Sophie Xiaofan Liu
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Education

Ph.D.	Electrical Engineering	National University of Singapore, 1996
	Major Field:	Computer Vision
M.E.	Electrical Engineering	Xidian University, P. R. China, 1991
	Major Field:	Information Engineering
B. S.	Electrical Engineering	Sichuan University, P. R. China, 1982
	Major Field:	Electronics

Professional Experience

August 2011 – Present: Tenured, Professor, Engineering Department Oral Roberts University.

August 2010 – May 2011: Professor, Engineering, Computer Science, Physics and Mathematics Department, Oral Roberts University.

2004 – May 2010 Associate Professor, Engineering and Physics Department, Oral Roberts University.

2002 – 2004: Assistant Professor, School of Computer Engineering, Nanyang Technological University, Singapore.

2001 – 2002: Associate Professor, Engineering and Physics Department, Oral Roberts University.

1996 - 2000: Lecturer, Engineering School of Temasek Polytechnic, Singapore.

1992 - 1996: Research Scholar, Department of Electrical Engineering, National University of Singapore. Research and development on "Invariant object recognition using fuzzy theory" and " Image segmentation of kidney histology processing techniques using mathematical morphology".

1982 - 1992: Assistant Lecturer/Lecturer, Department of Electrical Engineering of Xian Institute of Technology, P. R China.

Research Interests

Video image processing	Video surveillance systems
Medical image processing	Pattern recognition

| Video compression | Adaptive filters |
| Artificial neural networks | Fuzzy image processing and segmentation |

Honors

2013 ORU Faculty Alumni Awards

Faculty Travel Award to present a technical paper at 2010 Southwest Symposium on Image Analysis and Interpretation, May 23-25, 2010. Austin Texas. Oral Roberts University, 2010

Oklahoma Society of Professional Engineers (OSPE) Outstanding Engineering Achievement Award for senior project "3D Face Recognition" received 2010 Technical Advisor of the Senior Project, 2010

Received 2009-2010 Honors Research Assistant Grant of $2500 from ORU Honors Program for the research project "Video based Soccer Detection and Tracking".

Received a scholarship and a travel award of $600 from American Scientific Affiliation (ASA): a fellowship of Christians in Science to attend the workshop on "Teaching About Science and Christian Faith" and ASA 2009 Annual Meeting at Baylor University.

Who's Who in America 2008 -2014, 69th Edition 2015

Dean's Award for Innovation in the Classroom, Honorable Mention, Oral Roberts University 2006

Alumni Award for Mentoring with Students, Honorable Mention, Oral Roberts University 2006

Nominated for University Faculty Assembly award based on "Success in bring about student collaborations" and "Student involvement in class room activities" 2006

Oklahoma Governor's Cup Business Plan Competition Third Place. Technical Advisor of Senior Project "Sentinel Safety Seat", 2006

Faculty Travel Award to attend the ASEE Conference for Undergraduate Educators, Oral Roberts University, 2005

Professional Society Activities

General Chair,   2012 IEEE Green Technology Conference, Tulsa Oklahoma, April, 2012

General Chair,   2012 IEEE Region 5 Business Meeting and Student

Competition, Tulsa Oklahoma, April 2012

Senior Member,   Institute of Electrical and Electronics Engineers (IEEE)
                      American Society for Engineering Education (ASEE)

Judge,   Computer Science Category, Tulsa Regional Science and
                      Engineering Fair, February 27, 2010

Paper Reviewer,   ASEE Annual Conference Papers 2006

Book Reviewer,   "Robotics" was written by Dr. Zhihong Man.
                      2004. This book was a textbook used for undergraduates for
                      their elective course of Computer Engineering School in
                      Nanyang University, Singapore. The book was published by
                      Pearson Education Asia Publisher (#9812445285) at end of
                      2004.

Session chair,   IEEE TENCON' 94,
                      IASTED international conference in 2003,
                      ACM SINGGRAPH conference on Virtual Reality
                      Continuum and Its Applications in Industry (VRCAI) 2004.

Technical Program Organizer Committee, Undergraduate Research Opportunity
Program (UROP) Annual congress, Singapore, 2004.

Courses Taught

Silicon Controlled Rectifiers and Converters Techniques

Control Systems

Radio Frequency Electronic Circuits Analysis

Integrated Circuits Applications

Computer Networks and Communication

Electromagnetic Theory

Computational Methods

Electronics II

Network Analysis I and II

Calculus II and III

Digital Signal Processing

Electronic Circuit Analysis
Artificial Intelligence
Introduction to Engineering

Digital System Design

Digital Logic Technology
Fuzzy Logic Theory
Computer Vision

Faculty Service and Relations

Faculty advisor,   Society of Women Engineering (SWE) Student Group at Oral
                     Roberts University, December 2010 – Present.
Faculty advisor,   IEEE Student Section, Oral Roberts University, August
                     2004 – Feb. 2011.

Served in Faculty Award Committee, Feb. 2009 – Present.
Representative of EGR/PHY area, Recruitment Committee Feb. 2013 - Present
Department Representative, ORU Faculty Senate March 2009- May 2011.
Officer, Science & Engineering Faculty Assembly April 2009 – May 2011.

Research Funding

S$265000 (= US$176,666) from Singapore National Science and Technology
Board (1999-2000) at Temasek Polytechnic, Singapore in 1998. Topic: Parallel
processing and computer vision.

S$13400 (=US$8933) from School of Computer Engineering Start-up Grant at
Nanyang Technological University, Singapore for 2003. Topic: Computer vision
based Fire detection system.

BOOK PUBLICATION

Xiao Fan Liu, Sophie and Chang Hark Loong "Integrated Circuit Applications 1",
Temasek Polytechnic Publisher, Singapore 2000.

PUBLICATIONS

[1] Sophie X. Liu, Lijun Jiang, Sharayah Vermette and Jacob Garner, " Video based
Soccer Ball Tracking", 2010 Southwest Symposium on Image Analysis and Interpretation,
May 23-25, 2010. Austin Texas.

[2] Lijun Jiang, Xiaofan Liu, and *et al.* "Gray scale projection based infrared facial image
analysis for identity verification". 2007 2nd IEEE Conference on industrial electronics and

applications,.Harbin, China. Pp 1818-1822. May 2007.

[3] Zhihong Man, Sophie Liu and Xinghuo Yu, "Stability analysis of nonlinear TCP dynamics with DRED mechanism," *Journal of IEEE transactions on Circuit and Systems(I),* 2006.

[4] Zhihong Man, Hong Ren Wu , S. Xiaofan Liu, and Xinghuo Yu, "A new adaptive back-propagation algorithm based on Lyapunov stability theory for neural networks," *Journal of IEEE transactions on Neural Networks,* Vol. 17, No.6, pp. 1580 - 1991, 2006.

[5] S. Liu Xiaofan, Zhihong Man and A. Anwar, "An enhanced knowledge-based approach to a growing fire detection," 2005 ASEE annual conference and exposition, Portland, Oregon, June 12-15, 2005.

[6] Xinguo Yu, Hoe Chee Lai, Sophie Xiaofan Liu and Hon Wai Leong, "A Gridding Hough Transform for Detecting the Straight Lines in Sports Video," IEEE International Conference on Multimedia & Expo, July 2005, Amsterdam. ICME 2005.

[7] Nguyen Dang Quang, Xinguo Yu, Sophie Liu Xiaofan, "Ellipse tracking algorithm", September, Singapore UROP (Undergraduate research opportunity program) Annual congress, Singapore, 2004.

[8] Zhihong Man, Hong Ren Wu, Sophie Xiao Fan Liu, and Kah Phooi Seng, "Design of robust adaptive filters using Lyapunov stability theory", *Journal of IEEE transactions on Circuits and Systems (II),* 2004.

[9] Alvin Anwar, Sophie Liu Xiaofan, Zhihong Man, "Enhanced video image processing fire detection system"**,** September, Singapore UROP (Undergraduate research opportunity program) Annual congress, Singapore, 2004

[10] Tan Ming Ren , Sophie Liu Xiaofan, Corey Chong Sheng   Chew Seet Hong, "Foreign object detection algorithm",   September, Singapore UROP (Undergraduate Research Opportunity Program) Annual cogress, Singapore, 2004.

[11] Sophie Liu Xiaofan Liu, Zhihong Man, Rsahi Samur, "Edge based region growing - A new image segmentation method," VRCAI" , Singapore, 2004.

[12]   Zhihong Man,, S. Liu Xiaofan, X. Yu, X. Zhang, "A new dynamical fuzzy modeling and eigenstructure assignment control for SISO complex systems," IASTED international conference on artificial intelligence and applications, Spain. pp. 94-99, 2003.

[13] Sophie Liu Xiaofan, Zhihong Man, S. Kumar, Y Cai, "Video Analysis and Knowledge based Fire Detection," 3rd IASTED International Conference- Visualization, Imaging, and Image Processing, vol. 2, Spain. pp. 698-703, 2003.

[14]   Xiaofan Liu, S.H. Ong, S.H. Tan, "Fuzzy logic for object detection with medical

applications", ICARCV'96, Singapore, 1996.

[15]   Xiaofan Liu, S.H. Tan, S.H. Ong, "Fuzzy pyramid scheme for distorted object recognition", Pattern Recognition, 29, No. 10, pp. 1631-1646. 1996.

[16]   Xiaofan Liu, S.H. Tan, S.H. Ong, "Fuzzy segmentation of kidney electron micrograph image" ACCV'95 Second asian conference on computer vision 1, Singapore, pp. 92-96, 1995.

[17] Xiaofan Liu, S. Tan, V. Srinivasan, S.H. Ong and W.X. Xie, "Fuzzy pyramid based invariant object recognition", Pattern Recognition, 27. No. 5, 1994. pp. 741-756, 1994.

[18]   Xiaofan Liu, S.H.Tan, V.Srinivasan and S.H. Ong, "Selection of key features for invariant object recognition using fuzzy entropy", *ISSIPNN' 94*. 1994 International symposium speech, image processing & neural networks, Hong Kong, pp. 217-220, April 1994.

[19]   Xiaofan. Liu, S.H.Tan, S.H. Ong and V. Srinivasan, "Map recognition using an adaptive fuzzy pyramid decision approach", IEEE TENCON' 94, Singapore, pp. 918-922, August 1994.

[20]   Xiaofan Liu, S. H. Tan, V. Srinivasan and S.H. Ong, "Adaptive fuzzy pyramid decision method for invariant object recognition", First Asian fuzzy systems symposium, Singapore, 1993.

[21]   Xiaofan Liu and C. Guo, "The equal length coding method of binary text image compression, Information and Control, A Journal of Chinese Society of Automation. pp. 28-31, April 1988.

[22]   Xiaofan Liu and C. Guo, "Code compressing and storing for Chinese character document image, Application Research of Computer, No. 2, pp.43-45, 1988.

[23] Xiaofan Liu, "Comprehensive evaluation of Chinese character recognition system in China using fuzzy method", Journal of Xian Institute of Technology", No.4 , 1988.