Jinming Xu

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Education	Nanyang Technological University, Singapore	2011-2016

Doctor of Philosophy (PhD), Electrical and Electronic Engineering
 - Thesis: *Augmented Distributed Optimization for Networked Systems*
 - Advisor: Prof. Yeng Chai Soh (Co: Prof. Lihua Xie)

Shandong University, Jinan, China   2005-2009

Bachelor of Science (BSc), Mechanical Engineering
 - Ranking: *9/204*
 - Excellent Undergraduate Thesis Award (*top 5%*), 2009

Research Interests
 - Distributed optimization and control, and its application into large-scale signal processing, machine learning and networked dynamic systems.

Academic Positions
 - Research Fellow, *Nanyang Technological University*, Singapore, 9/2016-Present,
 - Project Officer, *Nanyang Technological University*, Singapore, 8/2015-8/2016,
 - Research Assistant, *Zhejiang University*, China, 9/2009-8/2011.

Honors & Awards
 - NTU RSS Scholarship, 2011
 - Excellent Undergraduate Thesis Award (*top 5%*), 2009
 - Outstanding Student Scholarship (*top 5%*), 2006-2008

Project Experience

Distributed Optimization for Sensor Networks [J1, 3, 5; C2, 3, 4, 6]   5/2013-Present
 - Developed *several novel distributed algorithms* for multi-agent optimization problems,
 - Achieved the *best convergence rates* for these proposed algorithms,
 - Applied to large-scale (stochastic) networks for sensor fusion and resource allocation.

Distributed Optimization for Networked Systems [J2; C1]   8/2011-8/2015
 - Designed a *new distributed derivative-free scheme* for networked dynamic optimization,
 - Proposed a *primal-dual* extremum seeking approach accounting for *unknown constraints*,
 - Applied the proposed scheme to wind farms for energy maximization.

Occupancy Modeling for Optimal HVAC Control [J4]   9/2012-5/2013
 - Proposed *new stochastic models* for occupancy modeling and prediction,
 - Designed *distributed model predictive control schemes* for large-scale HVAC systems.

Publications   Journal Articles

J1   **Jinming Xu**, Shanying Zhu, Yeng Chai Soh and Lihua Xie, "Convergence of Asynchronous Distributed Gradient Methods over Stochastic Networks," conditionally accepted by *IEEE Transactions on Automatic Control* (Regular).

J2   **Jinming Xu** and Yeng Chai Soh, "A Distributed Simultaneous Perturbation Approach for Large-scale Dynamic Optimization Problems," *Automatica* 72 (2016): 194-204 (Regular).

J3   **Jinming Xu**, Shanying Zhu, Yeng Chai Soh and Lihua Xie, "A Bregman Splitting Scheme for Distributed Optimization over Networks," submitted to *IEEE Transactions on Automatic Control (Regular)*
http://arxiv.org/abs/1608.08031.

J4 Zhenghua Chen, **Jinming Xu**, Yeng Chai Soh, "Modeling Regular Occupancy in Commercial Buildings Using Stochastic Models", *Energy and Buildings* 103 (2015): 216-223.

J5 **Jinming Xu**, Shanying Zhu, Yeng Chai Soh and Lihua Xie, "A General Primal-Dual Splitting Algorithm for Distributed Composite Optimization," *Working Paper*.

Conference Proceedings

C1 **Jinming Xu** and Yeng Chai Soh, "Distributed Extremum Seeking Control of Networked Large-scale Systems under Constraints," In *Proceedings of 52nd IEEE Conference on Decision and Control (CDC)*, 2013.

C2 **Jinming Xu**, Shanying Zhu, Yeng Chai Soh and Lihua Xie, "Augmented Distributed Gradient Methods for Multi-agent Optimization under Uncoordinated Constant Stepsizes," In *Proceedings of 54th IEEE Conference on Decision and Control (CDC)*, 2015.

C3 **Jinming Xu**, Shanying Zhu, Yeng Chai Soh and Lihua Xie, "A Forward-Backward Bregman Splitting Scheme for Regularized Distributed Optimization Problems," In *Proceedings of 55th IEEE Conference on Decision and Control (CDC)*, 2016.

C4 Shanying Zhu, **Jinming Xu**, Cailian Chen and Xinping Guan, "A Least Square Approach for Distributed Sensor Fusion in Bandwidth-constrained Sensor Networks," In *Proceedings of 41st IEEE Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2016.

C5 Shanying Zhu, **Jinming Xu**, Cailian Chen, Xinping Guan and Binqiang Xue, "DINS: A Scheme for Distributed Sensor Fusion over Fading Channels," accepted by *International Federation of Automatic Control (IFAC)*, 2017.

C6 **Jinming Xu**, Shanying Zhu, Yeng Chai Soh and Lihua Xie, "A Dual Splitting Algorithm for Distributed Resource Allocation Problems," submitted to CDC2017.

Professional Activities
- Publication Reviewing: IEEE TAC ● IEEE TCNS ● NetSys ● CDC ● etc.
- Memberships: IEEE Member (since 2011) ● IEEE Control Systems Society (since 2013).

References Available upon request.