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*

Shandong University, Jinan, China   2005-2009

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

Research Interests
  - Distributed Optimization,
  - Energy Optimization for Networked Systems,
  - Large-Scale Signal Processing and Machine Learning.

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

Project Experience

Distributed Optimization for Large-Scale Multi-Agent Systems   5/2013-Present
  - Developed *two novel distributed algorithms* for multi-agent optimization problems,
  - Achieved the *best convergence rates* for the proposed algorithms,
  - Applied to large-scale sensor networks for sensor fusion under random link failures.

Distributed Extremum Seeking Control for Networked Systems   8/2011-8/2015
  - Designed a *new distributed scheme* for optimization of large-scale networked systems,
  - Proposed a *primal-dual* extremum seeking approach accounting for *unknown constraints*,
  - Applied the proposed scheme to wind farms for energy maximization.

Occupancy Modeling and Prediction for Optimal HVAC Control   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 Publications

J1 **Jinming Xu** and Yeng Chai Soh, "A Distributed Simultaneous Perturbation Approach for Large-scale Dynamic Optimization Problems," *Automatica* 72 (2016): 194-204 (Regular).

J2 **Jinming Xu**, Shanying Zhu, Yeng Chai Soh and Lihua Xie, "A Bregman Splitting Algorithm for Distributed Optimization Problems over Networks," submitted to *IEEE Transactions on Signal Processing* (revised and resubmitted, arxiv).

J3 **Jinming Xu**, Shanying Zhu, Yeng Chai Soh and Lihua Xie, "Convergence of Asynchronous Distributed Gradient Methods over Stochastic Networks," submitted to *IEEE Transactions on Automatic Control* (Regular Paper, under major revision).

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

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," accepted by *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.

Professional Services

- Reviewing: IEEE Transactions on Automatic Control, NetSys, CDC, etc.