

Biographical Sketches: Fuhua (Frank) Cheng

Professional Preparation

Ph.D.	Math/Computer Science	Ohio State University, 1982
M.S.	Computer Science	Ohio State University, 1980
M.S.	Mathematics	Ohio State University, 1978
M.S.	Mathematics	Tsinghua University, 1969-1975

Experience

3/10-12/11	CEO	Amchael Visual Technology Corp.
7/98-	Prof.	Dept. of Computer Science, Univ. of Kentucky
9/93-8/94	Project Leader	Olympus Optical Co.
9/93-8/94	Visiting Prof.	Shape Modeling Lab., Aizu Univ.
9/93-3/96	Visiting Prof.	Dept. of Information Science, Tokyo Univ.
7/89-6/98	Assoc. Prof.	Dept. of Computer Science, Univ. of Kentucky
8/86-6/89	Assist. Prof.	Dept. of Computer Science, Univ. of Kentucky
8/82-7/86	Assoc. Prof.	Dept. of Computer Science, Tsinghua Univ.
6/75-5/77	2 nd Lieutenant	Artillery Academy, R.O.C. (military service)

Research Interests

Geometric/solid modeling, computer graphics, 3D imaging, 3D pointing

Synergistic Activities

- Member of Editorial board - Computer Aided Design & Applications, Journal of Computer Aided Design & Graphics, Journal of Computer Aided Drafting, Design & Manufacturing, ISRN Applied Mathematics
- Program Committee and Chair - CAD'04-CAD'13, CAD'11 (Co-Chair); Pacific Graphics 2003, 2005, 2007; CGI'06, 07, 10, 12; CAD/Graphics2005, 2007, 2011, 2013, 2015, 2017, 2021; CGIV2008-CGIV2010; CGIM2004, 2007, 2008, 2010; SMI'09; GVE2007; ICEC2007; Int. Conf. on Geometric Modeling & Processing 2000, 2002, 2004, 2006, 2008; ACM Symposium on Solid & Physical Modeling 2008, 2010; SIAM/ACM Joint Conference on Geometric & Physical Modeling 2009, 2011; ACDDE2018.
- Invited speaker: Lexmark International, 3/2/2018; Shandong University, China, 12/20/2018; 3rd Asian Conference on Design & Digital Engineering, 2014;
- Courses developed and taught at the University of Kentucky - (1) Computer Graphics (CS535), (2) Computer Animation (CS633), (3) Free-form Solid Modeling (CS630) and (4) Computer-Aided Geometric Design (CS631).

Five Most Important Publications (out of 156 papers)

- Fuhua Cheng, Ardy Goshtasby, "A Parallel B-Spline Surface Fitting Algorithm", ACM Trans. on Graphics, 8(1) (January, 1989), 41-50.

- Fuhua Cheng, Brian Barsky, “*Interproximation: Interpolation and Approximation Using Cubic Spline Curves*”, Computer Aided Design, 23(10) (Dec. 1991), 700-706.
- William L. Luken, Fuhua Cheng, “*Comparison of Surface and Derivative Evaluation Methods for the Rendering of NURB Surfaces*”, ACM Trans. on Graphics, 15(2) (April 1996), 153-178.
- Shuhua Lai, Fuhua (Frank) Cheng, “*Texture Mapping on Surfaces of Arbitrary Topology using Norm Preserving Based Optimization*”, The Visual Computer, 21(8-10) (2005), 783-790.
- Shuhua Lai, Fuhua Cheng, “*Fast Mesh Interpolation and Mesh Decomposition with Applications*”, International Journal of Image and Graphics, 12(1): 1250006, 2012.

Five Recent Publications (within last 48 months)

- Lai, S. and F. Cheng, “*Explicit Construction of C2 Surfaces for Meshes of Arbitrary Topology*,” Computer Aided Design & Applications, Vol. 14(6), pp. 1-10 (March, 2017).
- Zhang, F., X. Qin, X. Li and F. Cheng, “*Determining knots by optimizing the bending and stretching energies*,” Applied Mathematics – A Journal of Chinese Universities, Vol. 32(1), pp. 53-67 (March, 2017).
- Lin, A., C. Chen and F. Cheng, “*Virtual Reality Games to Promote Healthy Behavior Choices*,” International Journal of Computer Trends and Technology, Vol. 54(3), pp. 133-139 (December, 2017).
- Lin, A., F. Cheng and C. Chen, “*Use of Virtual Reality Games on People with Depression and Anxiety*,” Proc. 5th Int. Conference on Multimedia and Image Processing (ICMIP 2020), Nanjing, China, Jan. 10-12, 2020
- F. Cheng, A. Kazadi and A. Lin, “*Beta-Bezier Curves*,” Computer Aided Design & Applications 18,4 (October, 2020), to appear.

US Patents granted and published in 2017-2020 (Total US Patents: 12)

- *Two-Channel Reflector based Single lens 2D/3D Camera with Disparity and Convergence Angle Control I*, US9,557,634 (Date issued: 01/31/2017)
- *2D and 3D Pointing Device based on A Passive Lights Detection Operation Method using One Camera*, US9,678,583 (Date issued: 06/13/2017)
- *Two-Channel Reflector based Single lens 2D/3D Camera with Disparity and Convergence Angle Control II*, US9,807,366 (Date issued: 10/31/2017)
- *Folded Parallel Light Channel based Stereo Imaging System with Disparity and Convergence Angle Control*, US Publication Number: US2020/0059636 A1 (Date published: 02/20/2020).

PhD Students and Visiting Scholars/Postdoctoral Advisees (past 24 months)

- Anastasia Kazadi, May 2022 (anticipated)
- Seifalla Moustafa, May 2024 (anticipated)
- Dr. Xiaojuan Tong, November 2019 (currently with Guangxi University of Finance and Economics, China)
- Dr. Qingbo Cai, March 2020 (currently with Quanzhou Normal University, China)