Dr. Joel Fu
Professor, Computer Science

CONTACT INFORMATION

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Computer Science Program
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EDUCATION

- Ph.D. (Computer Science and Engineering)
  University of Alabama in Huntsville, spring 2005
- MS (Computer Science)
  Alabama A & M University, spring 1998
- MS (Physics)
  Alabama A & M University spring 1996
- BS (Physics)
  Anhui Normal University, spring 1983

TEACHING

- C++ programming
- Data structure
- Computer Graphics
- Artificial Intelligence
- Image processing

CAREER INTEREST

- Image Processing
- Cyber Security
- Sensor/Data Fusion and Target Discrimination
- Remote Sensing
- Multi Spectral/Hyperspectral Imaging

PUBLICATIONS

1. J. Fu, H. J. Caulfield, C. Glenn. "Primitive attempt to turn images into percepts," *Int. J. Mach. Learning & Cybernetics*, Aug. (2013).

2. J. Fu, H. J. Caulfield, D. Wu, W. Tadesse. "Hyperspectral Image Analysis using Artificial Color," *J. Applied Remote Sensing*, Vol. 4, 043514 (2010).
3. J. Fu, H. J. Caulfield, D. Wu, T. Montgomery. "Effects of Hyperellipsoidal Decision Surfaces on Image Segmentation in Artificial Color," *J. Electronic Imaging*, 19(2), 023003 (2010).
4. J. Fu, H. J. Caulfield, S. M. Yoo, D. Wu. "Fuzzy Aggregation with Artificial Color filters," *Information Sciences*, 180, 167-180 (2010).
5. J. Fu, and H. J. Caulfield. "Making a Smart Color Camera," *Image and Vision Computing*, 26, 253-258 (2008)
6. J. Fu and H. J. Caulfield, "Designing spectral sensitivity curves for use with Artificial Color," *Pattern Recognition*, 40, 2251-2260 (2007)
7. J. Fu and H. J. Caulfield. "Applying color discrimination to polarization discrimination in images," *Optics Communications*, 272, 362-366, (2007)
8. J. Fu, H. J. Caulfield, and A. Bandyopadhyay. "Pairing Mathematical Morphology with Artificial Color to Extract Targets from Clutter," *J. Imaging Science & Technology*, 51(2), 148-154, (2007).
9. H. J. Caulfield, and J. Fu. "Artificial and Biological Color: The ABCs," *Optics and Spectroscopy*, 103(6), 851–854. 2007.
10. H. J. Caulfield and J. Fu. "Holographic spectral image discrimination and segmentation," *J. Holography and speckle*, 3(2), 112-116 (2006)
11. J. Fu, H. J. Caulfield and A. J. Bond. "Artificial and Biological color band design as spectral compression," *Image and Vision Computing*, 23, 761-766 (2005)
12. J. Fu, H. J. Caulfield, and T. Mizell. "Applying Median Filtering with Artificial Color," *J. Imaging Science and Technology*, 49(5), 498-504 (2005)
13. J. Fu, H. J. Caulfield, S. M. Yoo, and V. Atluri. "Use of Artificial Color Filtering to Improve Iris Recognition and Searching," *Pattern Recognition Letter*, 26, 2244-2251 (2005)
14. H. J. Caulfield, J. Fu and S. M. Yoo. "Artificial Color image logic," *Information Science*, 167, 1-7 (Dec. 2004).
15. J. Fu, H. J. Caulfield and S. R. Pulusani. "Artificial Color Vision: a preliminary study," *J. Electronic Imaging*, 13(3), 553-558 (July 2004).
16. J. Fu, M. Schamschula, and H. J. Caulfield. "Optical Parallel Database Management System for Page Oriented Holographic Memories," *Opt. Express*, Vol. 5, No.12 (1999).
17. J. Fu and etc. "Experimental Demonstration of A Two Stage Binary Optical Time Delay System," *Proc. SPIE* 2848, 187-193 (1996).
18. J. Fu, M. Schamschula, and H. J. Caulfield. "Modular Solid Optical Time Delay System," *Optics Communications*, Vol. 121, No. 1(1995). Also appeared in Selected Papers on Optical Photonic Control Systems for Phased Array Antennas, edited by N. A. Riza, *SPIE Milestone Series* Vol.MS136, 544-548, (1997).

AWARD/HONOR

- "Hyperspectral Image Analysis using Artificial Color" is listed as the most widely read articles in SPIE library: Top ONE in remote sensing and in top 10 over all fields, 2010.
- Jim Zimmerman Award, AAMURI, 2008.
- Research on Modular Solid Optical Time Delay System has been awarded SPIE Milestones, 1997.

- NSF: Partners for Innovation in Information Technology from NSF, 2009.
- AMRDEC: Center of Excellence in Integrated Sensor Systems, 2009.
- AAMU title III: Architecture Driven Embedded System Evolution AAMU title III, 2009.
- DoD: Visible HyperSpectral Imager for use in Artificial Color and related activities, Sep., 2007.
- AFOSR: A Study of the Methods and Applications of Artificial Color, Dec., 2006.
- ARL Director's Funds: Artificial Color, 2004.