

Chen Chen

319 N Jackson Street
Parkside Apt 6E
Starkville, MS 39759

Phone: (513)306-1788
Email: chenchen870713@gmail.com
WWW: <http://www.ece.msstate.edu/~cc1164/>

Education

- **Mississippi State University**, Starkville, MS May 2012 (expected)
Master of Science in Electrical Engineering
Thesis advisor: Prof. James E. Fowler
Current GPA: 3.70/4.00
Thesis: Multihypothesis Prediction for Compressed Sensing and Super-resolution of Images
- **Beijing Forestry University**, Beijing, China Sep 2005 – July 2009
Bachelor of Engineering, Automation
Thesis advisor: Prof. Ning Han
Thesis: A Fast Inter-mode Decision Algorithm for H.264/AVC

Relevant Coursework

Image and Video Coding	Random Signals & Systems	Introduction to Wavelets
Digital Image Processing	Regression Analysis	Digital Signal Processing
Numerical Analysis I	Information Theory	Pattern Recognition

Research Experience

- **Compressed-sensing (CS) Images Recovery Using Multihypothesis Prediction**
 - Developed a novel CS images recovery algorithm using multihypothesis prediction. To appropriately weight the hypothesis predictions, a Tikhonov regularization to an ill-posed least-squares optimization is proposed.
 - Achieved significant improvement in CS reconstructed images quality in terms of PSNR over some popular algorithms such as Total Variation (TV) minimization.
 - Multihypothesis prediction is also used as post processing for hyperspectral data reconstruction from random projections. The SNR of the reconstructed hyperspectral data improved significantly using multihypothesis prediction. Higher classification rate and anomaly detection rate can be achieved based on the reconstructed data.
- **Single Image Super-resolution Using Multihypothesis Prediction**
 - Developed a novel algorithm using multihypothesis prediction drawn from the low resolution image for single image super-resolution. Tikhonov regularization to an ill-posed least-squares optimization is applied to appropriately weight the hypothesis predictions. No high resolution training data is used.
 - The algorithm can be transferred to video super-resolution without explicit motion estimation.
- **Experimental Study on Video Encoder of Forest Fire Prevention Communication System Based on FPGA**
 - Developed a novel fast inter frame prediction algorithm for H.264.
 - Simulated DCT module and mode decision module of H.264 encoder based on Quartus II 8.0 platform and ModelSim SE6.2b simulation tool.

Teaching Experience

- **Graduate Teaching Assistant** July – August 2011
Department of Electrical and Computer Engineering
Mississippi State University
Course: ECE 3443 Signal and System

- **Graduate Teaching Assistant** Spring 2011
 Department of Electrical and Computer Engineering
 Mississippi State University
Course: ECE 3443 Signal and System
Course: ECE 3183 Electric Engineering Systems

- **Graduate Teaching Assistant** Fall 2010
 Department of Electrical and Computer Engineering & Department of Mathematics and Statistics
 Mississippi State University
Course: ECE 3183 Signal and Systems
Course: ST 6523 Introduction to Probability

- **Graduate Teaching Assistant** Summer 2010
 Department of Electrical and Computer Engineering
 Mississippi State University
Course: ECE 3443 Signal and System
Course: ECE 3413 Introduction to Electronic Circuits

- **Graduate Teaching Assistant** Fall 2009 – Spring 2010
 Department of Electrical and Computer Engineering
 Mississippi State University
Course: ECE 3413 Introduction to Electronic Circuits

- **Teaching Assistant** Jan – June 2009
 School of Technology
 Beijing Forestry University
Course: Microprocessors Lab

Industry Experience

- **Summer Intern, China Mobile Limited**, Changzhou, Jiangsu Province June – Aug 2008
 Computer programmer and Technical Support

Skills

- **Languages:** C/C++, FPGA(Verilog HDL), Matlab, SAS, L^AT_EX
- **Platforms:** Windows, Mac OS X, Linux

Professional Activities

- **Membership of Associations**
 - Student member, Institute of Electrical and Electronics Engineers (IEEE)
 - Student member, IEEE Signal Processing Society
 - Student member, IEEE Remote Sensing Society

- **Publication Review**
 - IEEE Transactions on Image Processing
 - IEEE Transactions on Signal Processing
 - Journal of Signal, Image and Video Processing by Springer

Publications

- **Journal Articles**
 - **C. Chen**, W. Li, and J. E. Fowler, “Reconstruction of Hyperspectral Imagery from Random Projections Using Multihypothesis Prediction,” submitted to *IEEE Transactions on Geoscience and Remote Sensing*, under review.

- **Conference Papers**

- **C. Chen**, E. W. Tramel, and J. E. Fowler, “Compressed-Sensing Recovery of Images and Video Using Multihypothesis Predictions,” in *Proceedings of 45th Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, Nov 2011, to appear.
- **C. Chen**, N. Han, C. Yao, and Y. Li, “A Novel Fast Inter Mode Decision Algorithm in H.264/AVC for Forest Fire Prevention Surveillance,” in *Proceedings of the 5th International Conference on Active Media Technology*, Beijing, China, October 2009, pp. 397-408.
- Y. Li, N. Han, and **C. Chen**, “A Novel Deblocking Filter Algorithm in H.264 for Real Time Implementation,” in *Proceedings of the Third International Conference on Multimedia and Ubiquitous Engineering*, Qingdao, China, June 2009, pp. 26-30.
- J. Zhang, W. Li, X. Zhao, X. Bai, and **C. Chen**, “Simulation and Research on Data Fusion Algorithm of the Wireless Sensor Network Based on NS2,” in *Proceedings of 2009 WRI World Congress on Computer Science and Information Engineering*, Los Angeles, CA, March 2009, pp. 66-70.
- N. Han, D. Song, and **C. Chen**, “Application of MVNR Algorithm on Data Analysis of Forest Inventory,” in *Proceedings of 2008 International Conference on Computer Science and Software Engineering*, Wuhan, China, Dec 2008, pp. 344-347.

- **Technical Reports**

- **C. Chen** and N. Han, “Building automation and intelligence,” Tech. Rep. Security Department of Organization of 16th Asian Games/Asian Games 2010, February 2009.

Honors and Awards

- Third Place in the “4th ‘SIEMON Cup’ National College Student Generic Cabling Contest” for paper “Study on Grounding Problems of Screen Routing in Generic Cabling System” (This contest was organized by the SIEMON Company USA & National College Intelligent Building Experts Steering Group of China.) May 2008
- Beijing Forestry University “Three Good” Scholar for top academic ranking 2008
- Beijing Forestry University First-class Scholarship 2008
- Beijing Forestry University Academic Scholarship 2008
- First place in Beijing Forestry University Website Design Contest 2007
- Beijing Forestry University Second-class Scholarship 2007
- Second Place in Beijing Forestry University “RoboCup” Contest 2006
- Beijing Forestry University Second-class Scholarship 2006