

CURRICULUM VITAE

PERSONAL INFORMATION

Name: WEIFENG "AARON" LIU
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EDUCATION

2008 Ph.D. Electrical and Computer Engineering, University of Florida
2005 M. Sc. Electrical Engineering, Shanghai Jiao Tong University
2003 B. Sc. Electrical Engineering, Shanghai Jiao Tong University

RESEARCH INTERESTS

Adaptive filtering, kernel methods, machine learning, neural networks, nonlinear signal processing, pattern analysis

PROFESSIONAL EXPERIENCE

2008-pres. Engineer of Demand Forecasting, Amazon.com Inc., Seattle, Washington, USA
Concentration: Demand forecasting, seasonality modeling and large-scale data mining, distributed system design/implementation

2005-2008 Research Assistant, Computational NeuroEngineering Laboratory, University of Florida, Gainesville, Florida, USA
Concentration: Adaptive filtering, machine learning and nonlinear signal processing

2003-2005 Research Assistant, Bell Joint Lab, Shanghai Jiao Tong University, Shanghai, China
Concentration: Wireless communications, reconfigurable radio and embedded system design

PUBLICATIONS

Books and book chapters

6. Weifeng Liu, J. C. Principe, Simon Haykin. Kernel Adaptive Filtering: A Comprehensive Introduction, under contract with John Wiley, expected publication 2009

5. Jose C. Principe, Deniz Erdogmus, Weifeng Liu, "Adaptive Information Filtering with Error Entropy and Error Correntropy Criteria," in *Information Theoretic Learning: Renyi's Entropy and Kernel Perspectives*, J. C. Principe, Springer Verlag, 2009 (Chapter 3)
4. Jose C. Principe, Deniz Erdogmus, Rodney Morejon, Weifeng Liu, "Nonlinear Adaptive Filtering with MEE, MCC and Applications," in *Information Theoretic Learning: Renyi's Entropy and Kernel Perspectives*, J. C. Principe, Springer Verlag, 2009 (Chapter 5)
3. Jose C. Principe, Weifeng Liu, P. Pokharel, J. Xu, Sohan Seth, "Correntropy for Random Variables: Properties, and Applications in Statistical Inference," in *Information Theoretic Learning: Renyi's Entropy and Kernel Perspectives*, J. C. Principe, Springer Verlag, 2009 (Chapter 10)
2. Jose C. Principe, P. Pokharel, I. Santamaria, J. Xu, K. Jeong, Weifeng Liu, R. Li, "Correntropy for Random Processes: Properties, and Applications in Signal Processing," in *Information Theoretic Learning: Renyi's Entropy and Kernel Perspectives*, J. C. Principe, Springer Verlag, 2009 (Chapter 11)
1. Rendong Ying, Xiaolan Zhang, Lichun Shao, Weifeng Liu, "Remote Control Solution for Household Electrical Appliances based on JINGWEI Reference Board (Intel StrongARM SA-1110)," in *Selected Designs of National Undergraduate Embedded System Design Contest*, Shanghai Jiao Tong University Press, 2002

Journal papers

9. Weifeng Liu, Il Park, J. C. Principe, "An information theoretic approach of designing sparse kernel adaptive filters," *IEEE Transactions on Neural Networks*, 2009 (accepted)
8. P. Pokharel, Weifeng Liu, J. Principe, "A Low Complexity Robust Detector in Impulsive Noise," *Signal Processing*, Volume 89, Issue 10, Pages 1902-1909, October 2009
7. Weifeng Liu, Il Park, Yiwen Wang, J. Principe, "Extended Kernel Recursive Least Squares Algorithm," *IEEE Transactions on Signal Processing*, 2009 (accepted)
6. P. Pokharel, Weifeng Liu, J. Principe, "Kernel Least Mean Square Algorithm with Constrained Growth," *Signal Processing*, Volume 89, Issue 3, March 2009
5. Kyu-Hwa Jeong, Weifeng Liu, S. Han, E. Hasanbelliu, J. Principe, "The correntropy MACE filter," *Pattern Recognition*, 2009, doi:10.1016/j.patcog.2008.09.023
4. Weifeng Liu and J. Principe, "Kernel Affine Projection Algorithms," *EURASIP Journal on Advances in Signal Processing*, vol. 2008, Article ID 784292, 12 pages, 2008. doi:10.1155/2008/784292
3. Weifeng Liu, P. P. Pokharel, J. C. Principe, "Kernel Least Mean Square Algorithm," *IEEE Transactions on Signal Processing*, Volume 56, Issue 2, 2008
2. Weifeng Liu, P. P. Pokharel, J. C. Principe, "Correntropy: Properties and Applications in Non-Gaussian Signal Processing," *IEEE Transactions on Signal Processing*, Vol. 55, Issue 11, 2007
1. Ruijiang Li, Weifeng Liu, J. C. Principe, "A unifying criterion for blind source separation

based on correntropy,” *Signal Processing*, Volume 87, Issue 8, Pages 1872-1881, August 2007

Conference papers

9. Weifeng Liu, J. Principe, "Extended recursive least squares algorithm in RKHS," 1st IAPR Workshop on Cognitive Information Processing, 2008
8. Weifeng Liu, J. Principe, "The wellposedness analysis of kernel adaline," Intl. Joint Conf. on Neural Networks, 2008
7. Dongliang Duan, Weifeng Liu, Pengwen Chen, M. Rao, J. Principe, "Variance and bias analysis of information potential and symmetric information potential," IEEE Int. Workshop on Machine Learning for Signal Processing, 2007
6. Weifeng Liu, P. Pokharel, J. Principe, "Recursively Adapted Radial Basis Function Networks and its Relationship to Resource Allocating Networks and Online Kernel Learning," IEEE Int. Workshop on Machine Learning for Signal Processing, 2007
5. P. P. Pokharel, Weifeng Liu, J. C. Principe, "Kernel LMS," International Conference on Acoustics, Speech, and Signal Processing, 2007
4. Weifeng Liu, P. P. Pokharel, J. C. Principe, "A New information theoretic Measure of PDF Symmetry," International Conference on Acoustics, Speech, and Signal Processing, 2007
3. Sudhir Rao, Allan de Medeiros Martins, Weifeng Liu, Jose C. Principe, "Information Theoretic Mean Shift Algorithm," IEEE Int. Workshop on Machine Learning for Signal Processing, 2006
2. Weifeng Liu, P. P. Pokharel, J. C. Principe, "Error Entropy, Correntropy and M-Estimation," IEEE Int. Workshop on Machine Learning for Signal Processing, 2006
1. Weifeng Liu, P. P. Pokharel, J. C. Principe, "Correntropy: A Localized Similarity Measure," Intl. Joint Conf. on Neural Networks, 2006

PATENTS

- UF disclosure #12958- High Capacity Content Addressable Memory, (Principe, Hasanbelliu and Liu), 2009
- UF disclosure #12306 - Robust Signal Detection Using Correntropy, (Principe and Liu), 2006

TEACHING ACTIVITIES

- EEL 6935 Information Theoretic Learning, Spring 2008 (Lecturer with Prof. Jose Principe)
- EEL 5701 Fundamentals of Digital Signal Processing, Summer 2006 (Teaching assistant of Prof. Fred Taylor)
- EEL 3003 Elements of Electrical Engineering 2, Spring 2006 (Teaching assistant of Prof. Fred Taylor)
- EEL 3003 Elements of Electrical Engineering 1, Fall 2005 (Teaching assistant of Prof. Fred Taylor)

REVIEWING ACTIVITIES

IEEE transactions on neural networks (5 manuscripts)
IEEE transactions on signal processing (1 manuscript)
IEEE Signal Processing Letters (1 manuscript)
IEEE transactions on industrial informatics (1 manuscript)
Neurocomputing (3 manuscripts)
Signal Processing (6 manuscripts)
2009 International Conference on Acoustics, Speech, and Signal Processing (3 manuscripts)
2009 IEEE International Workshop on Machine Learning for Signal Processing (6 manuscripts)
2009 International Conference on Artificial Neural Networks (1 manuscript)
2008 International Conference on Acoustics, Speech, and Signal Processing (8 manuscripts)
2008 IEEE International Workshop on Machine Learning for Signal Processing (5 manuscripts)
2008 IEEE World Congress on Computational Intelligence (9 manuscripts)
2007 International Conference on Acoustics, Speech, and Signal Processing (6 manuscripts)

CONFERENCE ACTIVITIES

Program Committee, IEEE International Workshop on Machine Learning for Signal Processing, Grenoble, France 2009

Online Kernel Learning, Invited Talk, 2008 IEEE International Workshop on Machine Learning for Signal Processing, Cancún, Mexico , October 2008.

Technical Committee, 2008 IEEE World Congress on Computational Intelligence, Hong Kong, June 2008.

Program Committee, IEEE International Workshop on Machine Learning for Signal Processing, Cancún, Mexico , 2008.

EDITORIAL ACTIVITIES

Associate Editor, Neural Processing Letters, 2009

SOCIETIES AND ORGANIZATIONS

Eta Kappa Nu (Scholastic Honorary) 2006

Institute of Electrical and Electronic Engineers (Member) 2005

HONORS and AWARDS

Titles and Honors

2007 Outstanding Student of University of Florida

- 2006 Certificate of Outstanding Achievement of University of Florida
- 2003 Outstanding Graduate of Shanghai City (top 1%) (Shanghai)
- 2002 3 GOOD STUDENT of Shanghai Jiao Tong University
- 2002 2nd round Exceptional Student of Shanghai Jiao Tong University (top 1%)
- 2000 1st round Exceptional Student of Shanghai Jiao Tong University (top 1%)

Scholarships and Fellowships

- 2005-2008 Graduate Assistantship of University of Florida
- 2005 Graduate Fellowship of University of Florida
- 2004 Hua Wei Scholarship (SJTU)
- 2003 Outstanding Graduate Fellowship
- 2002 Zhang Xu Scholarship (SJTU)
- 2001-2002 Excellent Academic Scholarship Class A (top 5%) (SJTU)
- 2000-2001 Excellent Academic Scholarship Class B (SJTU)
- 1999-2000 Excellent Academic Scholarship Class A (top 5%) (SJTU)
- 1997-2003 Shu Ping Scholarship (top 1%) (Shanghai)

Other Awards

- 2007 Engineering Bowl Champion of University of Florida
- 2004 Third Place (China) in National Programming Contest (Micro Trend®)
- 2003 Honorable Mention in MCM (International)
- 2002 Second Prize (China) in National Undergraduate Electronic Design Contest (Intel®)
- 2002 First Prize (China) in China Undergraduate Mathematical Contest in Modeling
- 2002 First Prize (Shanghai) in China Undergraduate Mathematical Contest in Modeling