

<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>	<ul style="list-style-type: none"> <li>- Distributed Optimization and Control</li> <li>- Large-Scale/Distributed Machine Learning</li> <li>- Security and Privacy of Algorithms</li> <li>- Network Science</li> </ul>	
<b>Academic Positions</b>	- Assistant Professor, <i>Zhejiang University</i> , Hangzhou, China	9/2019-Present
	- Postdoctoral Scholar, <i>Purdue University</i> , West Lafayette, USA	9/2018-8/2019
	- Postdoctoral Scholar, <i>Arizona State University</i> , Phoenix, USA	10/2017-8/2018
	- Research Fellow, <i>Nanyang Technological University</i> , Singapore	8/2016-9/2017
<b>Honors &amp; Awards</b>	<ul style="list-style-type: none"> <li>- “One-Hundred Talent Young Scholars”, <i>Zhejiang University</i>, 2019</li> <li>- Excellent Undergraduate Thesis Award (<i>top 5%</i>), 2009</li> <li>- Outstanding Student Scholarship (<i>top 5%</i>), 2006-2008</li> </ul>	
	<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 <ul style="list-style-type: none"> <li>- Developed <i>several novel distributed algorithms</i> for multi-agent optimization and resource allocation problems over general and adversarial networks,</li> <li>- Achieved <i>fast (even optimal) rates</i> for these proposed distributed algorithms,</li> <li>- Investigated the fundamental communication-computation trade-off,</li> <li>- Applied to sensor fusion problems and economic dispatch of power systems.</li> </ul>	
	Coordinated Control for Networked Dynamical Systems [ <a href="#">J2</a> ; <a href="#">C1</a> ] 8/2011-8/2015 <ul style="list-style-type: none"> <li>- Designed a <i>new distributed derivative-free scheme</i> for networked dynamic optimization,</li> <li>- Proposed a <i>primal-dual</i> extremum seeking approach for <i>unknown constraints</i>,</li> <li>- Applied the proposed scheme to wind farms for energy maximization.</li> </ul>	
<b>Participated Projects</b>	Occupancy Modeling for Optimal HVAC Control [ <a href="#">J1</a> ] 9/2012-5/2013 <ul style="list-style-type: none"> <li>- Proposed <i>new stochastic models</i> for occupancy modeling and prediction,</li> <li>- Designed <i>distributed model predictive control schemes</i> for large-scale HVAC systems.</li> </ul>	
	<ul style="list-style-type: none"> <li>- “<i>Distributed Fog Computing for Non-Convex Big-Data Analytics</i>”, NSF-CIF, USA, 2017-2020, Main Participant.</li> </ul>	
	<ul style="list-style-type: none"> <li>- “<i>Identification and Isolation of Malicious Behavior in Multi-Agent Optimization Algorithms</i>”, NSF-CCF, USA, 2017-2020, Main Participant.</li> </ul>	
	<ul style="list-style-type: none"> <li>- “<i>New Generation HVAC Systems - Total Energy Efficiency Solutions</i>”, NRF-CRP, Singapore, 2012-2017, Participant.</li> <li>- “<i>Building Efficiency and Sustainability in the Tropics (SinBerBEST)</i>”, NRF (led by UC Berkeley), Singapore, 2012-2017, Participant.</li> </ul>	

## 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*, pp. 1-1, 2020; online available. [\[pdf\]](#)
- 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

- Institute of High Performance Computing, A\*Star, “*When do distributed optimization algorithms meet centralized counterparts and beyond*”, Singapore 5/2020
- School of Mathematical Sciences, Shanghai Jiaotong 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
- School of Electrical Engineering, 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 Activities** Services

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

## 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
- International Conference on Networked Systems
- International Federation of Automatic Control

## Memberships

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