

**Ph.D. Thesis Supervision Completed**

1. Chi-hsin Wu, Ph.D., Deterministic Parallelizable Solutions for Bayesian Markov Random Field Estimation Problems, Purdue University, School of Electrical and Computer Engineering, May 1994.
2. Shan Lu, Ph.D., Nonlinear Speech Modeling with Applications to Speech Processing, Purdue University, School of Electrical and Computer Engineering, December 1995.
3. Yibin Zheng, Ph.D., Symmetry Constrained Signal Reconstruction from Spherically Averaged Fourier Transform Intensities, Purdue University, School of Electrical and Computer Engineering, May 1996.
4. Wan-Chieh Pai, Ph.D., A Modified Extended Kalman Filter Approach to Demodulation of AM-FM Signals and its Applications on Speech Signals, Purdue University, School of Electrical and Computer Engineering, December 1998.
5. Yuh-Chin Chang, Ph.D., Statistical Models for Image Restoration and Segmentation, Purdue University, School of Electrical and Computer Engineering, August 2000.
6. Zhye Yin, Ph.D., Maximum Likelihood 3-D Virus Reconstruction From Projections of Unknown Orientation and Cryo Electron Microscopy Application, Purdue University, School of Electrical and Computer Engineering, August 2003.
7. Martin H. Plawecki, Ph.D., A Physiologically-Based Pharmacokinetic (PBPK) Model for Ethanol: Mathematical Foundations, Parameter Identification, and Other Applications, Purdue University, Weldon School of Biomedical Engineering, May 2005.
8. Jae-Joon Han, Ph.D., Statistical Signal Processing and Pattern Recognition for an Implanted Ethanol Biosensor, Purdue University, School of Electrical and Computer Engineering, August 2006 (jointly advised with Professor S. B. Gelfand).
9. Cory J. Prust, Ph.D., Model-Based Inference Problems Concerning Non-Linear 3-D Tomography with Applications to the Structural Biology of Asymmetric Virus Particles, Purdue University, School of Electrical and Computer Engineering, August 2006.
10. Junghoon Lee, Ph.D., A Fast Algorithm for Maximum Likelihood 3-D Signal Reconstruction From 2-D Projections of Unknown Orientation and Applications to the Electron Microscopy of Viruses, Purdue University, School of Electrical and Computer Engineering, December 2006.
11. Youngha Hwang, Ph.D., Reconstruction from Spherically-Averaged Fourier Transform Magnitude Information and Solution X-ray Scattering, Purdue University, School of Electrical and Computer Engineering, Purdue University, School of Electrical and Computer Engineering, August 2008.
12. Yili Zheng, Ph.D., Novel statistical models and a high-performance computing toolkit for the solution of cryo electron microscopy inverse problems in viral structural biology, Purdue University, School of Electrical and Computer Engineering, August 2008.
13. Seunghee Lee, Ph.D., Maximum likelihood reconstruction of 3-D objects with helical symmetry from 2-D projections of unknown orientation and application to electron microscope images of viruses, Purdue University, School of Electrical and Computer Engineering, August 2009.
14. Kang Wang, Ph.D., Model-Based Statistical Estimation Algorithm for Functional Structural Virology, Cornell University, Graduate Field of Biomedical Engineering, December 2011.
15. Qiu Wang, Ph.D., From Homogeneous to Heterogeneous: Statistical 3-D Signal Reconstruction of Macromolecular Complexes, Cornell University, Graduate Field of Electrical and Computer Engineering, May 2013.
16. Nathan R. Cornelius, Ph.D., Mathematical Modeling and Statistical Analysis of the Cortical Microvasculature and Hemodynamic Response, Cornell University, Graduate Field of Biomedical Engineering, December 2013.
17. Ipek Ozil, Ph.D., System Identification of Dynamical Models for Signals Related to the Human Use of Ethanol, Cornell University, Graduate Field of Electrical and Computer Engineering, August 2014.

18. Nan Xu, Ph.D., Statistical modeling and inference in biological data: From brain networks to virus heterogeneity, Cornell University, Graduate Field of Electrical and Computer Engineering, May 2017.

### **M.S. Thesis Supervision Completed**

1. Shan Lu, M.S.E.E., Propagation Pathway and Phase Delay Estimation of Sound Transmitted Through Intact Human Lung, Purdue University, School of Electrical and Computer Engineering, December 1992.
2. Wen Gao, M.S.E.E., 3D Reconstruction Of Virus Structure From Electron Micrographs, Purdue University, School of Electrical and Computer Engineering, July 1998.
3. Cory J. Hoelting, M.S.E.E., Multi-Attribute Analysis of Seismic Data, Purdue University, School of Electrical and Computer Engineering, May 2000.
4. Yili Zheng, M.S.E.E., Parallel implementations of 3-D reconstruction algorithms for cryo electron microscopy: A comparative study, Purdue University, School of Electrical and Computer Engineering, August 2002.
5. Qiaoyun (Charlene) Chen, M.S.E.E., Nonlinear stochastic tomography reconstruction algorithms for objects with helical symmetry and applications to virus structures, Cornell University, Graduate Field of Electrical and Computer Engineering, December 2008.

### **M.Eng. Project Supervision Completed**

1. Nathan Raj Cornelius, Image processing for scanning laser images of moving blood cells, Cornell University, Graduate Field of Electrical and Engineering, May 2007 (jointly supervised with Professor Christopher B. Schaffer).
2. John Sunwoo, Computation of neural microvasculature flows from partial information derived from two-photon laser scanning microscopy, Cornell University, Graduate Field of Biomedical Engineering, August 2011.
3. Tejapratap Bollu, Inverse problems for cortical microvascular flow based on two-photon laser scanning microscopy and models for cortical perfusion, Cornell University, Graduate Field of Biomedical Engineering, May 2012.
4. Hsin-I Lin, Image processing for the detection of functional connections in brain function MRI, Cornell University, Graduate Field of Biomedical Engineering, May 2012.
5. Parallel implementation in `python` using MPI of a software system for the computation of heterogeneous 3-D reconstructions of nanometer scale objects from electron micrographs, Cornell University. The team, with various graduation dates, consisted of
  - (a) Yunhan Wang; Graduate Field of Biomedical Engineering, December 2013; Graduate Field of Computer Science, August 2014.
  - (b) Xiao Ma, Graduate Field of Electrical and Computer Engineering Engineering, May 2014.
  - (c) Zhengyu Cai, Graduate Field of Electrical and Computer Engineering Engineering, May 2014.
  - (d) Shenghan Gao, Graduate Field of Electrical and Computer Engineering Engineering, December 2014.
  - (e) Yayi Li, Graduate Field of Electrical and Computer Engineering Engineering, December 2014.
  - (f) Yu Tang, Graduate Field of Computer Science, May 2014.
6. Image segmentation for real-time vocal-tract MRI, Cornell University. The team, with various graduation dates, consisted of
  - (a) Yaolin Wang, Graduate Field of Electrical and Computer Engineering, May 2014.
  - (b) Yunbin Sang, Graduate Field of Electrical and Computer Engineering, December 2014.
7. A `python` implementation of algorithms for reconstructing the 3-D statistics of objects visualized in electron microscopy images, Cornell University. The team consisted of
  - (a) Xiaofei Chang, Graduate Field of Electrical and Computer Engineering, May 2015.

- (b) Kainan Qi, Graduate Field of Electrical and Computer Engineering, May 2015.
  - (c) Weidan Yan, Graduate Field of Electrical and Computer Engineering, May 2015.
  - (d) Pei Heng Zeng, Graduate Field of Electrical and Computer Engineering, May 2015.
  - (e) Wen Zhu, Graduate Field of Electrical and Computer Engineering, May 2015.
  - (f) Yiming Jia, Graduate Field of Electrical and Computer Engineering, May 2015.
  - (g) Guantian Zheng, Graduate Field of Electrical and Computer Engineering, May 2015.
  - (h) Dan Zhang, Graduate Field of Electrical and Computer Engineering, May 2015.
  - (i) Eva Sharma, Graduate Field of Computer Science, May 2015.
  - (j) Nan Kang, Graduate Field of Electrical and Computer Engineering, May 2015.
8. Vocal tract geometry from segmentation of real-time MRI, Cornell University. The team consisted of
- (a) Tao Lu, Graduate Field of Electrical and Computer Engineering, May 2015.
  - (b) Yifan Liu Graduate Field of Electrical and Computer Engineering, May 2015
9. A software simulator for resting-state functional MRI, Cornell University. The team consisted of
- (a) Siyu Dong, Graduate Field of Electrical and Computer Engineering, May 2015.
  - (b) Seung Hoon Choe Graduate Field of Biomedical Engineering, May 2015.
  - (c) Chudi Huang, Graduate Field of Electrical and Computer Engineering, May 2015.
  - (d) Jingyi Chen, Graduate Field of Electrical and Computer Engineering, May 2015.
  - (e) Nan Wang, Graduate Field of Electrical and Computer Engineering, May 2015.
  - (f) Zheng Chen, Graduate Field of Electrical and Computer Engineering, May 2015.
  - (g) Tianyi Ding, Graduate Field of Electrical and Computer Engineering, May 2015.
  - (h) Xijia Wang, Graduate Field of Electrical and Computer Engineering, May 2015.
10. A *python* implementation of algorithms for reconstructing the 3-D statistics of objects visualized in electron microscopy images, Cornell University. The team consists of
- (a) Anqi Yu, Graduate Field of Electrical and Computer Engineering, May 2016.
  - (b) Mengyuan Yang, Graduate Field of Electrical and Computer Engineering, May 2016.
11. Use of general-purpose GPUs for statistical image computations. Cornell University. The team consists of
- (a) Minmin Gong, Graduate Field of Electrical and Computer Engineering, May 2016.
  - (b) Yiwon Wang, Graduate Field of Electrical and Computer Engineering, May 2016.
12. Use of MPI in *Python* for distributed-memory parallel statistical image computations. Cornell University.
- (a) Xiaokai Zhao, Graduate Field of Electrical and Computer Engineering, May 2016.
13. Mathematical models for transdermal ethanol sensors
- (a) Weiyou Dai, Graduate Field of Electrical and Computer Engineering, December 2018.
14. Deep learning for classifying particle images in cryo electron microscopy
- (a) Shuheng Lin, Graduate Field of Electrical and Computer Engineering, May 2018.
  - (b) Yiqi Yu, Graduate Field of Electrical and Computer Engineering, May 2018.
15. Applications of deep learning in microscopy
- (a) Darshan Kumar S. Yaradoni, Graduate Field of Electrical and Computer Engineering, May 2019.
  - (b) Anirudh Raghavendra, Graduate Field of Electrical and Computer Engineering, May 2019.
  - (c) Mengfei Xiong, Graduate Field of Electrical and Computer Engineering, Started Fall 2018, degree anticipated May 2019.
  - (d) Han Shi, Graduate Field of Electrical and Computer Engineering, Started Fall 2018, degree anticipated May 2019.