Jiaji Huang

CONTACT INFORMATION

Baidu Silicon Valley AI Lab
1195 Bordeaux Dr,
Sunnyvale, CA 94089, USA

Tel: (919) 599-8156
E-mail: huangjiaji@baidu.com
URL: http://people.ee.duke.edu/~jh313/main.html

RESEARCH INTERESTS

My research interest lies in the intersection of signal processing, machine learning and information theory. I am particularly interested in understanding how the geometry of signals assists learning tasks, e.g., classification and clustering. I design novel algorithms for computational sensing, signal reconstruction and classification. I also work on theories that predict the behavior of the algorithms.

EDUCATION

Duke University, Durham, NC, USA

Ph.D Electrical and Computer Engineering, May, 2016

- Advisor: Robert Calderbank

University of Science and Technology of China, Hefei, Anhui, China

B.S., Electrical Engineering and Information Science, July, 2011

JOURNAL PUBLICATIONS

J. Huang, Q. Qiu and R. Calderbank. The Role of Principal Angles in Subspace Classification. IEEE Transaction on Signal Processing, vol. 64, no. 8, 2016, 1933-1945.

J. Huang, Q. Qiu, R. Calderbank and G. Sapiro. *GraphConnect*: A Regularization Framework for Neural Networks. arXiv preprint arXiv:1512.06757, 2015.

L. Wang*, **J. Huang***, X. Yuan*, K. Krishnamurthy, J. Greenberg, V. Cevher, M. Rodrigues, D. Brady, R. Calderbank, and L. Carin. Signal Recovery and System Calibration from Multiple Compressive Poisson Measurements, SIAM Journal on Imaging Sciences (SIIMS), vol. 8, no. 3, 1923-1954, 2015. (∗: equal contribution)

Y. Xie, **J. Huang**, and R. Willett. Changepoint detection for high-dimensional time series with missing data, IEEE Journal of Selected Topics on Signal Processing (J-STSP), vol. 7, no. 1, pp. 12-27. 2013.

Y. Zhou, Z. Ye, and **J. Huang**. Improved decision-based detail-preserving variational method for removal of random-valued impulse noise, IET Image Processing, Vol. 6, no. 7, pp. 976-985, 2012.

CONFERENCE

J. Huang, Q. Qiu, R. Calderbank and G. Sapiro. Discriminative Robust Transformation Learning. Neural Information Processing Systems (NIPS), 2015.

J. Huang, Q. Qiu, R. Calderbank and G. Sapiro. Geometry-aware Deep Transform. International Conference on Computer Vision (ICCV), 2015.

L. Wang, **J. Huang**, X. Yuan, V. Cevher, M. Rodrigues, R. Calderbank, L. Carin. A concentration-of-measure inequality for multiple-measurement models, 2015 IEEE International Symposium on Information Theory (ISIT).

J. Huang, Q. Qiu, R. Calderbank, M. Rodrigues and G. Sapiro. Alignment with Intra-class Structure can imporve classification. 40th IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2015.

J. Huang, X. Yuan, and R. Calderbank. Multiscale bayesian reconstruction of compressive X-Ray

image. 40th IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2015.

J. Huang, X. Yuan, and R. Calderbank. Collaborative compressive X-Ray Image reconstruction. 40th IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2015.

X. Yuan and **J. Huang**. Polynomial-phase signal direction-finding and source-tracking with a single accoustic vector sensor. 40th IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2015.

J. Huang and X. Ning. Latent Space Tracking from Heterogeneous Data with an Application for Anomaly Detection. Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD) 2015.

Workshops

J. Huang and R. Calderbank, Modulator design for binary classification of poisson measurements. UCL-Duke Workshop on Sensing and Analysis of High-Dimensional Data (SAHD) 2014.

Y. Xie, **J. Huang**, and R. Willett. Multiscale online tracking of manifolds, 2012 IEEE Statistical Signal Processing Workshop (SSP).

Patent Applications

X. Ning, **J. Huang**, and G. Jiang, Online sparse regularized joint analysis for heterogeneous data, US20150095490 A1, 2015.

Professstional Experience

Reviewer for Journals and Conferences

- IEEE Transactions on Signal Processing
- IEEE Transactions on Knowledge and Data Engineering
- International Conference on Machine Learning (ICML)
- International Conference on Acoustics, Speech and Signal Processing (ICASSP)
- Global Conference on Signal and Information Processing (GlobalSip)
- International Conference on Image Processing (ICIP)

Research Intern at NEC Labs America

- Anomaly detection on heterogeneous time series (Supervisor: Dr. Xia Ning) **Summer, 2013**

Teaching Assistant in Department of ECE of Duke

- ECE 585: Signal Detection and Extraction **Spring, 2013**
- ECE 590: Information Theory **Fall, 2013**

Awards

Student Travel Award, International Conference on Computer Vision (ICCV) 2015
Student Travel Grant, Duke University, 2014
Duke graduate school Fellowship, 2011-2012
Distinguished Graduate, University of Science and Technology of China, 2011

Programing Skills

Python, C\C++, Matlab, LaTeX, deep learning packages (Theano, Caffe, Matconvnet, etc.) with GPU programming