Yi Grace Wang

CONTACT INFORMATION

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RESEARCH INTERESTS

Computational Harmonic Analysis, Machine Learning, Dictionary Learning, Unsupervised Learning, Computer Vision, Image Processing and Bioinformatics.

EDUCATION

University of Minnesota, Minneapolis, Minnesota USA

Ph.D., Mathematics, expected June 2012

- Thesis Topic: "Robust Locally Linear Analysis and its Applications" advised by Gilad Lerman

M.S., Statistics, expected June 2012
M.S., Mathematics, June 2010

Huazhong University of Science and Technology (HUST), Wuhan, Hubei China

B.A., Mathematics, June 2005

ACADEMIC EXPERIENCE

University of Minnesota, Minneapolis, Minnesota USA

Graduate Student **August, 2006 - present**
Includes current Ph.D. research, Ph.D. and Masters level coursework and projects.

Research Assistant **January, 2010 - present**
Explore and develop methods, algorithms and theories on research projects. Publish valuable results.

MCM Advisor **October, 2010**
Helped with the training session, evaluation of the final papers and advising in the Mathematical Contest in Modeling (MCM), Institute of Mathematics and Its Applications (IMA).

REU Mentor **June 14-July 16, 2010**
Co-presented the problem, led students into simulations and answered questions in the special program, Interdisciplinary Research Experience for Undergraduates (REU), IMA.

PUBLICATIONS

Wang, Y. and Porikli, F., *Multiple Dictionary Learning for Blocking Artifacts Reduction*, accepted. To appear in IEEE International Conference on Acoustics, Speech, and Signal Processing, 2012.

Wang, Y., Szlam, A. and Lerman, G., *Robust Locally Linear Analysis with Applications to Image Denoising and Blind Inpainting*, submitted.

Hunt, F. Y., Marbukh, V. and Wang, Y., *A Mathematical Model of Joint Congestion Control and Routing in Multisource Networks*, Proceedings of the IEEE International Conference on Control Applications, CCA 2011.

Zhang, T., Szlam, A., Wang, Y. and Lerman, G., *Hybrid Linear Modeling via Local Best Flats*, submitted. arXiv:1010.3460v1.

Zhang, T., Szlam, A., Wang, Y. and Lerman, G., *Randomized Hybrid Linear Modeling by Local Best-fit Flats*, IEEE Conference on Computer Vision and Pattern Recognition, 2010.

Presentation

Robust Locally Linear Analysis with Applications to Image Denoising and Blind Inpainting, junior colloquium, University of Minnesota **November, 2011**

Teaching Experience

University of Minnesota, Minneapolis, Minnesota USA

Teaching Assistant **September, 2006 - December, 2009**

Taught discussion classes, held office hours and graded exams and homeworks.

- Calculus I, MATH 1271 **Fall 2008, Fall 2009**
- Calculus II, MATH 1272 **Fall 2006, Spring 2007**
- Pre-calculus, MATH 1151, MATH 1155 **Fall 2007, Spring 2008**

Grade homeworks.

- Probability and Statistics, MATH 5651 **Spring 2009**

Internships

Mitsubishi Electric Research Laboratories, Cambridge, Massachusetts USA

Research Assistant **June - August, 2011**

Developed efficient sparse reconstruction methods for structured noise. Worked on blocking artifacts reduction and local variance noise removal.

Vision-Ease Lenses, Ramsey, Minnesota USA

Research Assistant **June - August, 2008**

Executed the sustainability project, collected and analyzed data, and wrote and presented the final report.

Honors and Awards

Graduate Fellowship, HUST, 2005

Excellent Undergraduate Student, HUST, 2005

Kwang-Hua Scholarship, HUST, 2001

Computer Skills

- Languages: Matlab, R, C, C++.
- Applications: LaTeXand presentation software.
- Operating Systems: Unix/Linux, Windows.