Gang Wang

Address
Rm 460, 117, Pleasant Street SE
Minneapolis, MN 55455

Phone: +1-612-401-8057
E-mail: gangwang@umn.edu
Homepage: http://www.tc.umn.edu/~gangwang/

Education

Ph.D.	University of Minnesota, Minneapolis, US Electrical and Computer Engineering Advisor: Prof. Georgios B. Giannakis	Jan. 2015-Present
Ph.D.	Beijing Institute of Technology, Beijing, China Electrical Engineering Advisors: Profs. Jie Chen and Jian Sun	Sep. 2011-Present GPA: 3.98/4.0, **Rank: 1/38**
Bachelor	Beijing Institute of Technology, Beijing, China Electrical Engineering Advisor: Prof. Jian Sun	Sep. 2007-June 2011 GPA: 3.91/4.0

Teaching experience

EE 2011-Linear Systems, Circuits, and Electronics (Teaching Assistant at the University of Minnesota)
EE 3005/3006-Fundamentals of Electrical Engineering (Teaching Assistant at the University of Minnesota)

Journal Papers

[J1] **G. Wang,** A. S. Zamzam, G. B. Giannakis, and N. D. Sidiropoulos, ``Power System State Estimation via Feasible Point Pursuit: Algorithms and Cramer-Rao Bound,'' *IEEE Transactions on Power Systems*, submitted January 2017.

[J2] L. Zhang, **G. Wang,** D. Romero, and G. B. Giannakis, ``Randomized Block Frank-Wolfe for Convergent Large-Scale Learning,'' *IEEE Transactions on Signal Processing*, submitted December 2016.

[J3] **G. Wang,** L. Zhang, G. B. Giannakis, J. Chen, and M. Akcakaya, ``Sparse Phase Retrieval via Truncated Amplitude Flow,'' *IEEE Transactions on Signal Processing*, submitted November 2016.

[J4] **G. Wang,** G. B. Giannakis, and J. Chen, ``Scalable Solvers of Random Quadratic Equations via Stochastic Truncated Amplitude Flow,'' *IEEE Transactions on Signal Processing*, vol. 65, no. 5, March 2017.

[J5] **G. Wang**, G. B. Giannakis, and Y. C. Eldar, "Solving Systems of Random Quadratic Equations via Truncated Amplitude Flow,'' *IEEE Transactions on Information Theory*, submitted July 2016.

[J6] **G. Wang**, V. Kekatos, A.-J. Conejo, and G. B. Giannakis, "Ergodic Energy Management Leveraging Resource Variability in Distribution Grids,'' *IEEE Transactions on Power Systems*, November 2016.

[J7] V. Kekatos, **G. Wang**, A.-J. Conejo, and G. B. Giannakis, "Stochastic Reactive Power Management in Microgrids with Renewables," *IEEE Transactions on Power Systems*, vol. 30, January 2015.

[J8] **G. Wang**, J. Chen, and J. Sun, "Stochastic Stability of Extended Filtering for Nonlinear Systems with Measurement Packet Losses," *IET Control Theory & Applications*, vol. 7, no. 17, pp. 2048-2055, November 2013.

[J9] J. Chen, **G. Wang**, and J. Sun, "Power Scheduling for Kalman Filtering over Lossy Wireless Sensor Networks," *IET on Control Theory & Applications,* 2017 (to appear).

Conference Papers

[C1] **G. Wang**, G. B. Giannakis, and J. Chen, "Solving Large-scale Systems of Random Quadratic Equations via Stochastic Truncated Amplitude Flow,'' *Proc. of EUSIPCO*, Kos Island, Greece, Aug. 28 - Sept. 3, 2017. (submitted).

[C2] **G. Wang** and G. B. Giannakis, "Solving Random Systems of Quadratic Equations via Truncated Generalized Gradient Flow,'' *The Thirtieth Annual Conf. on Neural Information Processing Systems*, Barcelona Spain, December 5-10, 2016 **(Acceptance rate: 22.72%).**

[C3] **G. Wang** and G. B. Giannakis, "TGGF: Truncated Generalized Gradient Flow for Solving Random Systems of Quadratic Equations,'' *Intl. Conf. on Machine Learning Nonconvex Optimization Workshop*, New York City, June 19-25, 2016.

[C4] G. Wang, G. B. Giannakis, J. Chen, and M. Akcakaya, ``SPARTA: Sparse Phase Retrieval via Truncated Amplitude Flow,'' *Proc. of Intl. Conf. on Acoust., Speech, and Signal Processing,* New Orleans, USA, March 5-9, 2017.

[C5] **G. Wang**, A. S. Zamzam, G. B. Giannakis, and N. D. Sidiropoulos, "Power System State Estimation via Feasible Point Pursuit,'' *Proc. of Globalsip Conf.*, Washington, DC, Dec. 7-9, 2016.

[C6] B. Yang, **G. Wang**, and N. D. Sidiropoulos, "Group-sparse Regularization for Low-rank Tensor Completion and Decomposition,'' *Proc. of Asilomar Conf. on Signals, Systems, and Computers*, Pacific Grove, CA, November 6-9, 2016.

[C7] **G. Wang**, V. Kekatos, and G. B. Giannakis, "Stochastic Energy Management in Distribution Grids,'' *Proc. of Intl. Conf. on Acoustics, Speech and Signal Processing*, Shanghai, China, March 20-25, 2016.

[C8] D. K. Berberidis, V. Kekatos, **G. Wang**, and G. B. Giannakis, "Online Censoring for Large-Scale Regression," *Proc. of Intl. Conf. on Acoust., Speech, and Signal Processing*, Brisbane, Australia, April 19-24, 2015.

[C9] **G. Wang**, D. K. Berberidis, V. Kekatos, and G. B. Giannakis, "Online Reconstruction from Big Data via Compressive Censoring," *Proc. of GlobalSIP Conf.*, Atlanta, GA, December 3-5, 2014.

[C10] D. K. Berberidis, **G. Wang**, G. B. Giannakis, and V. Kekatos, "Adaptive Estimation from Big Data via Censored Stochastic Approximation," *Proc. of Asilomar Conf. on Signals, Systems, and Computers*, Pacific Grove, CA, November 2-5, 2014.

[C11] V. Kekatos, **G. Wang**, and G. B. Giannakis, "Stochastic Loss Minimization for Power Distribution Networks," *Proc. of North America Power Systems*, Pullman, WA, September 7-9, 2014.

[C12] **G. Wang**, S.-J. Kim, and G. B. Giannakis, "Moving-Horizon Dynamic Power System State Estimation Using Semidefinite Relaxation," *Proc. of IEEE PES General Mtg.*, Washington, DC, July 27-31, 2014.

[C13] S.-J. Kim, **G. Wang**, and G. B. Giannakis, "Online Semidefinite Programming for Power System State Estimation," *Proc. of Intl. Conf. on Acoustics, Speech and Signal Processing*, Florence, Italy, May 4-9, 2014.

[C14] **G. Wang**, J. Chen, and J. Sun, "Stochastic Stability of Extended Filtering for Non-linear Systems with Measurement Packet Losses," *IASTED Asian Conference on Modelling, Identification and Control*, Phuket, Thailand, April 2-4, 2012.

[C15] **G. Wang**, J. Chen, and J. Sun, "On Sequential Kalman Filtering with Scheduled Measurements," *IEEE 3rd Annual Intern. Conf. on Cyber Technology in Automation, Control and Intelligent Systems*, Nanjing, May 26-30, 2013.

Invited Referee

Journals: IEEE Transactions on Automatic Control, IEEE Transactions on Signal Processing, IEEE Transactions on Power Systems, IEEE Transactions on Smart Grid, Acta Automatica Sinica

Conferences: NIPS, COLT, ICASSP, CDC, SSP

Research/Project Experience

08/2015-Present **Provable Algorithms for Phase Retrieval**

- Design state-of-the-art algorithms for nonconvex phase retrieval applications with optimal sample complexity, linear computational complexity, near-perfect statistical guarantees
- Stochastic algorithms for phase retrieval
- Sparse phase retrieval solution algorithms

University of Minnesota, Minneapolis

05/2014-01/2015 Collaborator: G. B. Giannakis, Y. C. Eldar, J. Chen, and M. Ackacaya

Online Censoring for Large-Scale Regression

- Fixed and adaptive censoring rules for data reduction
- Efficient LMS and RLS type algorithms for large-scale regression
- Online support vector regression with censored targets

University of Minnesota, Minneapolis

Collaborators: G. B. Giannakis, V. Kekatos, and D. K. Berberidis

05/2014-07/2015 **Stochastic Reactive Power Management**

- (Dualized) SOCP relaxation for power loss minimization in distribution networks
- Efficient stochastic approximation solvers
- Efficient subgradient computation

Beijing Institute of Technology & University of Minnesota, Minneapolis

Collaborators: V. Kekatos and G. B. Giannakis

09/2013-03/2014 **Dynamic Power System State Estimation**

- Online convex optimization based state estimation via semidefinite relaxation
- Moving-horizon dynamic state estimation via semidefinite relaxation

Beijing Institute of Technology & University of Minnesota, Minneapolis

Collaborators: S.-J. Kim and G. B. Giannakis

02/2012-09/2013 **Kalman Filtering in Networked Control Systems with Data Packet Drops**

- Optimal power scheduling designed for networked systems with data packet drops
- Sufficient and necessary stability conditions for modified Kalman filter

State Key Laboratory of Complex Systems Intelligent Control and Decision & Beijing Institute of Technology

Collaborators: J. Chen and J. Sun

05/2012-04/2013 **State Estimation for Nonlinear Networked Systems**

- Extended filtering algorithm proposed nonlinear systems with measurement losses
- Sufficient conditions established for stochastic stability of proposed filtering algorithm

State Key Laboratory of Complex Systems Intelligent Control and Decision & Beijing Institute of Technology

Collaborators: J. Chen and J. Sun

10/2010-06/2011 **Robust Adaptive Control of Nonlinear Systems**

- Robust & adaptive control methods for nonlinear systems with coupled uncertainties
- Lyapunov stability analysis

State Key Laboratory of Complex Systems Intelligent Control and Decision & Beijing Institute of Technology

Collaborator: J. Sun

Honors and Awards

2013 National Scholarship (**top 2%**)
2013 Beijing Institute of Technology Outstanding Graduate Students
2013 Academic Excellence Scholarship (Special-class) Beijing Institute of Technology (**top 2%**)
2012 Beijing Institute of Technology Excellent Graduate Students
2012 Academic Excellence Scholarship (First-class) Beijing Institute of Technology
2010 People's Scholarship (First-class) of Beijing Institute of Technology (**top 5%**)
2010 Beijing Institute of Technology Excellent Students
2010 Third Prize in National Undergraduate Electronic Design Contest
2009 Beijing Institute of Technology Excellent Students
2008 People's Scholarship (First-class) of Beijing Institute of Technology (**top 5%**)

Technical Skills

Distributed algorithms, machine learning, optimization
Familiar with MATLAB ; Capable of coding with C and C++

Volunteer Experience

08/2008 Beijing Olympic Games volunteer
04/2008 Fangshan International Long Walk Competition volunteer

References

1. Prof. Gerogios B. Giannakis, Presidential Endowed Chair Prof. of Electrical and Computer Engineering department, and Director of Digital Technology Center, University of Minnesota, Minneapolis 55455. E-mail: Georgios@umn.edu.
2. Prof. *Jie Chen*, Prof. of School of Automation, and Vice-President of Beijing Institute of Technology, Beijing 100081, China; Tel: 0086-10-68913795. E-mail: chenjie@bit.edu.cn.
3. Prof. *Yonina Eldar,* Prof. of Electrical Engineering department, Technion, Israel Institute of Technology, Haifa 32000, Israel. E-mail: yonina@ee.technion.ac.il.