 2005)*, Dec. 7-10, 2005, Hong Kong, P.R.C.

- Member, Program Committee, *Pacific Graphics 2005 (PG 2005)*, Oct. 12-14, 2005, , Macao, P.R.C.

- Member of Editorial Board, *Computer Aided Design & Applications*, January, 2005 - present.

- Member, Conference Advisory Board, *CAD'05*, June 6-10, 2005, Bankok, Thailand.

- Reviewer, *NSF Career Award Proposal*, November, 2004.

- Editor, *Journal of Information and Computational Science*, August, 2004 - August, 2009.

- Member, Program Committee, *IASTED International Conference on Computers Graphics and Imaging (CGIM 2004)*, August 16-18, 2004, Kauai, Hawaii, USA.

- Invited Minisymposium Speaker (Topic: Subdivision Depth Computation and Adaptive Subdivision of Catmull-Clark Subdivision Surfaces), SIAM Conference on Geometric Design and Computing, November 10-13, 2003, Seattle, Washington.

- Member, Program Committee, *Geometric Modeling and Processing '2004*, April 13-15, 2004, Beijing, P.R.C.

- Member, Conference Advisory Board, *CAD'04*, May 24-28, 2004, Pattaya Beach, Pattaya, Thailand.

- Member, Program Committee, *Pacific Graphics 2003 (PG 2003)*, Oct. 8-10, 2003, Canmore, Alberta, Canada.

- Member, Program Committee, *Geometric Modeling and Processing '2002*, July 10-12, 2002, Tokyo, Japan.

- Panelist, *NSF Engineering Design Proposal Review Panel*, April, 2002.

- Panelist, *NSF Engineering Design Proposal Review Panel*, December, 2000.

- Member, Program Committee, *Geometric Modeling and Processing '2000* (combination of the biannual Constructive Solid Modeling conference in United Kingdom and the bi-annual Geometric Modeling and Processing workshop in Korea), April 10-12, 2000, Hong Kong.

- Session chair, *Flexible Automation & Intelligent Manufacturing Automation*, June 26-28, 2000, University of Maryland, College Park, Maryland.

- Member, Organizing Committee, *Twenty-Eighth North American Manufacturing Research Conference*, May 23-26, 2000, Lexington, Kentucky.

- Panelist, *NSF Career Award Proposal Review Panel*, November, 1999.

- Organizer, *6th SIAM Conference on Geometric Design session*, November 2-5, 1999, Sheraton Old Town Hotel, Albuquerque, New Mexico.

- Specialist referee, *Ohio Board of Regents*, Higher Education Information Project (HEI, formerly BORIS) and Higher Education Funding Commission, Columbus, Ohio, 12/1996-present.

- Panelist, *NSF Career Award Proposal Review Panel*, January, 1997.

- Organizer, *Workshop on 'Computer Aided Geometric Modeling'*, Tsinghua University, Hsinchu, Taiwan, R.O.C., July 15 - 19, 1996.

- Member, Coordinating Committee, *19th CAPASUS Conference*, June 23-25, 1995, Atlanta, Georgia.

- Project Director, *Intelligent Dental Care CAD/CAM System (IDCS) research project (9/93-8/94)*, Olympus Optical Co., Japan, responsible for system framework development.

- Specialist referee, *University and Polytechnic Grants Committee, Research Grants Council*, Hong Kong, 1993-present.

- Member, Program Committee, *Workshop on Synthetic Worlds*, December 13-17, 1994, Aizu-Wakamatsu, Japan.

- Organizer, *session "Computation, Tessellation, and Modeling of NURB Surfaces"*, SIAM Conference session on Geometric Design, November 1-5, 1993, Radisson Hotel, Tempe, Arizona.

- Organizer, *Workshop on 'Advanced Topics in Computer Graphics and Geometric Modeling'*, Tsinghua University, Hsinchu, Taiwan, R.O.C., August 3 - 7, 1992.

- Committee member, *Computer Science Division, Senior Government Officer Examination*, Taiwan, R.O.C., 1984.

- Associate Editor, *Scientific Eyes*, Taipei, Taiwan, R.O.C., 1984-1986.

- Referee:

  National Science Foundation; Computer Aided Design; ACM Trans. on Graphics; Computer Graphics (SIGGRAPH), ACM Solid Modeling Conferences; International J. for Numerical Methods in Engineering; International J. of Computational Geometry and Applications; J. of Approximation Theory; Computer Vision, Graphics, and Image Processing; IEEE Trans. on Visualization & Compputer Graphics; J. of Math. Analysis and Applications; University Grants Council of Hong Kong; Computers and Mathematics with Applications

Professional Associations:

Association for Computing Machinery (ACM), ACM SIGGRAPH, IEEE Computer Society, Society for Industrial and Applied Mathematics (SIAM), SIAM Activity Group on Geometric Design, American Society of Mechanical Engineers (ASME)

Supervision:

Undergraduate Research Assistants:

- Luis Velez, Collaborative CAD, 6/4/01-8/3/01.

- Ricardo Baratto, Collaborative CAD, 6/1/99-8/31/99.

- Billy Mullins, Collaborative CAD, 9/1/97-7/30/98.

- Tim Lok, Collaborative CAD, 1/15/97-5/31/98.

- Chris Wells, Collaborative CAD, 1/15/97-12/31/98.

- Chris Crocket, Collaborative CAD, 1/15/97-8/31/98.

- Mike Partington, Collaborative CAD, 1/15/97-5/5/97.

- Russell Hampton, Collaborative CAD, 1/15/97-/6/31/97.

- Aaron Dossett, Collaborative CAD, 1/15/97-5/5/97.

Visiting Scholars:

- Qingbo Cai, PhD, School of Mathematics and Computer Science, Quanzhou Normal University, Quanzhou, Fujian, P.R.C. Supervising period: 3/1/2019 - 2/28/2020.

- Xiaojuan Tong, PhD, Dept of Computer Science, Guangxi University of Finance and Economics, Nanning, Guangxi, P.R.C. Supervising period: 12/1/2018 - 11/30/2019.

- Fan Zhang, Dept of Computer Science, Shandong University, Jinan, Shandong, P.R.C. Supervising period: 9/1/2012 - 10/31/2014.

- Xiaoming Zeng, PhD, Dept of mathematics, Xiamen University, P.R.C. Supervising period: 9/1/02-11/30/02.

- Xianxu Meng, PhD, College of Computer Science and Engineering, Shandong University, P.R.C. Supervising period: 8/17/01-11/16/01.

- Qi Duan, Dept of Applied mathematics, Shandong University of Technology, Jinan, Shandong, P.R.C. Supervising period: 7/1/89-12/31/89, 8/1/96 - 5/1/97.

PhD and Postdoctoral Advisees:

- Anastasia Kazadi, *Metricc reconstruction of 3D objects from a single or two views*, May 2021 (expected graduation date).

- Jianzhong Wang, *Smoothing and Fairing of Subdivision Surfaces*, August 2015.

- Alice Lin, *Modeling and Simulation Techniques for Human Faces and Heads*, November 2012. (currently with Marshall University, West Virginia)

- Jianbao Wu, Ph.D., Mathematics, University of Georgia, Athens, Georgia, August 2007. Supervising period: 7/1/07 - 6/30/08. currently with ICES, Canada)

- Fengtao Fan, *Shape Reconstruction using Subdivision Surfaces*, 9/06-8/10. (left after past the qualify exam. currently with the Ohio State University, Ohio)

- Shuhua Lai, *Subdivision Surface based One-Piece Representation*, September 2006. (currently with Georgia Gwinnette College, Georgia)

- Junhai Yong, Ph.D., College of Computer Software, Tsinghua University, Beijing, P.R.C., September 2000. Supervising period: 11/1/00 - 9/30/02. (currently with Tsinghua University, Beijing, P.R.C.)

- Pifu Zhang, Ph.D., Mechanical Engineering (Computer Aided Design), University of Hunan, Changsha, Hunan, china, July, 1998. Supervising period: 9/1/98 - 12/31/00. (currently with Dalhousie University, Halifax, Canada)

- Caiming Zhang, Ph.D., Computer Science, Tokyo Institute of Technology, Tokyo, Japan, December, 1994. Supervising period: 8/1/97 - 12/31/99. (currently with Shandong University, P.R.C.)

- William E. Toll, *Point Based Approaches in Graphics*, December 1998. (currently with Taylor University, Indiana)

- Huaijun Wu, Ph.D., Computer Science, Tsinghua University, Beijing, P.R.C., June, 1997. Supervising period: 9/1/97 - 7/31/98. (currently with AutoDesk Research)

- Yong Zhou, Ph.D., Computer Science, Tsinghua University, Beijing, P.R.C., June 1, 1995. Supervising period: 8/95 - 7/96. (currently with Northrop Grumman Information Systems)

- Xuefu Wang, Ph.D., Computer Science, Tsinghua University, Beijing, P.R.C., July 1994. Supervising period: 8/94 - 1/97. (currently with Google)

- Ai-ping Bien, *Blending Techniques for Parametric Surfaces*, 9/90-8/92. (left after past the qualify exam. currently with Computer Vision)

- Jenn-Hua Lee, *Shape Control and Shape Preserving with Interpolating Bezier Curves and Surfaces* (co-advised with Prof. Shinian Yang), July, 1989. (currently with Yuantze University, Taiwan, R.O.C.)

Master's Project/Thesis Advisor:

- Seifalla Moustafa, *New technique to design C2-smooth Catmull-Clark subdivision surfaces for computer aided geometric design applications*, Masters thesis, May 2019 (expected graduation date)

- Conglin Huang, *Patient Mouth Reproduction using Cylindrical Mirror*, Masters thesis, April 2009. (currently with Fruit of the Loom/Russell Athletic, Bowling Green, KY)

- Jiaxi Wang, *Parametrization of Doo-Sabin Subdivision Surfaces*, Masters thesis, March 2008. (currently with Lexington Software Co.)

- Gang Chen, *Subdivision Depth Computation for Extra-ordinary Patches*, Masters Thesis, December 2005.

- Jidong Qu, *Shape Modeling using Subdivision Surfaces*, Masters project, March 2005 (currently with Martek BioScience Corp, Winchester, KY).

- Shiping Zou, *Constrained Scaling of Catmull-Clark Subdivision Surfaces*, Masters thesis, February 2004 (currently with University of Virginia Hospital).

- Khageshwar Thakur, *Shadow Generation Techniques*, May 2002, (currently with LexMark, Lexington, KY)

- Ravichandran Mohamed, *Information Storage for GeoWebCad*, Masters project, April 2001. (currently with Lucent Technologies, Hyannis, MA)

- Shirish Pande, *Real-Time Highlight Generation for Local Deformation*, Masters project, April 2002.

- Alice J. Lin, *Outline Generation for 3D Polyhedra*, Masters project, September 2000.

- Rong Xing, *A Collaboration Model for Collaborative CAD*, Masters project, June 2000. (currently with Ticbo, California)

- Zheng Zhang, *Collaborative CAD: Conceptual model and implementation*, Masters project, April 1999. (currently with HP in Cupertino, California)

- Tom Whalen, *Parallel Polygon Rendering Using An Additional Redistribution*, Masters project, April 1999. (currently with Structural Dynamics Research Corporation (SDRC), Milford, Ohio)

- W. Jack Goh, *Infrastructure of Collaborative CAD on Web*, Masters project, February 1999. (currently in Singapore)

- Songwen Xie, *A 3D Input Interface for a Shape Design Environmen*, Masters Project, April 1996. (currently with Cincinnatti Bell Information Systems)

- Gang Li, *Volume Rendering: A Survey*, Masters Thesis, April 1995. (currently with Insci-statements.com, MA)

- Kai Zhao, *The Theory of Formal Concept Analysis and Its Applications*, Master Thesis (outside committee member), Dept. of Computer Science, National University of Singapore, February 1995.

- Yihong Feng, *Parallel Scan Conversion based on Vertex Label Assignment*, Master's Project, November 1993.

- Aniruddha B. Deglurkar, *Rendering of Trimmed NURB Surfaces*, Master's Thesis, August 1993. (currently with Verity)

- Weihua Lee, *2D Shape Design Based on Curve Interproximation Technique*, Masters Project, June 1993 (currently with Maxxar, Michigan).

- Sundar Kingsley, *Ray Tracing Medical Images*, Masters project, August 1993. (currently running his own company PavSoft Solutions, Inc., Cockeyesville, Maryland 21030)

- Feng Luo, *A Parallel Mesh Subdivision Generator based on Vertex Label Assignment*, Masters' project, June 1993.

- Atcharavan Vajarapong, *A Post Processor for Surface Tessellation Using Z-Buffer Method*, Masters Project, May 1993.

- Thomas Papanicolaou, *Scattered Data Interpolation and Smooth Surface Fitting*, Masters project, December 1992. (currently with UK LCC as an Associate Professor of computer sicence)

- Paul DeLetter, *XTD: X Windows Three Dimensional Viewing Program, Version 1.3*, Masters Thesis, January 1991. (currently with IBM)

- Hong-De Luo, *Three Dimensional Visualization of Computational Fluid Dynamics*, Masters Project, January 1991.

- Sreenath Shama, *Shadow Generation and Shading of Three Dimensional Objects*, Masters Thesis, June 1991. (currently with Security First Technologies)

- Munish Mehra, *Domain Subdivision for Mesh Generation and its Application in Modeling Objects Composed of 3D Free-Form Surfaces*, Master Thesis, May 1991. (currently with MIMC International Medical Consultants, Washington, D.C.)

- Pramod Hangal, *A Hidden Line Elimination Algorithm for Wireframe Objects*, Masters Project, 1990.

- Dinh Tran, *Implementation of a Character Recognition System using Polar Representation of Planar Shapes*, Masters Project, June 1989.

- Yu-Kuo Yen, *An Optimal Design of the Generation and Display of Pictures*, Masters Thesis, May 1986.

- Ming-Kuan Chang, *Algorithms for Finding the Intersection of 3D Surfaces*, Masters Thesis, May 1986.

- Ming-Lian Huang, *Automatic Contour Tracing: Survey & New algorithms*, Masters Thesis, May 1986.

- Meng-Yan Lin, *An Algorithm for Computing the Intersections of 3D Polygons*, Masters Thesis, May 1986.

- Ing-Zhe Yang, *Realistic Display of 3D Objects*, Masters Project, May 1986.

- Ying-Ming Lin, *An algorithm to Cover Convex Polygons by Rectangles*, Masters Thesis, May 1986.

- Chi-Cheng Lin, *Clipping of Bezier Curves and Surfaces*, Masters Thesis, May 1985.

- Chio-Hsin Wang, *Clipping of Parametric Curves and Surfaces*, Masters Thesis, June 1985.

- Jun-Chi Hu, *PC-MITHRAS, Part I: Graphical Output of Geometric Design and Graphics Kernel System*, Masters Thesis, May 1985.

- Chen-Hung Hsu, *PC-MITHRAS, Part II: Internal System Design of Geometric Data Structures and Graphics Kernel System*, Masters Thesis, May 1985.

- Chien-Ting Wu, *Cut Operation in Free Form Surface Modeling*, Masters Thesis, May 1984.

- Jenn-Hua Lee, *An Interactive Freeform Modeling System, Part I: Object and Picture Design*, Masters Thesis, May 1984.

- Chiao Lin, *A Hidden Line Elimination Algorithm for Polyhedra*, Masters Thesis, May 1984.

- Lee Ding, *A Study of the Geometric Properties of Bezier and B-Spline Curves*, Masters Thesis, May 1984.

- Wen-Chuan Liao, *Subdivision and Joining of Bezier Curves and Surfaces*, Masters Thesis, May 1984.

- Ai-Ping Bien, *Alternate Spline: A Generalized B-spline*, Masters Thesis, May 1984.

Courses Taught:

- *Graduate Courses:* Computer Animation; Computer Graphics; Computer-Aided Design; Special Topics in Graphics; Numerical Analysis

- *Undergraduate Courses:* Graphics,Interfaces & Multimedia; Data Structures; Algorithm Design & Analysis; File Processing; Numerical Methods; Logic and Theory of Computing; Discrete Math

Invited Talks/Presentations:

- One-step Bicubic Interpolation, Xiamen University, Xiamen, China, March 16, 2015.

- 3D Image Generation, Xiamen University, Xiamen, China, November 27, 2010.

- 3D Image Generation, Shandong University, Jinan, China, November 24, 2010.

- 3D Image Generation, Tsinghua University, Beijing, China, November 22, 2010.

- STMIS - Digital 3D Contents Generator, Chung-Yuan Christian University, Chungli, Taiwan, October 30, 2009.

- Similarity based Interpolation for Meshes of Arbitrary Topology, University of Victoria, Victoria, Canada, February 27, 2008.

- Similarity based Interpolation using Catmull-Clark Subdivision Surfaces, University of Hong Kong, November 24, 2007.

- Locally Adjustable Interpolation for Meshes of Arbitrary Topology, Hong Kong University of Science and Technology, November 21, 2007.

- Subdivision Surface based Modeling, Oklahoma State University, March 5, 2007.

- Track of the Past and Vision for the Future, University of Toledo, February 23, 2007.

- Research Overview, Departmental Vision and Teaching/Administrative Philosophy, University of Arkansas, January 19, 2007.

- October 9, 2006.

- Near-Optimum Adaptive Tessellation of General Catmull-Clark Subdivision Surfaces, Tsinghua University, Beijing, P.R.C., July 1, 2006.

- Near-Optimum Adaptive Tessellation of General Catmull-Clark Subdivision Surfaces, Shandong University of Economics, Jinan, P.R.C., June 30, 2006.

- Near-Optimum Adaptive Tessellation of General Catmull-Clark Subdivision Surfaces, Shandong University, Jinan, P.R.C., June 29, 2006.

- Near-Optimum Adaptive Tessellation of General Catmull-Clark Subdivision Surfaces, Ocean University of China, Qingdao, P.R.C., June 28, 2006.

- Near-Optimum Adaptive Tessellation of General Catmull-Clark Subdivision Surfaces, Xiamen University, Xiamen, P.R.C., June 25, 2006.

- Subdivision Surface based Shape Design, McMaster University, Canada, April 17-19, 2006.

- Subdivision Surface based Shape Design, University of Missouri, Columbia, March 8-10, 2006.

- Tessellation, Fairing, Shape Design and Trimming Techniques for Subdivision Surface based Modeling, 2005 NSF Design, Service and manufacturing Grantees and Research Conference, January 3-7, 2005, Scottsdale, Arisona.

- Constrained Scaling of Catmull-Clark Subdivision Surfaces, State University of New York at Stony Brook, August 10, 2004.

- Subdivision Surface based one-piece representation II, NSF/DARPA CARGO Annual Review Meeting, Madison, Wisconsin, May 18-20, 2004.

- Parametrization and Evaluation of Catmull-Clark Subdivision Surfaces, International Workshop on Geometric and Visual Computing, April 18-20, 2004, Jinan, P.R.C.

- Constrained Scaling of Subdivision Surfaces, 2004 NSF Design, Service and manufacturing Grantees and Research Conference, January 5-8, 2004, Dallas, Texas.

- Subdivision Depth Computation and Adaptive Subdivision of Catmull-Clark Subdivision Surfaces, SIAM Conference on Geometric Design and Computing, Minisymposium, November 10-13, 2003, Seattle, Washington

- Constrained Scaling of Catmull-Clark Subdivision Surfaces, 2003 Pacific Workshop on Geometric Modeling, University of Calgary, October 7, 2003, Calgary, Canada.

- Subdivision Surface based one-piece representation I, NSF/DARPA CARGO Annual Review Meeting, Santa Rosa, California, May 12-14, 2003.

- Constrained Design, Streamline Modeling, Automatic Fairing and Automatic Joining Techniques for NURB Surfaces III, *Proc. 2003 NSF Design, Service and manufacturing Grantees and Research Conference*, January 6-9, 2003, Birmingham, Alabama.

- Constrained Design, Streamline Modeling, Automatic Fairing and Automatic Joining Techniques for NURB Surfaces II, *Proc. 2002 NSF Design, Service and manufacturing Grantees and Research Conference*, January 7-10, 2002, Puerto Rico.

- Constrained Design, Streamline Modeling, Automatic Fairing and Automatic Joining Techniques for NURB Surfaces I, *Proc. 2001 NSF Design, Service and manufacturing Grantees and Research Conference*, January 7-10, 2001, Tampa, Florida.

- Smooth Surface Connection with Tension Control, Shandong University, Jinan, P.R.C., June 16, 2000.

- Smooth Surface Connection with Tension Control, Xiamen University, Xiamen, P.R.C., June 14, 2000.

- Smooth Surface Connection with Tension Control, Tsinghua University, Beijing, P.R.C., June 11, 2000.

- The GEO-WEB-CAD project III - Synchronization Mechanism in WebCAD, *Proc. 2000 NSF Design and manufacturing Grantees Conference*, January 5-8, 2000, Vancour, Canada.

- Constrained Scaling of Trimmed NURBS Surfaces, *Proc. 1st Honda Initiation Grant Symposium*, May 20-21, 1999, Columbus, Ohio.

- Issues in shape design: constrained surface scaling, surface fairing, and constrained surface design - from questions to solutions, Ford Research Lab., Dearborn, Michigan, May 12, 1999.

- Research results in: (1) constrained scaling of trimmed NURBS surfaces, (2) removing shape irregularities by modifying highlight lines, and (3) a unified approach for blending, smoothing and interpolation, Structural Dynamics Research Co. (SDRC), Mildford, Ohio, March 24, 1999.

- Geometric/Solid Modeling and Their Applications, Keynote speaker, Annual Symposium in Mathematical Sciences, Eastern Kentucky University, Richmond, Kentucky, February 26, 1999.

- The GEO-WEB-CAD project II, *proc. 1999 NSF Design and manufacturing Grantees Conference*, January 5-8, 1999, Los Angels

- Triangular Patch Modeling Using Combination Method, Fudan University, Shanghai, P.R.C., May 24, 1998.

- Triangular Patch Modeling Using Combination Method, Zhejiang University, Hongzhou, P.R.C., May 21, 1998.

- Triangular Patch Modeling Using Combination Method, University of Hong Kong, Hong Kong, May 13, 1998.

- New Computation Techniques for Shape Modeling and Design III, *Proc. 1998 NSF Design and Manufacturing Grantees Conference*, January 5-8, 1998, Monterrey, Mexico.

- The GEO-WEB-CAD project I, *Proc. 1998 NSF Design and Manufacturing Grantees Conference*, January 5-8, 1998, Monterrey, Mexico.

- Blending, Smoothing and Interpolation of Irregular Meshes Using N-sided Varady Patches, Hong Kong University of Science & Technology, Hong Kong, March 11, 1997.

- A New Technique of Designing High Quality Smooth Surfaces for Industrial CAD Applications, Ford Research Lab., Dearborn, Michigan, March 5, 1997.

- Shape Design with Physical Constraints, University of California, Davis, CA, January 6, 1997.

- New Computation Techniques for Shape Modeling and Design II, *Proc. 1997 NSF Design and manufacturing Grantees Conference*, January 7-10, 1997, Seattle, WA.

- Speaker of a 5-day Workshop on 'Geometric Modeling', Tsinghua University, Hsinchu, Taiwan, R.O.C., July 15 - 19, 1996.

- New Computation Techniques for Shape Modeling and Design, *Proc. 1996 NSF Design and Manufacturing Grantees Conference*, January 2-5, 1996, Albuquerque, NM.

- Boundary Representation, Intersection, and Evaluation of NURB Based Non-Manifold CSG Objects, University of Hong Kong, Hong Kong, May 30, 1995.

- Hermite Interpolation with Tension Control and Optimal Twist Vectors, Shandong University of Technology, Jinan, P.R.C., May 22, 1995.

- Rendering of Trimmed NURB Surfaces, University of Tokyo, Tokyo, Japan, November 18, 1993.

- Speaker of a 3-day Workshop on 'Advanced Topics on Graphics and Geometric Modeling', Tsinghua University, Beijing, P.R.C., August 12 - 16, 1992.

- Surface and Mesh Generation using Label-Driven Subdivision, IBM Kingston Graphics Lab., New York, November 28, 1990.

- Label-Driven Subdivision and Its Applications, University of Maryland, Washington, D.C., November 29, 1990.

- Label-Driven Subdivision: A new technique in computer graphics and CAD, University of Alberta, Edmonton, Alberta, Canada, April 30, 1990.

- (a) Automatic Mesh Generation Based on Vertex Label Assignment Scheme, (b) Fitting Using Bezier Curves and Surfaces with Tension Control, University of Shandong, Jinan, Shandong, P.R.C., June, 1988.

- Free-Form Surface Modeling, Workshop on Engeering Analysis and Computer-Aided Design, University of Taiwan, Taipei, Taiwan, R.O.C., July 22-26, 1985.

- Bezier Curve Generator - the Fitst step towards a Geometric Engine, First workshop on Hardware Design based upon Algorithms, Tsinghua University, Hsinchu, Taiwan, R.O.C., 1985.

Service:

University:

- University Faculty Senator (representing the College of Engineering), August 16, 2006 - August 15, 2008.

- University Faculty Senator (representing the College of Engineering), August 16, 2004 - August 15, 2006.

- Faculty Advisor, University of Kentucky Chinese (Taipei) Students Association, 1996-1997.

- Faculty Advisor, University of Kentucky Chinese Alliance for Democracy, 1991-1992.

- Faculty Advisor, University of Kentucky Chinese (P.R.C.) Students Association, 1991-1992.

- Faculty Advisor, University of Kentucky Chinese (Taipei) Students Association, 1989-1990.

Department:

- Member, Graduate Committee, 2016-2017.

- Member, Executive and Graduate Committees, 2015-2016.

- Member, Graduate and Media and Outreach Committees, 2014-2015.

- Member, Media and Outreach Committee, 2012-2013.

- Member, ABET Committee, 2004-2007.

- Member, Search Committee, 2002-2003.

- Member, Search Committee, 1996-1997.

- Member, Graduate Committee, 1994-2002

- Member, Chairman Search Committee, 1993.

- Graduate Committee, 1991-1992.

- Chair, Equipment Committee, 1989-1990.

- Undergraduate Curriculum Committee, 1988-1989.

- Equipment Committee, 1988-1989.

- Graduate Curriculum Committee, 1987-1988.

- Search Committee, 1987-1988.

Research Support:

Funded grants:

1. *Approximation Theory based Methods for Curve and Surface Modeling* (Co-PI), NNSFC (NSFC-61572020), 1/1/2016-12/31/2019, RMB$470,000 (US$78,333).

2. *A Study of Multi-Scale Representation and Computation Model for 3D Maxillofacial Surgery Simulation* (PI), NSC (Taiwan, ROC) (NSC-100-2218iE-007-014-MY3), 8/1/2011 - 7/31/2014, NTD$2,583,000 (US$86,100).

3. *A Study of Some Problems of Approximation and Convergence on Curve and Surface Modeling* (Co-PI), NSF of China (NSFC-61170324), 1/1/2012-12/31/2015, RMB$500,000 (US$83,333).

4. *Multi-Scale Modeling for 3D Maxillofacial Surgery Simulation* (PI), Chang-Tsing Grant, National Tsinghua University (101N2756E1), 1/1/2012-12/31/2012, NTD$500,000 (US$16,900).

5. *Research on Key Technologies in Medical Image Segmentation* (Co-PI), NSF of China (NSFC-61020106001), 1/1/2011-12/31/2014, RMB$1,700,000 (US$257,000).

6. *Portable Digital Mouth and Occlusion Reproducer* (PI), Kentucky Sciece & Technology Corporation (CIF-712-COM), 4/1/2007-9/30/09, $150,000.

7. *On New Algorithms of Curve and Surface Modeling Based on the Probabilistic Type Operators and Probability Distribution* (Co-PI), NSF of China (NSFC-10571145), 01/01/2006-12/31/2008, RMB$280,000 (US$35,000).

8. *Tessellation, Fairing, Shape Design, and Trimming Techniques for Subdivision Surface based Modeling* (PI), NSF (DMI-0422126), 9/1/04-8/31/08, $300,000.

9. *Subdivision Surface based One-Piece Representation* (PI), NSF (DMS-0310645), 7/1/03-6/30/06, $99,941.

10. *Web Based Collaborative CAD* (PI), NSF (DMI-0118124), 4/1/01-3/31/02, $50,000.

11. *Constrained Design, Streamline Modeling, Automatic Fairing and Automatic Joining Techniques for NURB Surfaces* (PI), NSF (DMI-9912069), 5/1/00-4/30/04, $343,067.

12. *Constrained Surface Modification II: Constrained Shape Scaling of Multi-Patch NURB Surfaces* (PI), Honda Initiation Grant Program (462586), 12/1/98-11/30/99, $25,000. (No overhead)

13. *Constrained Surface Modification I: Constrained Shape Scaling of NURB Surface Patches* (PI), Honda Initiation Grant Program (461086), 8/1/97-7/30/98, $25,000. (No overhead)

14. *Creating High Quality Manufacturable Free-Form NURBS Surfaces Using Constrained Optimization* (PI), Ford Research Lab (5-37075), 6/1/97-5/31/00, $150,000. (No overhead)

15. *The GEO-WEB-CAD Project* (PI), NSF (INT-9722728), 2/15/1997-2/14/00, $102,522.

16. *Tele-Collaborative Geometric Modeling over Internet* (joint research with University of Aizu, Japan; USA PI: Fuhua Cheng; Japanese PI: Kenjiro Miura), Japanese Ministry of Education, 9/96-8/98, 3,054,000Yen ($30,540).

17. *New Computation Techniques for Shape Modeling and Design* (PI), NSF (DMI-9400823), 8/15/94-7/31/97, $270,000.

18. *Building a Non-Manifold Modeling System with a Virtual Environment Interface* (PI), Center for Robotics and Manufacturing Systems, Kentucky, 7/1/95-6/31/96, $8,000.

19. *IDCS: An Intelligent Dental Care CAD/CAM System* (Co-PI), Year one, Olympus Optical Co., Tokyo, Japan, 10/1/93 - 9/30/94, 51,652,000 yen ($511,406).

20. IBM Advanced Workstations and Systems Division (PI), *equipment support (RISC System/6000 Model 730 Workstation)*, 1992-1993.

21. *Tessellation of Trimmed NURB Surfaces* (PI), IBM Advanced Workstations and Systems Division (FBM090), 9/1/91 - 9/31/92, $40,527.

22. *Polygon Filling based on Vertex Classification* (PI), Center for Computational Sciences, University of Kentucky, 7/1/90 - 6/30/91, $12,000.

23. *Parallel 2D & 3D Finite Element Mesh Generation* (PI), Center for Robotics and Manufacturing Systems, Kentucky (32-BV1), 3/1/90 - 2/28/91, $26,287.

24. *Depth Perception Via Stereo Focusing* (Co-PI), Center for Robotics and Manufacturing Systems, Kentucky (24-BV1), 7/1/87 - 6/31/88, $57,481.

25. *Computer-Aided End Game Simulation III* (PI), Chung-Shan Institute of Science and Technology, Taiwan, R.O.C., 9/1/85 - 8/31/86, NT$2,436,200 ($90,229).

26. *Automatic Finite Element Mesh Generator* (PI), Electronics Research & Service Organization, Industrial Technology Research Inst., Taiwan, R.O.C. (TH-ERSO-74-11), 9/1/85 - 8/31/86, NT$580,800 ($21,511).

27. *PC-MITHRAS: A 3D Free-Form Surface Modeling System* (PI), National Science Council, Taiwan, R.O.C. (NSC-74-0611-E007-01), 6/1/85 - 5/31/86, NT$170,500 ($6,315).

28. *MITHRAS: An Interactive 3D Free-Form Surface Modeling System* (PI), National Science Council, Taiwan, R.O.C. (NSC-73-0404-E007-07), 12/1/84 - 11/30/85, NT$433,000 ($16,037).

29. *Computer-Aided End Game Simulation II* (PI), Chung-Shan Institute of Science and Technology, Taiwan, R.O.C. 9/1/84 - 8/31/85, NT$2,481,995 ($91,925).

30. *New Algorithms for Hidden Line/Surface Removal* (PI), National Science Council, Taiwan, R.O.C. (NSC73-0404-E007-06), 10/1/83 - 9/30/84, NT$300,000 ($11,111).

31. *FIREBIRD, A Solid Modeling System* (PI), Electronics Research & Service Organization, Industrial Technology Research Inst., Taiwan, R.O.C. (TH-ERSO-72-07), 11/1/83 - 10/31/84, NT$758,400 ($28,088).

32. *Computer-Aided End Game Simulation I* (PI), Chung-Shan Institute of Science and Technology, Taiwan, R.O.C., 9/1/83 - 8/31/84, NT$2,185,344 ($80,938).

U.S. Patents:

1. Subdivision Surface Based Geometric Modeling System (SSM), US Patent No. 7,200,532 B2

2. Three-Dimensional Human-Computer Interaction System that supports Mouse Operations through the motion of a Finger and an Operation Method Thereof, US Patent No. 8,648,808 B2 (Date issued: February 11, 2014)

3. Three-Channel Reflector Imaging System, US Patent No. 8,964,004 B2 (Date issued: February 24, 2015)

4. Two-Parallel-Channel Reflector with Focal Length and Disparity Control I, US Patent No. 9,019,352 B2 (Date issued: April 28, 2015)

5. Two Parallel Channel Reflector with Focal Length and Disparity Control II, US Patent No. 9,019,603 (Date issued: April 28, 2015)

6. 3D pointing using one camera and three aligned lights, US Patent No. 9,201,519 (Date issued: December 1, 2015)

7. Three Dimensional (3D) Human-Computer Interaction System using Computer Mouse as a 3D Pointing Device and an Operation Method Thereof, US Patent No. 9,310,851 B2 (Date issued: April 16, 2016)

8. Algorithms, Software and an Interaction system that support the operation of an on the fly mouse, US Patent No. 9,507,437 B2 (Date issued: November 29, 2016)

9. Two-Channel Reflector based Single lens 2D/3D Camera with Disparity and Convergence Angle Control I, US Patent No. 9,557,634 B2 (Date issued: January 31, 2017)

10. 2D and 3D pointing device based on a passive lights detection operation method using one camera, US Patent No. 9,678,583 B2 (Date issued: June 13, 2017)

11. Two-Channel Reflector based Single lens 2D/3D Camera with Disparity and Convergence Angle Control II, US Patent No. 9,807,366 B2 (Date issued: October 31, 2017)

Pending U.S. Patent Applications

1. Direct 3D pointing using light tracking and relative position detection, US Patent Application No. 14/573,008

2. Absolute position 3D pointing using light tracking and relative position detection, US Patent Application No. 14/627,738

3. Folded Parallel-Light-Channel based Stereo Imaging System with Disparity and Convergence Angle Control, US Patent Application No. 15/591,695

Publication (Fuhua (Frank) Cheng):

Papers in Refereed Journals:

1. Virtual Reality Games to Promote Healthy Behavior Choices (with Alice Lin & Charles B. Chen), International Journal of Computer Trends and Technology, 54,3(2017), 133-139.

2. Determining Knots by Optimizing the Bending and Stretching Energies (with F. Zhang, X.Qin, and X. Li), Applied Mathematics - A Journal of Chinese Universities 32,1(2017), 53-67.

3. Explicit Construction of C2 Surfaces for Meshes of Arbitrary Topology (with S. Lai), Computer Aided Design & Applications 14,6 (2017), 1-10.

4. Game for Health Professional Education (with A. Lin and M. Chen), International Journal of Information and Education Technology 6,12 (December 2016), 972-975.

5. G2 Interpolation for Polar Surfaces (with J. Wang), Computer Aided Design & Applications 13,5 (2016), 610-617.

6. Construction of G3 Conic Spline Interpolation (with L. Ma, C. Zhang and X. Zhang), Computer Aided Design 71 (February 2016), 15-27.

7. Automatic PlacementArrangement of Underneath Bone Structures for 3D Facial Expressions and Animations (with A. Lin), Journal of Computers, 10,4 (July 2015), 229-236.

8. The Monitoring Technology for Latent Risk Population (with A. Lin), Computer Aided Design & Applications, 12,6 (April, 2015), 693-699.

9. A Heuristic Offsetting Scheme for Catmull-Clark Subdivision Surfaces (with J. Wang), Computer Aided Design & Applications, 12,6 (April, 2015), 765-771.

10. Modeling Three Dimensional Animated, Detailed, and Emotional Facial Expressions (with A. Lin), International Journal of Modelling and Simulation, Vol. 33, No. 1, 2013, pp. 47-53.

11. Fast Mesh Interpolation and Mesh Decomposition with Applications (with S. Lai), *International Journal of Image and Graphics*, 12(1), 2012, 1250006 (18 pages).

12. Approximate Geodesics on Smooth Surfaces of Arbitrary Topology (with Shuhua Lai), *Computer Aided Design & Applications*, 8(4),499-506 (2011).

13. First order absolute moment of Meyer-König and Zeller operators and their approximation for some absolutely continuous functions (with X. Zeng), Mathematica Slovaca, Vol. 61(4), pp.635-644 (2011).

14. Growth Simulation of Facial/Head Model from Childhood to Adulthood (with Alice Lin and Shuhua Lai), *Computer Aided Design & Applications*, 7(5),777-786 (2010).

15. Constructing G1 Quadratic Bezier Curves with Arbitrary End Point Tangent Vectors (with H.J. Gu, J.H. Yong and J.C. Paul), International Journal of CAD/CAM, Vol. 9, No. 1 (2009), 55-60.

16. Fast Spherical Mapping for Genus-0 Meshes (with S. Lai and F. Fan), *Lecture Notes in Computer Science*, Vol. 5876 (2009), Springer, 982-991.

17. Removing local irregularities of triangular meshes with highlight line models (with J.H. Yong, B.L. Deng, B. Wang, K. Wu, and H. Gu), Science in China, Series F: Information Science, 39,1 2009), Chinese Academy of Sciences, 1-11 (invited paper).

18. A Free Drawing Graphical Password Scheme (with Alice Lin), *Computer Aided Design & Applications*, 6(4), 553-561 (2009),

19. Loop Subdivision Surface based Progressive Interpolation (with F. Fan, S. Lai, C. Huang, J. Wang, and J. Yong), *Journal of Computer Science and Technology*, Vol. 24, No. 1, Springer, 2009, 39-46.

20. An Iterative Method for Fast Mesh Denoising (with S. Lai), *Lecture Notes in Computer Science*, Vol. 5359 (2008), Springer, 1034-1043.

21. Subdivision based Interpolation with Shape Control (with F. Fan and S. Lai), *Computer Aided Design & Applications*, 5,1-4 (2008), 539-547.

22. Curvature Computation for Triangular Meshes based on Local Parametrization (with C. Huang, S. Lai, F. Fan, J. Wang, C. Zhang), *Computer Aided Design & Applications*, 5,1-4 (2008).

23. Progressive Interpolation using Loop Subdivision Surfaces, (with F. Fan, S. Lai, C. Huang, J. Wang, J. Yong), *Lecture Notes in Computer Science*, Vol. 4975 (2008), Springer, 526-533.

24. Constructing Parametric Triangular Patches with Boundary Conditions (with H. Liu and J. Ma), *Progress in Natural Science*, 18,3 (March 2008), 315-322.

25. Locally Adjustable Interpolation for Meshes of Arbitrary Topology (with S. Lai), *Lecture Notes in Computer Science*, Vol. 4841 (2007), Springer, 88-97.

26. Parametrization of Quadrilateral Meshes (with L. Liu and C. Zhang), Lecture Notes in Computer Science, Vol. 4488 (2007), Springer, 17-24.

27. Robust and Error Controllable Boolean Operations on Free-form Solids Represented by Catmull-Clark Subdivision Surfaces (with S. Lai), *Computer Aided Design & Applications*, 4,1-4 (2007).

28. Matrix based Subdivision Depth Computation for Extra-Ordinary Catmull-Clark Subdivision Surface Patches (with Gang Chen), *Lecture Notes in Computer Science*, Vol. 4077 (2006), Springer, 545-552.

29. Voxelization of Catmull-Clark Subdivision Surfaces (with S. Lai), *Lecture Notes in Computer Science*, Vol. 4077 (2006), Springer, 595-601.

30. Near-Optimum Adaptive Tessellation of General Catmull-Clark Subdivision Surfaces (with S. Lai), *Lecture Notes in Computer Science*, Vol. 4035 (2006), Springer, 562-569.

31. Subdivision Depth Computation for Extra-Ordinary Catmull-Clark Subdivision Surface Patches (with Gang Chen and Junhai Yong), *Lecture Notes in Computer Science*, Vol. 4035, Springer, 404-416.

32. Similarity based Interpolation using Catull-Clark Subdivision Surfaces (with S. Lai), *The Visual Computer* 22,9-11 (October 2006), 865-873.

33. Determining Knots by Minimizing Energy (with C.M. Zhang and H. J. Han), *Journal of Computer Science & Technology* 21,2 (March 2006), 261-264.

34. Inscribed Approximation based Adaptive Tessellation of Catmull-Clark Subdivision Surfaces (with S. Lai), *International Journal of CAD/CAM*, 6,1 (2006), 135-144.

35. Parametrization of Catull-Clark Subdivision Surfaces and Its Applications (with S. Lai), *Computer Aided Design & Applications*, 3,1-4 (2006), 513-522.

36. Subdivision Depth Computation for Catmull-Clark Subdivision Surfaces (with Junhai Yong), *Computer Aided Design & Applications*, 3,1-4 (2006), 485-494.

37. Gamma Distribution and Gamma Approximation (with X. Zeng), *Journal of Information and Computational Science* 2,2 (2005), 385-394.

38. Texture Mapping on Surfaces of Arbitrary Topology using Norm Preserving Based Optimization (with S. Lai), *The Visual Computer*, 21,8-10 (2005), 783-790.

39. Sharp Estimates on Approximation of Exponential Type Operators (with X. Zeng), *Int. J. Appl. Math. Sci.*, 2,1 (2005), 23-30.

40. Adaptive Subdivision of Catmull-Clark Subdivision Surfaces (with J. Yong), *Computer-Aided Design & Applications*, 2,1-4 (2005), CAD05, 253-261.

41. Shape-Preserving Parametric Curve Interpolation with Bounding Polygon Constraint (with C. Zhang), in *Geometric Design and Computing*, eds. M. Lucian and M. Neamtu, Nashboro, Brentwood, TN (2004), 559-574.

42. Constrained Scaling of Catmull-Clark Subdivision Surfaces (with S. Lai and S. Zou), *Computer-Aided Design & Applications*, 1,1-4 (2004), CAD04, 7-16.

43. Geometric Hermite Curves with Minimum Strain Energy (with J. Yong), *Computer Aided Geometric Design*, 21,3 (2004), 281-301.

44. Dynamic Highlight Line Generation for Locally Deforming NURBS Surfaces (with J. Yong, K. Miura, Y. Chen, and P. Stewarts), *Computer Aided Design*, 35,10 (2003), 881-892.

45. Triangular Patch Modeling Using Combination method (with C. Zhang) *Computer Aided Geometric Design*, 19,8 (2002), 645-662.

46. Conversion from Doo-Sabin Subdivision Surfaces to Catmull-Clark Subdivision Surfaces (with K.T. Miura, J. Sone, M. Ueda, M. Osano), *3D Forum*, 15,4 (2001), 113-118.

47. Interactive Curve Deformation by Scaling Derivative (with K.T. Miura, J. Sone, M. Ueda, M. Osano), *3D Forum*, 15,4 (2001), 107-112.

48. Constrained Rational Cubic Spline Interpolation and its Application (with Q. Duan), *J. of computational Mathematics*, 19,2 (2001), 143-150.

49. Streamline Modeling with Subdivision Surfaces on the Gaussian Sphere (with K. Miura and L. Wang), *Computer Aided Design*, 33,13 (November 2001), 975-987.

50. Linear Combination of Tangent Vectors and Its Applications on Subdivision Curves and Surfaces on Unit Sphere (with K.T. Miura, L. Wang, M. Ueda, M. Osano), *3D Forum*, 15,1 (2001), 104-109.

51. Constrained Shape-Preserving Parametric Curve Interpolation (with C. Zhang), *Int. J. Computational Geometry and Applications*, 13,4 (2001), 23-35.

52. Fairing Spline Curves/Surface by Minimizing Energy (with C. Zhang and P. Zhang), *Computer Aided Design*, 33,13 (November 2001), 913-923.

53. Constrained Shape Scaling of Trimmed NURBS Surfaces using Fix-and-Stretch Approach (with P. Zhang and C. Zhang), *Computer Aided Design*, 33,1 (January 2001), 103-112.

54. Quadratic B-spline Curve Interpolation (with X. Wang and B.A. Barsky), *Computers & mathematics with Applications*, 41 (2001), 39-50.

55. On the Rates of Approximaiton of Bernstein Type Operators (with X.M. Zeng), *Journal of Approximation Theory*, 109 (2001), 242-256.

56. Patch Reduction in Surface Reconstruction (with K.T. Miura, L. Wang, M. Ueda, M. Osano), *3D Forum*, 14,4 (2000), 111-116.

57. Constructing Parametric Quadratic Curves (with C. Zhang), *J. Computational & Applied Mathematics*, (Special Issue on: Computational Methods in Computer Graphics) 102,1 (1999), 21-36.

58. Constrained Interpolation Using Rational Cubic Spline Curves with Linear Denominators (with Q. Duan, G. Xu, A. Liu, and X. Wang), *Korean J. Computational & Applied Mathematics*, 6,1 (January 1999), 203-215.

59. Surface Reconstruction from Point Clouds (with B. Toll), in *Machining Impossible Shapes*, Gustav J. Olling, Byoung K. Choi, and Robert B. Jerard, editors, Kluwer Academic Publishers, Boston, 1999, 173-178.

60. Removing Local Irregularities of NURBS Surfaces by Modifying Highlight Lines (with C. Zhang), *Computer Aided Design*, 30,12 (Dec. 1998), 923-930.

61. A Method for Determining Knots in Parametric Curve Interpolation (with C. Zhang and K.T. Miura), *Computer Aided Geometric Design*, 15 (1998), 399-417.

62. Surface Design based on Hermite Spline interpolation with Tension Control and Optimal Twist Vectors (with X. Wang), *Neural, Parallel, and Scientific Computations*, 5, 1&2 (March & June, 1997), 37-57 (Special Issue in Computer Aided Geometric Design).

63. Energy and B-Spline Interproximation (with X. Wang and B.A. Barsky), *Computer Aided Design*, 27,1 (1997), 1-12.

64. Parallel Mesh Generation based on a New Label-Driven Subdivision Technique (with K.T. Miura), *International Journal of Japan Society for Precision Engineering*, 30,4 (Dec. 1996), 353-358.

65. Comparison of Surface and Derivative Evaluation Methods for the Rendering of NURB Surfaces (with W.L. Luken), *ACM Trans. on Graphics*, 15,2 (April 1996), 153-178.

66. Parallel B-spline Surface Interpolation on a Mesh-Connected Processor Array (with Jiaye Wang, G. Wasilkowski et al), *J. Parallel & Distributed Computing*, 24 (1995), 224-229.

67. Reduced-Knot NURBS Representations of Rational G^1 Composite Bezier Curves (with B. Joe and W.P. Wang), *Computer Aided Design*, 26, 5 (May 1994), 393-399.

68. Interproximation Using Cubic B-Spline Curves (with B.A. Barsky), in *Modeling in Computer Graphics: Methods and Applications*, ed. B. Falcidieno and T.L. Kunii, Springer-Verlag, Berlin (1993), 359-374.

69. Rate of Convergence of Hermite-Fejer Polynomials for Functions with Derivatives of Bounded Variation (with R. Bojanic), *ACTA MATH. Hung*, 59, 1-2 (1992), 91-102.

70. Estimating Subdivision Depth for Rational Curves and Surfaces, *ACM Trans. on Graphics*, 11, 2 (April 1992), 140-151.

71. Interproximation: Interpolation and Approximation Using Cubic Spline Curves (with B.A. Barsky), *Computer Aided Design*, 23, 10 (Dec. 1991), 700-706.

72. B-Spline Curves and Surfaces Viewed As Digital Filters (with A. Goshtasby and B.A. Barsky), *Computer Vision, Graphics and Image Processing*, 52, 2 (1990), 264-275.

73. Rate of Convergence of Bernstein Polynomials for Functions with Derivatives of Bounded Variation (with R. Bojanic), *Journal of Mathematical Analysis and Applications*, 141, 1 (July 1989), 136-151.

74. A Parallel Mesh Generation Algorithm Based on Vertex Label Assignment Scheme (with J. W. jaromczyk et al), *International Journal for Numerical Methods in Engineering*, 28, 6 (June 1989), 1429-1448.

75. A Parallel Line Clipping Algorithm and Its Implementation (with Y. K. Yen), in *Parallel Processing for Computer Vision and Display*, ed. P. M. Dew, T. R. Heywood and R. A. Earnshaw, Addison-Wesley, Wokin4ham, England (1989), 338-350.

76. Covering of Polygons by Rectangles (with I. M. Lin), *Computer Aided Design*, 21, 2 (March 1989), 97-101.

77. A Parallel B-Spline Surface Fitting Algorithm (with A. Goshtasby), *ACM Trans. on Graphics*, 8, 1 (January, 1989), 41-50.

78. Alternate Spline: A Generalized B-Spline (with A. P. Bien), *J. Approximation Theory*, 51, 2 (Oct. 1987), 138-159.

79. Flexible Subdivision Theorems of B-Spline and Bezier Curves (with W. C. Liao), *J. Chinese Institute of Engineers*, 9,1 (1986), 97-103.

80. Error Evaluation for Cubic Bessel Interpolation (with A. P. Bien), in *Rational Approximation and Interpolation*, ed. P. R. Graves-Morris, E. B. Saff and R. S. Varga, Springer-Verlag, New York (1985), 362-382.

81. On the rate of Convergence of Szasz-Mirakyan Operators for Functions of Bounded Variation, *J. Approximation Theory*, 40 (1984), 1-16.

82. On the Rate of Convergence of Bernstein Polynomials of Functions of Bounded Variation, *J. Approximation Theory*, 39 (1983), 259-274.

83. Estimates for the Rate of Approximation of Functions of Bounded Variation by Hermite-Fejer Polynomials (with R. Bojanic), *J. Approximation Theory*, 3 (1983), 5-17.

Papers in Refereed Conferences:

84. A Generative Human-Robot Motion Retargeting Approach using a Single Depth Sensor (with Sen Wang, etc), to appear in 2017 IEEE Int. Conf. on Robotic & Automation (ICRA2017), May 29 - June 3, 2017, Singapore.

85. Subdivision based Piecewise C2 Surface Construction for Meshes of Arbitrary Topology (with S. Lai), Proc. CAD2016, Vancouver, June 27-30, 2016.

86. G2 Interpolation for Polar Surfaces (with J. Wang), Proc. CAD2015, London, June 22-25, 2015, pp. 259-263.

87. Polar Embeded Catmull-Clark Subdivision Surface (with J. Wang), Proc. CAD/Graphics 2013, Nov. 16-18, 2013, Hong Kong, pp. 24-31.

88. Bezier Crust on Quad Subdivision Surfaces (with Jianzhong Wang), Proc. Pacific Graphics 2013, Oct. 7-9, 2013, Singapore.

89. Transfer Facial Expressions with Identical Topology (with Alice Lin), Proceedings of 18th International Conferences on Computer Games *CGAMES2013*, Louisville, July 30 - August 1, 2013, pp. 144-148.

90. Cubic Surface Fitting with Edges as Constraints (with C. Zhang, X. Zhang, X. Li) Proceedings of 2013 IEEE International Conferences on Image Processing *ICIP2013*, Melborne, Australia, Sept. 15-18, 2013, pp. 1046-1050.

91. Dynamic Texture for Facial Expression (with Alice Lin), Proc. 25th Internatona Conference on Computer Animation and Social Agents, May 9-11, 2012, Siagapore, pp. 5-8.

92. Modeling and Animating Three Dimensional Detailed Facial Expressions (with Alice Lin), Proc. IASTED International Conference on Modeling, Simulation and Identification (MSI2011), Pittsburgh, PA, Nov. 7-9, pp. 443-450.

93. Dynamic Subtle Facial Expression (with Alice Lin), Proceedings of 15th International Conferences on Computer Games *CGAMES2010*, Louisville, July 28 - August 1, 2010, pp. 104-109.

94. Mesh Clustering by Approximating Centroidal Voronoi Tessellation (with F. Fan, C. Huang, Y. Li, J. Wang, S. Lai), Proc. 2009 SIAM/ACM Joint Conference on Geometric & Physical Modeling, Oct. 4-8, San Francisco, 2009

95. GPU Supported Patch-based Tessellation for Dual Subdivison (with F. Fan), Prod. 6th International Conference on Computer Graphics, Imaging and Visualization (CGIV09).

96. Constructing G1 Quadratic Bezier Curves with Arbitrary Endpoint Tangent Vectors (with H. Gu, J. Yong, and J-C Paul), Proc. IEEE CAD/Graphics 2009.

97. Patch-based Tessellation for Dual Subdivision on GPU (with F. Fan), *ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games* (i3D 2009), Boston, MA, February 27-March 1 (Fri-Sun), 2009.

98. Smooth Surface Reconstruction using Doo-Sabin Subdivision Surfaces (with F. Fan, S. Lai, K. T. Miura, C. Huang, J. Wang), *Proc. 3rd International Conference on Geometric Modeling & Imaging (GMAI08)*, July 9-11, 2008, LSBU, London, UK, 27-33.

99. 3D Extension of Aesthetic Plane Curve and Its B-Spline Approximation (with K. Miura at el), *Proc. CAD07*, June 25-29, 2007, Honolulu, Hawaii.

100. Shadow Generation for Scenes Represented by Catmull-Clark Subdivision Surfaces (with Shuhua Lai), *Proc. 25th Computer Graphics International Conference (CGI 2007)*, Petropolis, Brazil, May 30-June 2, 2007, 123-132.

101. Parametrization of Quadrilateral Meshes (with L. Liu and C. Zhang), *Proc. 7th International Conference on Computational Science (ICCS2007)*, Beijing, China, May 27-30, 2007.

102. Adaptive Rendering of Catmull-Clark Subdivision Surfaces (with S. Lai), *Proc. 9th Int. Conf. on Computer Aided Design adn Computer Graphics (CAD/CG 2005)*, Dec 7-10, 2005, Hong Kong, 125-130.

103. Gamma Distribution and Gamma Approximation (with X. Zeng), *Proc. ISCIAIS2005*, August 14-19, 2005, 1-5.

104. Smooth Trimmed NURBS Surface Connection with Tension Control (with P. Zhang), *Proc. Geometric Modeling and Processing*, Beijing, China, April 13-15, 2004, 56-65.

105. Shadow Generation Using Discretized Shadow Volume in Angular Coordinate (with R. Thakur and K. Miura), *Proc. Pacific Graphics 2003*, pp. 224-233, Canmore, Alberta, Canada, Oct. 8-10, 2003.

106. Choosing Knots in Shape Preserving Interpolation (with C. Zhang) *Proc. Geometric Modeling and Processing*, Beijing, China, April 13-15, 2004, 31-37.

107. Conversion from Doo-Sabin to Catmull-Clark Subdivision Surfaces (with K.T. Miura, J. Sone, M. Ueda, M. Osano), *Human and Computer 2001*, pp. 110-121, 2001.

108. Interactive Curve Deformation by Scaling Derivative (with K.T. Miura, J. Sone, M. Ueda, M. Osano), *Human and Computer 2001*, pp. 104-110, 2001.

109. Fine Tuning: Curve and Surface Deformation by Scaling Derivatives (with K.T. Miura et al), *Proc. Graphics and CAD/Visual Computing Joint Symposium 2001*, pp.73-78, 2001.

110. Smooth Connection of Trimmed NURBS Surfaces (with Pifu Zhang), *Proc. 6th ACM Symposium on Solid Modeling and Applications*, June 4-8, 2001, Ann Arbor, Michigan.

111. Fine Tuning: Curve and Surface Deformation by Scaling Derivatives (with K.T. Miura et al), *Proc. 9th Pacific Conference on Graphics and Applications*, Tokyo, Oct. 16-18, 2001, 150-159.

112. Patch Reduction in Surface Reconstruction (with K.T. Miura, L. Wang, M. Ueda, M. Osano), *Human and Computer'2000*, pp.261-266, 2000.

113. Linear Combination of Tangent Vectors and Its Applications on Subdivision Curves and Surfaces on Unit Sphere (with K.T. Miura, L. Wang, M. Ueda, M. Osano), *Human and Computer'2000*, pp.21-26, 2000.

114. Constrained C^1 Piecewise Bicubic Bezier Surface Interpolation (with C. Zhang and B. Barsky), *Proc. Geometric Modeling & Processing 2000*, April 10-12, 2000, Hong Kong, 162-174.

115. Constrained Shape Scaling of Multi-Surface Objects (with P. Zhang and C. Zhang), *Proc. Geometric Modeling & Processing 2000*, April 10-12, 2000, Hong Kong, 398-407.

116. Constrained Shape Scaling of Trimmed NURBS Surfaces (with P. Zhang and C. Zhang), *Proc. 1999 ASME Design Theory and Methodology Conference (ASME DTM-99)*, September 12-15, 1999, Las Vegas, NV.

117. Blending, Smoothing, and Interpolation of Irregular Mesh Using N-Sided Varady Patches (with X. Wang and B.A. Barsky), *Proc. 5th ACM Symposium on Solid Modeling and Applications*, June 9-11, 1999, Ann Arbor, Michigan, 212-222.

118. Collaborative CAD on Web (with Z. Zhang and B. Barsky), *International Conferenc on Advanced Manufacturing Technology (ICAMT99)*, June 16-18, 1999 Xi'an, P.R. China, 298-302.

119. Collaborative CAD: A Conceptual Model (with H. Wu, Z. Zhang, C. Wells, C. Crocket, T. Lok, B. Mullins, B. Barsky, J. Sun, J. Wang, Q. Liu), *Design Computing on the Net'98*, November, 1998, Sydney, Australia.

120. Choosing Knots in Shape Preserving Interpolation (with C. Zhang), *5th International Conference on CAD/Graphics*, Shenzhen, China, December 15-20, 1997.

121. Smooth Surface Interpolation of Irregular Meshes (with X. Wang), *Proc. 1997 International Conference on Manufacturing Automation* (ICMA '97), April 28-30, 1997, Hong Kong, 1213-1218.

122. Boundary Representation, Intersection, and Evaluation of NURBS Based Non-Manifold Objects (with X. Wang, J. Sun and B.A. Barsky), *Proc. 1996 ASME Design for Manufacturing Conference* (ASME DTC-96 DFMC), August 18-22, 1996, Irvine, CA, 622-633.

123. Hermite interpolation with Tension Control and Optimal Twist Vectors (with X. Wang), *4th SIAM Conference on Geometric Design*, November 6-9, 1995, Nashville, TN.

124. Parallel Mesh Generation based on a New Label-Driven Subdivision Technique (with K.T. Miura), *Proc. 5th IFIP Conference on Computer Applications in Production and Engineering* (CAPE'95), May 16-18, 1995, Beijing, China, 121-130.

125. A Blending Model for Parametrically Defined Geometric Objects (with A.P. Bien), *Proc. ACM Solid Modeling'91 Conference*, June 5-7, 1991, Austin, Texas, 339-347.

126. Finding the Intersection Points of A Line with A Polygon and It's Applications (with W.C. Jiaan), *Proc. 1986 ACM Computer Conference*, Cincinnati, OH, Feb. 4-6, 1986, ACM, New York, NY, 1986, 448.

127. Clipping of Bezier Curves (with C.C. Lin), *Proc. of the 1985 ACM Computer Conference*, October 14-16, 1985 / Denver, Colorado, 74-84.

128. Bezier Curve Generator: A Hardware Approach to Curve Generation (with K.R. Hsieh, R.R. Huang and Y.H. Chin), *Proc. 1985 International Symposium on VLSI Technology, systems and Applications*, Taiwan (May 1985), 278-281.

129. Approaches to the Design and Implementation of University Information Systems (in Chinese, with S. Y. Juang and C. T. Wu), *Proc. IMC'S 1985 Asia-Pacific Regional Information & Micrographic Management Conference*, July 11-13, Taiwan, 353-363.

130. Clipping of Bezier Curves and Surfaces (with C. C. Lin), *Proc. 1985 National Computer Symposium*, Taiwan, 1060-1071.

131. CUT Operation in Freeform Surface Modeling (with J. H. Lee), *Proc. 1985 National Computer Symposium*, Taiwan, 1359-1369.

132. Conversion of CSG Representation to Boundary Representation (with C. H. Cheng and S. N. Young), *Proc. 1985 National Computer Symposium*, Taiwan, 1451-1463.

133. Multi-Segment and Multi-Patch Subdivision of Polynomial Curves and Surfaces (with C. Liao), *Proc. International Computer Symposium*, 1984, Taiwan (Dec. 1984), 657-660.

134. MITHRAS: An Interactive Freeform Modeling System (with J. H. Lee), *Proc. International Computer Symposium*, 1984, Taiwan (Dec. 1984), 649-656.

Papers in unrefereed conferences:

135. Voxelixation of Freeform Solids Represented by Catmull-Clark Subdivision Surfaces, *Proc. 2006 NSF Design, Service and Manufacturing Grantees and Research Conference*, July 24-26, 2006, St. Louis, MO, 64-73.

136. Adaptive Subdivision of Catmull-Clark Subdivision Surfaces, *Proc. 2005 NSF Design, Service and Manufacturing Grantees and Research Conference*, January 3-6, 2005, Scottsdale, Arizona, 35-39.

137. Constrained Scaling of Subdivision Surfaces, *Proc. 2004 NSF Design, Service and Manufacturing Grantees and Research Conference*, January 5-8, 2004, Dallas, Texas, 102-106.

138. Constrained Design, Streamline Modeling, Automatic Fairing and Automatic Joining Techniques for NURB Surfaces III, *Proc. 2003 NSF Design, Service and manufacturing Grantees and Research Conference*, January 6-9, 2003, Birmingham, Alabama, 93-95.

139. Constrained Design, Streamline Modeling, Automatic Fairing and Automatic Joining Techniques for NURB Surfaces II, *Proc. 2002 NSF Design, Service and manufacturing Grantees and Research Conference*, January 7-10, 2002, Puerto Rico, 93-95.

140. Curve and Surface Deformation by Scaling Derivatives (with Junhai Yong and K.T. Miura), *SIAM Conference on Geometric Design and Computing*, November 5-8, 2001, Sacramento, California.

141. Dynamic Highlight Line Generation for Locally Deforming NURBS Surfaces (with Junhai Yong and K.T. Miura), *SIAM Conference on Geometric Design and Computing*, November 5-8, 2001, Sacramento, California.

142. Triangular Patch Modeling using Combination Method (with Caiming Zhang), *SIAM Conference on Geometric Design and Computing*, November 5-8, 2001, Sacramento, California.

143. Shadow Generation Based on RE Loops and Their Angular Representations (with Khageshwar Thakur and K.T. Miura), *SIAM Conference on Geometric Design and Computing*, November 5-8, 2001, Sacramento, California.

144. Smooth Connection of Trimmed NURBS Surfaces (with Pifu Zhang), *SIAM Conference on Geometric Design and Computing*, November 5-8, 2001, Sacramento, California.

145. Constrained Design, Streamline Modeling, Automatic Fairing and Automatic Joining Techniques for NURB Surfaces I, *Proc. 2001 NSF Design, Service and manufacturing Grantees and Research Conference*, January 7-10, 2001, Tampa, Florida, 43-45.

146. The GEO-WEB-CAD project III - Synchronization Mechanism in WebCAD (wity R. Xing), *Proc. 2000 NSF Design and manufacturing Grantees Conference*, January 5-8, 2000, Vancour, Canada, 23-25.

147. Constrained Scaling of Trimmed NURBS Surfaces (with P. Zhang and C. Zhang), *Proc. 1st Honda Initiation Grant Symposium*, May 20-21, 1999, Columbus, OH, pp. 40-47.

148. The GE3-WEB-CAD project II, *proc. 1999 NSF Design and manufacturing Grantees Conference*, January 5-8, 1999, Los Angels, 23-25.

149. New Computation Techniques for Shape Modeling and Design III, *Proc. 1998 NSF Design and Manufacturing Grantees Conference*, January 5-8, 1998, Monterrey, Mexico, 131-132.

150. The GEO-WEB-CAD project I, *Proc. 1998 NSF Design and Manufacturing Grantees Conference*, January 5-8, 1998, Monterrey, Mexico, 727-728.

151. New Computation Techniques for Shape Modeling and Design II, *Proc. 1997 NSF Design and manufacturing Grantees Conference*, January 7-10, 1997, Seattle, WA., 11-12.

152. New Computation Techniques for Shape Modeling and Design, *Proc. 1996 NSF Design and Manufacturing Grantees Conference*, January 2-5, 1996, Albuquerque, NM, 119-120.

Technical Reports:

153. Beta-Bezier Curves (with Anastasia Kazadi and Alice Lin), TR xxx-xx, Dept. of Computer Science, University of Kentucky.

154. Guided Catmull-Clark Subdivision (with Jianzhong Wang), TR 519-11, Dept. of Computer Science, University of Kentucky.

155. Rendering Trimmed NURB Surfaces (with W.L. Luken), *IBM Report RC18669.*

156. Surface and Derivative Evaluation Methods for the Rendering of NURB Surfaces (with W.L. Luken), *IBM Report RC18670.*

157. Classification of Polygon Vertices: Applications in Filling Polygons (with B. Toll), TR 93-1-017, Dept. of Computer Software, University of Aizu, Japan.

158. Computing Step Sizes for the Tessellation of Trimmed NURB Surfaces (with W.L. Luken), *IBM Report RC18499* (80872).

159. Polygon Filling based on Vertex Classification (with B. Toll), TR 194-91, Dept. of Computer Science, University of Kentucky.

160. A Note on B-Splines (with D. Lee), TR 196-91, Dept. of Computer Science, University of Kentucky.

161. Label-Driven Subdivision and Its Application in Surface Generation, TR 180-90, Dept. of Computer Science, Univ. of Kentucky.

162. Parallel Mesh Generation for Objects Composed of 3D Free-Form Surfaces (with M. Mehra), TR 172-90, Dept. of Computer Science, Univ. of Kentucky.

163. Label-driven Subdivision and Piecewise Linear Approximation of Rectangular Piecewise Surfaces, TR 155-89, Dept. of Computer Science, Univ. of Kentucky.

164. Fitting Using Bezier Curves and Surfaces with Tension Control (with J. H. Lee), TR 123-88, Dept. of Computer Science, Univ. of Kentucky.

165. Automatic Mesh Generation based on Vertex Label Assignment Scheme (with J. Jaromczyk, J.R. Lin, S.S. chang, and J.Y. Lu), TR 108-88, Dept. of Computer Science, Univ. of Kentucky.

166. A Comparative Study of Similarity Measures in Template Matching (with A. Goshtasby and R. Rao), TR 104-88, Dept. of Computer Science, Univ. of Kentucky.

167. B-Spline Surface Interpolation Using SLOR Method with Parallel Relaxation (with A. Goshtasby), TR 94-87, Dept. of Computer Science, Univ. of Kentucky.