

<b>Education</b>	Nanyang Technological University, Singapore	2011-2016
	Doctor of Philosophy (Ph.D.), <a href="#">Electrical and Electronic Engineering</a>	
	- Thesis: <a href="#">Augmented Distributed Optimization for Networked Systems</a>	
	- Advisor: Prof. <a href="#">Yeng Chai Soh</a> and Prof. <a href="#">Lihua Xie</a> (IEEE Fellow, IFAC Fellow)	
	Shandong University, Jinan, China	2005-2009
	Bachelor of Science (B.Sc.), <a href="#">Mechanical Engineering</a>	
	- Ranking: 9/204	
	- Excellent Undergraduate Thesis Award ( <i>top 5%</i> ), 2009	
<b>Research Interests</b>	- Distributed Optimization and Control	
	- Large-Scale Machine Learning	
	- Security of Algorithms and Data Privacy	
	- Network Science	
<b>Academic Positions</b>	- Assistant Professor, <a href="#">Zhejiang University</a> , Hangzhou, China	9/2019-Present
	- Postdoctoral Scholar, <a href="#">Purdue University</a> , West Lafayette, USA	9/2018-8/2019
	- Postdoctoral Scholar, <a href="#">Arizona State University</a> , Phoenix, USA	10/2017-8/2018
	- Research Fellow, <a href="#">Nanyang Technological University</a> , Singapore	8/2016-9/2017
<b>Honors &amp; Awards</b>	- “One-Hundred Talent Young Scholars”, <a href="#">Zhejiang University</a> , 2019	
	- Excellent Undergraduate Thesis Award ( <i>top 5%</i> ), 2009	
	- Outstanding Student Scholarship ( <i>top 5%</i> ), 2006-2008	
<b>Research Experience</b>	Distributed Optimization over Networks [ <a href="#">J3</a> , <a href="#">5</a> , <a href="#">6-7</a> , <a href="#">9-10</a> ; <a href="#">C2</a> , <a href="#">5</a> , <a href="#">7</a> , <a href="#">8</a> ]	5/2013-Present
	- Developed <i>several novel distributed algorithms</i> for multi-agent optimization and resource allocation problems over general and adversarial networks,	
	- Achieved <i>fast (even optimal) rates</i> for these proposed distributed algorithms,	
	- Investigated the fundamental communication-computation trade-off,	
	- Applied to sensor fusion problems and economic dispatch of power systems.	
	Coordinated Control for Networked Dynamical Systems [ <a href="#">J2</a> ; <a href="#">C1</a> ]	8/2011-8/2015
	- Designed a <i>new distributed derivative-free scheme</i> for networked dynamic optimization,	
	- Proposed a <i>primal-dual</i> extremum seeking approach for <i>unknown constraints</i> ,	
	- Applied the proposed scheme to wind farms for energy maximization.	
	Occupancy Modeling for Optimal HVAC Control [ <a href="#">J1</a> ]	9/2012-5/2013
	- Proposed <i>new stochastic models</i> for occupancy modeling and prediction,	
	- Designed <i>distributed model predictive control schemes</i> for large-scale HVAC systems.	
<b>Participated Projects</b>	- “ <i>Distributed Fog Computing for Non-Convex Big-Data Analytics</i> ”, NSF-CIF, USA, 2017-2020, Main Participant.	
	- “ <i>Identification and Isolation of Malicious Behavior in Multi-Agent Optimization Algorithms</i> ”, NSF-CCF, USA, 2017-2020, Main Participant.	
	- “ <i>New Generation HVAC Systems - Total Energy Efficiency Solutions</i> ”, NRF-CRP, Singapore, 2012-2017, Participant.	
	- “ <i>Building Efficiency and Sustainability in the Tropics (SinBerBEST)</i> ”, NRF (led by UC Berkeley), Singapore, 2012-2017, Participant.	

## Publications Journal Articles

- J10 **Jinming Xu**, Ye Tian, Ying Sun and Gesualdo Scutari, “Distributed Algorithms for Composite Optimization: Unified and Tight Convergence Analysis,” preprint; online: [\[pdf\]](#)
- J9 **Jinming Xu**, Ye Tian, Gesualdo Scutari and Ying Sun, “Optimal Primal-Dual Algorithms for Distributed Optimization over Networks,” *AISTATS 2020*. [\[pdf\]](#)
- J8 Yongyang Xiong, **Jinming Xu**, Keyou You, Jianxing Liu, and Ligang Wu, “Privacy Preserving Distributed Online Optimization over Unbalanced Digraphs via Subgradient Rescaling,” *IEEE Transactions on Control of Network Systems*, to appear, 2020.
- J7 Shi Pu, Wei Shi, **Jinming Xu**, Angelia Nedich, “Push-Pull Gradient Methods for Distributed Optimization in Networks,” *IEEE Transactions on Automatic Control*, revised and resubmitted, 2018. [\[pdf\]](#)
- J6 **Jinming Xu**, Shanying Zhu, Yeng Chai Soh and Lihua Xie, “A Dual Splitting Approach for Distributed Resource Allocation with Regularization,” *IEEE Transactions on Control of Network Systems*, vol. 6, no. 1: 403-414, 2019. [\[pdf\]](#)
- J5 **Jinming Xu**, Shanying Zhu, Yeng Chai Soh and Lihua Xie, “A Bregman Splitting Scheme for Distributed Optimization over Networks,” *IEEE Transactions on Automatic Control*, vol. 63, no. 11, pp. 3809-3824, 2018 (Regular). [\[pdf\]](#)
- J4 Shanying Zhu, Cailian Chen, **Jinming Xu**, Lihua Xie and Johansson Karl Henrik, “Mitigating Quantization Effects on Distributed Sensor Fusion: A Least Squares Approach,” *IEEE Transactions on Signal Processing*, vol. 66, no. 13, pp. 3459-3474, 2018. [\[pdf\]](#)
- J3 **Jinming Xu**, Shanying Zhu, Yeng Chai Soh and Lihua Xie, “Convergence of Asynchronous Distributed Gradient Methods over Stochastic Networks,” *IEEE Transactions on Automatic Control*, vol. 63, no. 2, pp. 434-448, 2018 (Regular). [\[pdf\]](#)
- J2 **Jinming Xu** and Yeng Chai Soh, “A Distributed Simultaneous Perturbation Approach for Large-scale Dynamic Optimization Problems,” *Automatica* 72 (2016):194-204 (Regular).
- J1 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

- C9 **Jinming Xu**, Ying Sun and Gesualdo Scutari, “A Unified Contraction Analysis of a Class of Distributed Algorithms for Composite Optimization,” *CAMSAP 2019*, To appear.
- C8 Shi Pu, Wei Shi, **Jinming Xu**, Angelia Nedich, “A Push-Pull Gradient Method for Distributed Optimization in Networks,” In *Proceedings of 57th IEEE Conference on Decision and Control (CDC)*, 2018.
- C7 **Jinming Xu**, Shanying Zhu, Yeng Chai Soh and Lihua Xie, “A Dual Splitting Algorithm for Distributed Resource Allocation Problems,” In *Proceedings of 56th IEEE Conference on Decision and Control (CDC)*, 2017.
- C6 Shanying Zhu, **Jinming Xu**, Cailian Chen, Xinping Guan and Binqiang Xue, “DINS: A Scheme for Distributed Sensor Fusion over Fading Channels,” *IFAC-PapersOnLine* 50(1), 2017: 14284-14289.
- C5 **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.
- C3 Shanying Zhu, Shuai Liu, **Jinming Xu**, Yeng Chai Soh, and Lihua Xie, “Averaging based distributed estimation algorithm for rate-constrained sensor networks with additive quanti-

zation model,” In *Proceedings of 54th IEEE Conference on Decision and Control (CDC)*, 2015.

- 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.
- 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.

## **Presentations** Invited Talks

- School of Mathematical Sciences, Zhejiang University, “*Distributed Optimization over Networks: From Algorithms to Complexity Bounds*”, Shanghai, China 11/2019
- School of Control Science and Engineering, Zhejiang University, “*Distributed Optimization over Networks: From Algorithms to Applications*”, Hangzhou, China 4/2019
- CSL lab, University of Illinois at Urbana–Champaign, “*Augmented Distributed Optimization: From Algorithms to Applications*”, Champaign, IL USA 10/2018
- INFORMS Optimization, “*Robust Distributed Optimization for Networks with Unreliable Nodes*”, Denver, USA 3/2018
- Shanghai Jiaotong University (SJTU), “*Augmented Distributed Optimization: A General Primal-Dual Perspective*”, Shanghai, China 1/2017

## Conference Talks

- IEEE CDC, “*A Forward-Backward Bregman Splitting Scheme for Regularized Distributed Optimization Problems*”, Las Vegas, USA 12/2016
- IEEE CDC, “*Distributed Extremum Seeking Control of Networked Large-scale Systems under Constraints*”, Florence, Italy 12/2013

## **Professional** Services **Activities**

- Associated Editor for ICCA 2019, 2020
- Session (co)-Chair for SIAM OPT 2020, ICCA 2020 and CDC 2020
- Program Chair for ECR workshop 2019

## Reviews

- IEEE Transactions on Automatic Control
- IEEE Transactions on Control of Network Systems
- SIAM Journal on Optimization
- IEEE Transactions on Cybernetics
- IEEE Transactions on Systems, Man and Cybernetics: Systems
- IEEE Transactions on Signal and Information Processing over Networks
- IEEE Transactions on Signal Processing
- IEEE Transactions on Network Science and Engineering
- IEEE Conference on Decision and Control
- IEEE International Conference on Control and Automation
- International Conference on Networked Systems
- International Federation of Automatic Control
- International Conference on Acoustics, Speech, and Signal Processing

## Memberships

- IEEE Member (since 2011) • IEEE Control Systems Society (since 2013).