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EDUCATION

Ph.D. in Mathematics, University of Florida, August 1986.

Dissertation: *Image Algebra Techniques for Parallel Computation of Discrete Fourier and General Linear Transforms*

M.S. in Mathematics, University of Florida, May 1983.

B.S. in Mathematics, University of Central Florida, August 1981, *magna cum laude*.

POSITIONS HELD

- 2003-Present **Professor** of Computer & Information Science & Engineering
University of Florida.
- 2016-Present **Affiliate Professor**, Environmental Engineering Sciences
University of Florida
- 08/15-06/16 **Visiting Professor** of Computer Science and Geography
University of California, Santa Barbara
- 05/12 – 05/15 **Chair and Professor** of Computer & Information Science & Engineering
University of Florida
- 2001-2003 **Associate Professor** of Computer & Information Science & Engineering
University of Florida.
- 1991-2001 **Assistant / Associate / Full Professor** of Computer Engineering & Computer Science,
(formerly Electrical & Computer Engineering), University of Missouri-Columbia.
- 1994 **Summer Research Fellow**, Image Processing Laboratory, Eglin AFB FL.
- 1991-1994 **Consultant**, Environmental Research Institute of Michigan (ERIM).
- 1989-1991 **Section Head and Research Engineer**, Image & Pattern Analysis Section, ERIM.
- 1988 **Summer Research Fellow**, Institute for Mathematics and Its Applications,
Summer Program on Signal Processing, University of Minnesota.
- 1987-1988 **Assistant Professor** of Mathematics, University of Wisconsin-Oshkosh.
- 1986-1988 **Senior Research Scientist**, Machine Vision Technology Section,
Honeywell Systems and Research Center.
- 1986-1988 **Honorary Fellow**, Department of Mathematics, University of Wisconsin-Madison.
- 1986 **Visiting Assistant Professor** of Mathematics, University of Wisconsin-Oshkosh.
- 1984-1986 **Graduate Research Assistant**, Computer & Information Science Department,
University of Florida.
- 1984 **Summer Research Fellow**, Image Processing Laboratory, Eglin AFB, FL.
- 1981-1984 **Graduate Teaching Assistant**, Department of Mathematics, University of Florida.

Table of Contents

PUBLICATIONS	3
REFEREED JOURNAL ARTICLES (103 published/accepted).....	3
JOURNAL COMMENTS	11
BOOK CHAPTERS.....	11
CONFERENCE PAPERS (220 accepted/published).....	12
CONFERENCE PRESENTATIONS	29
FUNDED RESEARCH Total = \$15,005,399	32
Research Funding at the University of Florida	Error! Bookmark not defined.
Co-Investigator at the University of Florida.....	Error! Bookmark not defined.
University of Missouri.....	Error! Bookmark not defined.
TEACHING	33
Ph.D. Dissertations Supervised (22)	33
Post-Doctoral Associates Supervised	34
COURSES TAUGHT AT THE UNIVERSITY OF MISSOURI	35
COURSES TAUGHT / DEVELOPED WHILE AT THE UNIVERSITY OF FLORIDA.....	35
National / International SERVICE.....	36

PUBLICATIONS

REFEREED JOURNAL ARTICLES (110 published/accepted)

- (J1) P. Chen, Y. Liang, X. Shi, L. Yang, **P. Gader**, “Automatic Whole Slide Pathology Image Diagnosis Framework via Unit Stochastic Selection and Attention Fusion”, *Neurocomputing* (Accepted, May 2020)
- (J2) P. Chen, X. Shi, Y., Liang, Y. Li, L. Yang, **P. Gader**, “Interactive thyroid whole slide image diagnostic system using deep representation”, *Computer Methods and Programs in Biomedicine*, 195, 105630 (2020), <https://doi.org/10.1016/j.cmpb.2020.105630>
- (J3) Dennison, P. E., Qi, Y., Meerdink, S. K., Kokaly, R. F., Thompson, D. R., Daughtry, C. S. T., Quemada, M., Roberts, D.A., **Gader, P.D.**, Wetherley, E.B., Numata, I., & Roth, K. L. (2019). “Comparison of methods for modeling fractional cover using simulated satellite hyperspectral imager spectra”, *Remote Sensing*, 11(2072), 1–23. <https://doi.org/10.3390/rs11182072>
- (J4) Meerdink, S.K., Roberts, D.A., Roth, K.L., King, J.Y., **Gader, P.D.**, & Koltunov, A “Classifying California plant species temporally using airborne hyperspectral imagery”, *Remote Sensing of Environment*, 232, . (2019). <https://doi.org/10.1016/j.rse.2019.111308>
- (J5) Y. Zhou, E. Wetherley, and **P. D. Gader**, “Unmixing urban hyperspectral imagery using probability distributions to represent endmember variability”, (accepted), *Remote Sensing of Environment*, April 2020.
- (J6) Y. Zhou, A. Rangarajan and **P. D. Gader**, "A Gaussian Mixture Model Representation of Endmember Variability in Hyperspectral Unmixing," in *IEEE Transactions on Image Processing*, vol. 27, no. 5, pp. 2242-2256, May 2018. doi: 10.1109/TIP.2018.2795744.
- (J7) M. Shuaib, W. Lee, **P.D. Gader**, J. Schueller, “Unsupervised Hyperspectral Band Selection for Apple Marssonina Blotch Detection”, *Computers and Electronics in Agriculture*, vol. 148, May 2018, Pages 45-53.
- (J8) S. E. Yuksel, S. Kucuk and **P. D. Gader**, "SPICEE: An Extension of SPICE for Sparse Endmember Estimation in Hyperspectral Imagery," *IEEE Geoscience and Remote Sensing Letters*, vol. 13, no. 12, pp. 1910-1914, Dec. 2016.
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- (J11) L. Kalantari, **P. D. Gader**, S. Graves, S. Bohlman, "One-Class Gaussian Process for Possibilistic Classification Using Imaging Spectroscopy", *IEEE Geoscience and Remote Sensing Letters* 13.7 June 2016, 967-971.
- (J12) R. Heylen, A. Zare, **P. D. Gader** and P. Scheunders, "Hyperspectral Unmixing With Endmember Variability via Alternating Angle Minimization," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 54, no. 8, pp. 4983-4993, May 2016.
- (J13) S. Yuksel, J. Bolton, **P. D. Gader**, “Multiple Instance Hidden Markov Models with Applications to Landmine Detection”, *IEEE Transactions Geoscience and Remote Sensing*, vol. 53, no. 12, Dec. 2015

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- (J16) R. Heylen, P. Scheunders, **P. D. Gader**, and A. Rangarajan, "Nonlinear unmixing by using different metrics in a linear unmixing chain", *IEEE-JSTARS, Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol.8, no.6, pp.2655-2664, June 2015.
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- (J22) Xuping Zhang, J. Bolton, **P. D. Gader**, "A New Learning Method for Continuous Hidden Markov Models for Subsurface Landmine Detection in Ground Penetrating Radar," *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol.7, no.3, pp.813:819, March 2014
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- (C189) M. A. Leon, **P. D. Gader**, and J. M. Keller, "Multiple Neural Network Response Variability as a Predictor of Neural Network Accuracy for Chromosome Recognition," Proceedings of the Rocky Mountain Bioengineering Symposium, Copper Mountain, CO, April 1996, pp. 31 - 37.
- (C190) Y. Won and **P. D. Gader**, "A Comparison of Linear and Morphological Shared-Weight Neural Networks," Proceedings of the SPIE Conference on Nonlinear Image Processing VII, San Jose, CA, Jan. 1996, pp. 81-93.
- (C191) **P. D. Gader** and M. Mohamed, "The Choquet Fuzzy Integral in Handwritten Word Recognition," Proceedings of the SPIE Conference on Document Recognition III, San Jose, CA, Jan. 1996, pp. 309 - 321.
- (C192) J.-H. Chiang and **P. D. Gader**, "Improving Digit Recognition Reliability by a Hybrid Neural Model," Proceedings of the International Conference of CFSA/IFIS/SOFT '95 on Fuzzy Theory and Applications, Taipei, Taiwan, Dec. 1995, pp. 182-187.
- (C193) Y. Won and **P. D. Gader**, "Morphological Shared Weight Neural Network for Pattern Classification and Automatic Target Detection," Proceedings of the 1995 IEEE International Conference on Neural Networks, Perth, Australia, Nov. 1995, pp. 2134-2139.
- (C194) Classifier Fusion for Handwritten Word Recognition," IEEE Conference on Systems, Man, and Cybernetics, Vancouver, Canada, October 1995, pp. 2329-2335.
- (C195) J. M. Keller and **P. D. Gader**, "Fuzzy Logic and the Principle of Least Commitment in Computer Vision," IEEE Conference on Systems, Man, and Cybernetics, Vancouver, Canada, October 1995, pp. 4621-4626.
- (C196) **P. D. Gader** and J.-H. Chiang, "Robust Handwritten Word Recognition with Fuzzy Sets," Proceedings of ISUMA/NAFIPS '95, College Park, MD, Sept. 1995, pp. 198-204.
- (C197) E. Dunn, J. Keller, L. Marks, J. Ikerd, and **P. D. Gader**, "Extending the Application of Fuzzy Sets to the Problem of Agricultural Sustainability," Proceedings of ISUMA/NAFIPS '95, College Park, MD, Sept. 1995, pp. 497-502.
- (C198) J. Keller, **P. D. Gader**, O. Sjahputera, C. W. Caldwell, and H-M. Huang, "A Fuzzy Logic Rule-Based System for Chromosome Recognition," Proceedings of the Eighth IEEE Symposium on Computer-Based Medical Systems, Lubbock TX, June, 1995, pp. 125-132 (invited paper).

- (C199) R. J. Stanley, J. Keller, C. W. Caldwell, and **P. D. Gader**, "Automated Chromosome Classification Limitations Due to Image Processing," Proceedings of the Rocky Mountain Bioengineering Symposium, Copper Mountain, CO, April 1995, pp. 183-188.
- (C200) **P. D. Gader**, M. Andres Mohamed, J. M. Keller, "Applications of Fuzzy Integrals to Handwriting Recognition," Proceedings of the SPIE Conference of Applications of Fuzzy Logic Technology II, April 1995.
- (C201) J. Keller, **P. D. Gader**, and C. Caldwell, "The Principle of Least Commitment in the Analysis of Chromosome Images," SPIE Conference on Applications of Fuzzy Logic Technology, April 1995, pp. 178-186.
- (C202) **P. D. Gader**, J. M. Keller, H. Nair, M. Andres Mohamed, and J. Chiang, "The Principle of Least Commitment in Computer Vision," Proceedings of the Fourth Annual Midwest Electro-Technology Conference, Ames, IA, March 1995.
- (C203) M. Mohamed and **P. D. Gader**, "Generalization of Hidden Markov Models Using Fuzzy Integrals," Proceedings of NAFIPS '94, San Antonio, TX, Dec. 1994.
- (C204) **P. D. Gader**, Y. Won, and M. Khabou, "Image Algebra Networks for Pattern Classification," Proceedings of the SPIE Conference on Image Algebra and Morphological Image Processing V, July 1994.
- (C205) **P. D. Gader**, J. M. Keller, T. Jones, J. Miramonti, and G. Hobson, "MACE Prefiltering for Neural Network Based Automatic Target Recognition," Proceedings of the IEEE International Conference on Neural Networks, Orlando, FL, June 1994.
- (C206) **P. D. Gader** and J. M. Keller, "Applications of Fuzzy Set Theory to Handwriting Recognition," Proceedings of the Third IEEE International Conference on Fuzzy Systems, Orlando, June 1994 (invited paper).
- (C207) G. Hobson, S.R. Sims, **P. D. Gader**, and J. Keller, "MACE Prefiltering Networks for Automatic Target Recognition," Proceedings of the SPIE Conference on Automatic Object Recognition IV, Orlando, FL, April 1994.
- (C208) M. Ganzberger, R. Rovner, A. Gillies, D. Hepp, and **P. Gader**, "Matching Database Records to Handwritten Text," Proceedings of the SPIE Conference on Document Recognition, San Jose, CA, Feb. 1994.
- (C209) **P. D. Gader** and M. A. Khabou, "Automated Feature Generation for Handwritten Digit Recognition," Proceedings of the Third International Workshop on Frontiers of Handwriting Recognition, Buffalo, NY, May 1993.
- (C210) **P. D. Gader**, M. Mohamed, and J. Chiang, "Comparison of Crisp and Fuzzy Character Networks in Handwritten Word Recognition," Proceedings of NAFIPS '92, Puerto Vallarta, Mexico, Dec. 1992, pp. 257-266.
- (C211) **P. D. Gader**, M. Mohamed, and J. Chiang, "Segmentation-Based Handprinted Word Recognition," Proceedings of the Fifth U.S. Postal Service Advanced Technology Conference, Washington, D.C., Nov. 1992, pp. 215-225.
- (C212) **P. D. Gader**, B. Forester, A. Gillies, M. Ganzberger, R. Vogt, and J. Trenkle, "A Segmentation-Free Neural Network Classifier for Machine-Printed Numeric Fields," Proceedings of the U.S. Postal Service Advanced Technology Conference, Washington, D.C., Nov. 1992, pp. A-137-151.
- (C213) **P. D. Gader**, M. Mohamed, and J. Chiang, "Fuzzy and Crisp Handwritten Alphabetic Character Recognition Using Neural Networks," Proceedings of the Artificial Neural Networks in Engineering, St. Louis, MO, Nov. 1992.

- (C214) **P. D. Gader**, "Template Generation for Pattern Classification," Proceedings of the SPIE Conference on Image Algebra and Morphological Image Processing III, July 1992, Vol. 1796.
- (C215) **P. D. Gader**, "Fuzzy Morphological Networks," Proceedings of the First Midwest Electro-Technology Conference, Ames, IA, April 1992.
- (C216) W. F. Pont, Jr. and **P. D. Gader**, "Gradient Descent Techniques for Feature Detection Template Generation," Proceedings of the SPIE Conference on Image Algebra and Morphological Image Processing II, July 1991, Vol. 1568.
- (C217) **P. D. Gader**, D. Hepp, B. Forester, T. Peurach, and B. T. Mitchell, "Pipelined Systems for Recognition of Handwritten Digits in USPS ZIP Codes," Proceedings of U.S. Postal Service Advanced Technology Conference, Washington, D.C., November 1990.
- (C218) **P. D. Gader** and S. Takriti, "Decomposition Techniques for Gray-Scale Morphological Templates," Proceedings of the SPIE Conference on Image Algebra and Morphological Image Processing, San Diego, CA, July 1990, Vol. 1350.
- (C219) **P. D. Gader** and B. Forester, "Integrating Template and Model Matching for Unconstrained Handwritten Numeral Recognition," SPSE Annual Conference, Rochester, NY, May 1990.
- (C220) Andres M. Gillies, **P. D. Gader**, M. P. Whalen, and B.T. Mitchell, "Application of Mathematical Morphology to Handwritten ZIP Code Recognition," Proceedings of the SPIE Conference on Visual Communications and Image Processing IV, Philadelphia, PA, Nov. 1989, Vol. 1199.
- (C221) **P. D. Gader** and E. Dunn, "Image Algebra and Morphological Template Decomposition," Proceedings of the SPIE Conference on Aerospace Pattern Recognition, Orlando, FL, March 1989.
- (C222) G. X. Ritter, **P. D. Gader**, and J. L. Davidson, "Bridge Detection FLIR Images," Proceedings of the Eighth International Conference on Pattern Recognition, Paris, France, October 1986.
- (C223) G. X. Ritter and **P. D. Gader**, "Image Algebra Implementations on Cellular Array Computers," Proceedings of the IEEE Computer Society Workshop on Computer Architecture for Pattern Analysis and Image Database Management, Miami Beach, FL, November 1985.

CONFERENCE PRESENTATIONS

D. K. C. Ho, **P. D. Gader**, Joseph N. Wilson, "Subspace Processing on the Energy Density Spectrum for Landmine Detection", Presented at UXO-Countermine Forum 2007, Orlando FL, August 2007.

J. N. Wilson, **P. D. Gader**, D. K. C. Ho, "Sensor Fusion for Autonomous Mine Detection", Presented at UXO-Countermine Forum 2007, Orlando FL, August 2007.

H. Frigui, Lijun Zhang, and **P. D. Gader**, "Comparison of Different Algorithm Fusion Methods for Landmine Detection with GPR", Presented at UXO-Countermine Forum 2007, Orlando FL, August 2007.

W. H. Lee, **P. D. Gader**, J. N. Wilson, "Optimizing functions of ROC curves for landmine detection", Presented at IEEE International Geoscience and Remote Sensing Symposium, Denver CO.. August 2006.

J. N. Wilson, **P. D. Gader**, T. C. Glenn, K. C. Ho, "Sensor fusion for automated hand-held landmine discrimination", Presented at IEEE International Geoscience and Remote Sensing Symposium, Denver CO.. August 2006.

P. D. Gader "HSI/SAR Fusion Using Choquet Integration for Airborne Mine Detection" Presented at SIAM 2005 National Meeting, Minisymposium on Mathematics in Landmine Detection, New Orleans, LA, July 2005 (invited talk)

P. D. Gader, "Displacement Ranks for Group Matrices," Presented at the SIAM 1988 National Meeting, Minneapolis, MN, July 1988.

P. D. Gader, "Numerical Factorization of Matrices into Products of Local Matrices," Presented at the SIAM Conference on Applied Linear Algebra, Madison, WI, May 1988.

P. D. Gader, "Elementary Number and Group Theory in Computer Science and Engineering," Presented at Wisconsin Section of Math Association of America Annual Meeting, La Crosse, WI, April 1988.

P. D. Gader, "An Algebraic Approach to the Development of Parallel Algorithms for Two-Dimensional Discrete Fourier Transforms," Presented at the SIAM 1986 National Meeting, Boston, MA, July 1986.

TUTORIALS, WORKSHOPS AND SPECIAL PRESENTATIONS

“Probabilistic and Deterministic Unmixing for Imaging Spectroscopy”, presented at Dagstuhl Seminar on Hyperspectral, Multispectral, and Multimodal (HMM) Imaging: Acquisition, Algorithms, and Applications, Schloss-Dagstuhl, Leibniz-Zentrum für Informatik, Saarbrücken, Germany, Oct. 9-13, 2017.

“Possibilistic Ambiguity Preserving Classification in Hyperspectral Image Analysis”, Distinguished Speaker, College of Engineering, University of Texas – El Paso, Feb. 23, 2017.

“Hyperspectral Image Analysis: How to see inside a pixel”, Invited Speaker, Cinvestav (University) Guadalajara, Mexico, November, 2016.

“Nonlinear Unmixing of Hyperspectral Images”, Tutorial taught with Dr. Rob Heylen, University of Antwerp, Belgium at the 8th Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS), Los Angeles, CA, August 2016.

“Hyperspectral Image Analysis”, Invited Talk, ECE Department, University of Massachusetts, Amherst, MA, USA, October 2012.

“Nonlinear spectral unmixing: An overview with applications”, Invited Talk at Universidad de Las Palmas, Gran Canaria, Canary Islands, September, 2012.

“Models and Algorithms for Linear & Nonlinear Hyperspectral Unmixing”, Presentation to Technical Staff of Commonwealth Scientific and Industrial Research Organisation (CSIRO), July 2012.

“Hyperspectral Image Analysis: How to See Inside a Pixel”, Keynote Talk at Alternative Sensing Modalities for Robotic Perception Workshop, part of the Robotic Science and Systems Conference, Sydney, Australia, July 2012.

“Nonlinear Unmixing of Hyperspectral Images”, Invited Talk, University of Pavia, Pavia, Italy, April, 2012.

“Ground Penetrating Radar and Hyperspectral/LIDAR Image Analysis for Buried and Occluded Object Detection” Invited Talk, Naval Surface Warfare Center, Panama City Beach, Florida, USA, October 2011.

“Soft Computing for Hard Pattern Recognition Problems”, Keynote Talk at the IEEE Conf. Fuzzy Systems, Taipei, Taiwan, July 2011.

“Piece-wise Convex Hyperspectral Endmember Distribution Detection”, Invited Talk, ECE Department, University of Puerto Rico – Mayaguez, Mayaguez, Puerto Rico, December 2010.

“Pattern Recognition for Humanitarian De-Mining”, Presentation as a Member of an Invited Panelist for Panel on Applications of Image and Signal Processing in the Preservation of the Environment, International Conference on Pattern Recognition (ICPR 2002), Quebec City, Quebec, Canada, August 2002.

“Hidden Markov Models for Landmine Detection with Ground Penetrating Radar”, Presented to the Research Staff of TNO Physics and Electronics Laboratory, The Hague, The Netherlands, September 2000.

“Soft Computing Techniques for GPR Detection and Fusion”, Presented at Joint U. S. / European Research on De-mining Technologies, Sponsored by the European Commission’s Joint Research Center, the U. S. Army Electronics Technology and Devices Lab, and the European Research Office, Ispra, Italy, July 2000.

“Introduction to Morphological Image Processing,” Short course co-taught with Edward Dougherty at the IS&T Symposium on Electronic Imaging Science and Technology, San Jose, CA, Feb. 10, 1997.

“Applications of Fuzzy Sets in Handwriting Recognition,” Presented to the Electronic Imaging Working Group Meeting at the IS&T/SPIE Symposium on Electronic Imaging, San Jose, CA, Jan. 30, 1996.

“A Comparison of Fuzzy Logic and Neural Network Methods for Street Number Location in Handwritten Addresses,” Presented to the Bay Area OCR Group at Apple Computer, San Jose, CA, Feb. 1, 1996.

FUNDED RESEARCH Total ≈ \$15.3 Million

Sponsors

- Air Force
- Army
- DARPA
- DoD
- Geo-Centers (Industry)
- Harris (Industry)
- Missouri Dept. of Transportation
- National Science Foundation
- Sandia National Lab
- Signalscape (Industry)
- Strategic Environmental R & D Program
- U. S. Postal Service
- Electronics and Space Corporation (Industry)

TEACHING

Ph.D. Dissertations Supervised (22)

- 2017 *Possibilistic Classification Using Gaussian Process Prior* by Leila Kalantari
- 2014 *Normalized Maximum Likelihood on Variable Length Sequence Datasets* by Joshua Horton
- 2014 *Bayesian Hyperspectral Unmixing and Endmember Detection with MultiVariate Beta Distributions* by Dmitri Dranishnikov
- 2013 *Context-Dependent Detection in Hyperspectral Imagery* by Taylor Glenn
- 2011 *Endmember And Proportion Estimation Using Physics-Based Macroscopic And Microscopic Mixture Models* by Ryan Close
- 2011 *Context-Based Classification Via Data-Dependent Mixtures Of Logistic And Hidden Markov Model Classifiers* by Seniha Esen Yuksel
- 2010 *Fast Physics-Based Methods for Wideband Electromagnetic Induction Data Analysis* by Ganesan Ramachandran
- 2009 *Robust Kernel Methods in Context-dependent Fusion* by Gyeongyong Heo
- 2009 *Automatic Feature Learning and Parameter Estimation for Hidden Markov Models Using MCE and Gibbs Sampling* by Xuping Zhang
- 2009 *Optimized Dictionary Design and Classification Using the Matching Pursuits Dissimilarity Measure* by Raazia Mazhar
- 2008 *Hyperspectral Endmember Detection and Band Selection Using Bayesian Methods* by Alina Zare
- 2008 *Random Set Framework for Context-Based Classification* by Jeremy Bolton
- 2008 *Information Fusion and Sparsity Promotion using Choquet Integrals* by Andres Mendez-Vazquez.
- 2007 *Piecewise Linear Lattice Based Associative Memories* by John McElroy.
- 2003 *New Sequence Processing Algorithms using Hidden Markov Models* by Mihail Popescu.
- 2000 *Choquet Integral Based Morphological Operators with Applications to Object Detection and Information Fusion* by Ali Koksal Hocaoglu.
- 2000 *Word Level Training of Handwritten Word Recognition Systems* by Wen-Tsong Chen.
- 2000 *Morphological Granulometric Estimation with Random Primitives and Applications to Blood Cell Counting* by Nipon Theera-Umpou.

- 1999 *Improving Shared-Weight Neural Networks Generalization Using Regularization Theory and Entropy Maximization* by Mohamed Khabou.
- 1995 *Handwritten Word Recognition using Generalized Hidden Markov Models* by Magdi Mohamed.
- 1995 *Nonlinear Correlation Filter and Morphology Neural Networks for Image Pattern and Automatic Target Recognition* by Yonggwon Won.
- 1995 *Hybrid Fuzzy Neural Systems for Robust Handwritten Word Recognition* by Jung-Hsien Chiang.

Post-Doctoral Associates Supervised

- 1) Dr. H. Frigui (Dec 97 – Aug 98) (University of Missouri)
- 2) Dr Brijesh Verma (Jan 99 – Nov 99) (University of Missouri)
- 3) Dr. Jinhui Liu (Jan 99 – December 2000) (University of Missouri)
- 4) Dr. Mirosław Mystkowsky (Dec 99 – Aug 01) (University of Missouri)
- 5) Dr. Nipon Theera-Umpon (May 00 – May 01) (University of Missouri)
- 6) Dr. Guoqing Liu (joint with Dr. Li of ECE) (Oct. 01 – Aug 02) (University of Florida)
- 7) Dr. Ali Koksal Hocaoglu (Fall 01 – August 04) (University of Missouri and University of Florida)
- 8) Dr. Wen-Hsiung Lee (Spring 02 – Aug 06) (University of Florida)
- 9) Dr. Alina Zare (January 2009 – August 2010) (University of Florida)
- 10) Dr. Jeremy Bolton (January 2009 – 2012) (University of Florida)
- 11) Dr. Rob Heylon (Oct. 2012 – April 2013) (University of Florida)
- 12) Dr. Hamdi Jenzri (August 2014 – December 2014) (University of Florida)

COURSES TAUGHT AT THE UNIVERSITY OF MISSOURI

CECS 476:	Pattern Recognition (Graduate Course)
ECE 471:	Neural Network Based Computing Systems (Graduate Course)
CS 425:	Artificial Intelligence II (Graduate Course)
ECE 474:	Artificial Intelligence (Graduate Course)
ECE 458:	Introduction to Modeling and Management of Uncertainty (Graduate Course)
ECE 401:	Image Algebra and Morphological Image Processing (Graduate Course)
ECE 365:	Introduction to Digital Image Processing (Senior Lab Course)
ECE 227:	Algorithms and Software Design with the C Language (Junior Course)
ENGR 20:	Introduction to Computer Programming with PASCAL (Freshman Course)

COURSES TAUGHT / DEVELOPED WHILE AT THE UNIVERSITY OF FLORIDA (Including courses while a Visiting Professor designated by *)

CAP 6617	Advanced Machine Learning (Graduate Course) (I developed into regular course)
CAP 6615	Neural Networks for Computing (Graduate Course)
CAP 6610:	Machine Learning (Graduate Course)
CAP 4621:	Artificial Intelligence (Senior Course)
CAP 4410:	Digital Image Processing (Senior Course)
COT 3100:	Applied Discrete Structures (Junior Course)
CIS 6930:	Fuzzy Sets and Fuzzy Logic (Graduate Special Topics)
CIS 6930/COT 5615:	Math for Intelligent Systems (Grad Special Topics) (I developed into regular course)
CIS 6930	Hidden Markov Models (Graduate Special Topics Course)
CIS 6930	Subsurface Sensing Algorithms (Graduate Special Topics Course)
CIS 6930	Elements of Statistical Learning (Grad Special Topics Course, co-taught with Statistics)
CIS 4930	Introduction to Computational Intelligence (Undergraduate Special Topics Course)
CIS 6930/4930	Hyperspectral Image Analysis (Graduate / Undergraduate Special Topics Course)
ENV 6932	Computer Programming for Environmental Research (Graduate Special Topics Course)

*Winter 2016 Deep Learning (Graduate Course), University of California – Santa Barbara, CS Department

*Winter 2012 Digital Image Processing (Undergraduate Course), Grenoble Institute of Technology, France

National / International SERVICE

Tutorials and Short Courses

Tutorial: Nonlinear Unmixing for Hyperspectral Images and Imaging Spectroscopy
(with Dr. Rob Heylen, University of Antwerp, Belgium)

8th Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing
(WHISPERS) August 2016.

10th European Association of Remote Sensing Laboratories (EARSeL), Imaging Spectroscopy
Workshop, April 2017

Short Course: Classification of Hyperspectral Data using Python
NSF National Ecological Observatory Network (NEON) Data Skills Workshop, June 2017.

Panels

Pattern Recognition for Humanitarian Demining, ICPR Panel, (2002).

Invited serve White House Science panel on Evaluation of New Technologies for Humanitarian Demining, (2002).

Member of United States Army Hand-held Standoff Mine Detection System Red Team, (1998-1999).

NSF Panel, Interactive Systems Division, (Gary Strong, Program Director), (1996).

Memberships

Fellow International Institute of Electrical and Electronics Engineers (IEEE)
Member Society of Photo-Optical and Instrumentation Engineers (SPIE)

International Committees

IEEE Society/Technical Council Fellow Evaluation Committee, 2011

Honors

University of Florida Research Foundation Professor

Outstanding Junior Faculty Research Award, University of Missouri, College of Engineering, March 1996.

Technical Director of Army Research Office Multi-University Research Initiative on Humanitarian De-Mining.
(University of Missouri, University of Kansas, and Carnegie Mellon University), (1999-2002).

Best Paper Award, IEEE Transactions Fuzzy Systems, 2000.

Associate Editor

IEEE Geoscience and Remote Sensing Letters (2009 – 2013)

IEEE Transactions Fuzzy Systems (2004-2007)

Journal of Mathematical Imaging and Vision

Journal of Electronic Imaging (1996-1999)

Journal Guest Editor

IEEE Signal Processing Magazine, Hyperspectral Signal and Image Processing, 2012-13

IEEE Transactions on Fuzzy Systems, Special Issue on Recognition Technology, February 2001.

Journal of Mathematical Imaging and Vision, September 1992.

Conference Chair

SPIE Conference on Image Algebra and Morphological Image Processing (1990-1994)
IEEE Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (2013).

Area/Theme Chair

Landmine and Unexploded Ordnance Detection, IEEE Int'l Conference Geo-science and Remote Sensing (2010)
Landmine and Unexploded Ordnance Detection, IEEE Int'l Conference Geo-science and Remote Sensing (2008)
Pattern Recognition and Image Processing, IEEE Int'l Conference Neural Networks, (1997).
Pattern Recognition and Clustering Area, IEEE Int'l Conference Fuzzy Systems, (1998).

Keynote Speaker

IEEE International Conference on Fuzzy Systems, Taipei, Taiwan (2011)
Robotics Science and Systems, Sydney, Australia, (2012)

Session Chair

IEEE World Congress on Computational Intelligence, Special Session on AGOPs in Practice, (2008)
IEEE Int'l Conference Geo-science and Remote Sensing, Special Session Subsurface Sensing, (2008)
International Workshop on Frontiers of Handwriting Recognition, (September 2000)
Detection & Remediation Technologies for Mines and Minelike Targets (2000-2009)
IEEE International Conference on Fuzzy Systems (1998, 2003)
Fuzzy Sets in Handwriting Recognition, NAFIPS '96 (June 1996)
IEEE Conference on Systems, Man, and Cybernetics (October 1995)

Program Committee

IEEE Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing, (2011-2012)
IEEE International Conference on Fuzzy Systems (1998, 2001, 2003, 2005, 2008)
IEEE International Conference on Geo-science and Remote Sensing (2004, 2008, 2010, 2013)
International Workshop on Frontiers of Handwriting Recognition, (2000, 2006)
IEEE Workshop Computer Vision Beyond the Visible Spectrum (1999-2001)
International Conference on Pattern Recognition (ICPR) (1998, 2006)
SPIE Conference on Nonlinear Imaging (1996-1998)
NAFIPS (1996, 2001, 2002)

Organizing Committee

IEEE World Congress on Computational Intelligence (2010)

Paper Reviewer

IEEE Computer
IEEE Geoscience and Remote Sensing Letters
IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)
IEEE Sensors
IEEE Transactions on Pattern Analysis and Machine Intelligence
IEEE Transactions on Fuzzy Systems
IEEE Transactions on Image Processing
IEEE Transactions on Knowledge and Data Engineering
IEEE Transactions on Signal Processing
IEEE Transactions on Antennas and Propagation

IEEE Transactions on Geoscience and Remote Sensing
IEEE Transactions on Systems, Man, and Cybernetics
IEEE World Congress on Computational Intelligence (WCCI)
IEEE Workshop Hyperspectral Image & Signal Analysis... (WHISPERS)
Fuzzy Sets and Systems
Journal of Information Fusion
Journal of Information Science
International Conference on Pattern Recognition (ICPR)
International Conference Neural Networks (ICNN)
International Conference on Frontiers of Handwriting Recognition (ICFHR)
International Workshop on Frontiers of Handwriting Recognition (IWFHR)
ISPRS Journal of Photogrammetry and Remote Sensing
Journal of Real-Time Imaging
Journal of Mathematical Imaging and Vision
Journal of Electronic Imaging
Pattern Recognition Letters
Pattern Recognition
Signal Processing