电气与电子工程学院硕士研究生导师简介

个人资料

硕士学科：控制理论与控制工程

姓　　名：施阳	电子照片
性　　别：男	
最高学历：加拿大阿尔伯特大学，博士学位	
职　　称：教授	
职　　务：	
E-mail　：yshi@uvic.ca	
电　　话：15327219866	
研究方向：网络控制系统、模型预测控制、鲁棒控制	

::个人简介：

加拿大阿尔伯特大学数字信号处理及通讯工程专业博士，加拿大维多利亚大学机械工程系终身教授，湖北工业大学楚天学者特聘教授。2012 年 12 月，入选第二批“百人计划”创新人选项目，“楚天学者计划”讲座教授。长期从事网络控制系统的研究，在网络控制系统设计、分布式控制系统分析、机电系统的精密控制、自主航行器的导航与控制、节能系统的控制与调度、辨识及自适应控制、控制与信号处理在生物医疗工程中的应用等研究等领域开展了许多开拓性研究，取得了多项创新成果。目前担任多个国际期刊的副编辑，包括：IEEE Trans. on Fuzzy Systems, ASME Journal of Dynamic Systems, Measurement, and Control. Journal of Franklin Institute 等。近年来，多项研究在 IEEE 汇刊等顶级期刊发表，共发表国际期刊学术论文 80 余篇，被引用 1900 余次。

详情校内咨询：15327219866；邮箱及 QQ：86146969@qq.com

:: 目前主持或作为主要成员参与的科研项目：

[1] 虑双通道随机时延的非线性网络控制系统方法研究（61473116），国家自然科学基金面上项目，主持，80 万

[2] 非线性网络系统控制分析与设计（BSQD12107），百人计划特聘教授科研启动金，主持，50 万

:: 已发表的代表性研究成果或科研论文：

获得的荣誉和奖励：

2016: Fellow of the IEEE (Institute of Electrical and Electronics Engineers)

2016: 2017 IEEE TFS Outstanding Paper Award

2016: Fellow of the ASME (American Society of Mechanical Engineers)

2016: Fellow of the CSME (Canadian Society for Mechanical Engineering)

2015：“长江学者奖励计划”青年学者

2015: Thomson Reuters Highly Cited Researcher in Engineering（全球高引用科学家）

2015: Craigdarroch Silver Medal for Excellence in Research, University of Victoria

2014: Thomson Reuters Highly Cited Researcher in Engineering（全球高引用科学家）

2013: JSPS Invitation Fellowship

2012: Teaching Excellence Award, Faculty of Engineering, University of Victoria

2009: Best Presentation in Session Award, ACC 2009

June 2008: Best Presentation in Session Award, ACC 2008

2006-2007: Teaching Excellence Award, University of Saskatchewan Student Union (USSU)

科研论文

[1] X. Tang, Y. Shi, and H. Xu "Fractional pseudospectral schemes with equivalence for fractional differential equations," SIAM Journal on Scientific Computing, accepted for publication (January 2017).

[2] X. Tang, Y. Shi, and L.L. Wang "A new framework for solving fractional optimal control problems using fractional pseudospectral methods," Automatica, accepted for publication (November 2016).

[3] H. Li, W. Yan, and Y. Shi, "Continuous-time model predictive control of under-actuated spacecraft with bounded control torques," Automatica, vol. 75, pp. 144-153, Jan. 2017.

[4] J. Qin, Q. Ma, Y. Shi, and L. Wang "Recent Advances in Consensus of Multi-Agent Systems: A Brief Survey," IEEE Transactions on Industrial Electronics, DOI: 10.1109/TIE.2016.2636810, December 2016.

[5] M. Liu and Y. Shi, "Model predictive control for thermostatically controlled appliances providing balancing service,'' IEEE Trans. on Control Systems Technology, vol. 24, no. 5, pp. 2082-2093, November 2016.

[6] J. Gao, A. Proctor, Y. Shi, and C. Bradley, "Hierarchical model predictive image-based visual servoing of underwater vehicles with adaptive neural network dynamic control," IEEE Trans. Cybernetics, vol. 46, no. 10, October 2016.

[7] H. Li, Y. Shi, and W. Yan, "On neighbor information utilization in distributed receding horizon control for consensus-seeking," IEEE Trans. Cybernetics, vol. 46, no. 9, pp. 2019-2027, September 2016.

[8] M. Liu, Y. Shi, and H. Gao, "Aggregation and charging control of PHEVs in smart grid: A cyber-physical perspective," Proceedings of IEEE, vol. 104, no. 5, pp. 1071-1085, May 2016.

[9] M. Liu and Y. Shi, "Model predictive control aggregated heterogeneous second-order thermostatically controlled loads for ancillary services," IEEE Trans. Power Systems, vol. 31, no. 3, pp. 1963-1971, March 2016.

[10] M. Liu, Y. Shi, and X. Liu, "Distributed model predictive control of aggregated heterogeneous thermostatically controlled loads," IEEE Trans. Industrial Electronics, vol. 63, no. 2, pp. 1120-1129, Feb. 2016.

[11] H. Li, Y. Shi, and W. Yan, "Distributed receding horizon control of constrained nonlinear vehicle formations with guaranteed $gamma$-gain stability," Automatica, vol. 68, no. 1, pp. 148-154, January 2016.

[12] H. Li, W. Yan, and Y. Shi, "Periodic event-triggering in distributed receding horizon control of nonlinear systems," Systems & Control Letters, vol. 86, pp. 16-23, December 2015.

[13] M. Liu, Y. Shi, F. Fang, "Load forecasting and operation strategy design for CCHP systems using forecasted loads," IEEE Trans. Control Systems Technology, vol. 23, no. 5, pp. 1672-1684, September, 2015.

[14] L. Qiu, Y. Shi, etc. "Network-based robust H_2/H_infty control for linear systems with two-channel random packet dropouts and time delays," IEEE Trans. Cybernetics, vol. 45, no. 8, pp. 1450-1462, August 2015.

[15] X. Liu, Y. Shi, and D. Constantinescu, "Distributed model predictive control of constrained weakly coupled nonlinear systems," Systems & Control Letters, vol. 74, no. 12, pp. 41-49, December 2014.

[16] J. Huang, Y. Shi, and X. Zhang, "Active fault tolerant control systems by the semi-Markov model approach," International Journal of Adaptive Control and Signal Processing, vol. 28, no. 9, pp. 765-858, September 2014.

[17] M. Liu, Y. Shi, and F. Fang, "Combined cooling, heating and power systems: A survey," Renewable & Sustainable Energy Reviews, vol. 35, pp. 1-22, July 2014.

[18] H. Li and Y. Shi, "Robust distributed model predictive control of constrained continuous-time nonlinear systems: A robustness constraint approach," IEEE Trans. Automatic Control, vol. 59, no. 6, pp. 1673-1678, June 2014

[19] H. Li and Y. Shi, "Event-triggered robust model predictive control of continuous-time nonlinear systems," Automatica, vol. 50, no. 5, pp. 1507-1513, May 2014.

[20] H. Li and Y. Shi, "Distributed receding horizon control of large-scale nonlinear systems: Handling communication delays and

disturbances," Automatica, vol. 50, no. 4, pp. 1264-1271, April 2014.
[21] Y. Li, F. Ding, and Y. Shi, "An efficient hierarchical identification for general dual-rate sampled-data systems," Automatica, vol. 50, no. 3, pp. 962-970, March 2014.
[22] H. Li and Y. Shi, "Network-based predictive control for constrained nonlinear systems with two-channel packet dropouts," IEEE Trans. Industrial Electronics, vol. 61, no. 3, pp. 1574-1582, March 2014.
[23] H. Zhang, Y. Shi, and J. Wang "On energy-to-peak filtering for nonuniformly sampled nonlinear systems: A Markovian jump system approach," IEEE Trans. Fuzzy Systems, vol. 22, no. 1, pp. 212-222, Feb. 2014. (2017 IEEE TFS Outstanding Paper Award)
[24] L. Wei, F. Fang and Y. Shi, "Adaptive backstepping-based composite nonlinear feedback water level control for the nuclear U-tube steam generator," IEEE Trans. Control Systems Technology, vol. 22, no. 1, pp. 369-377, Jan. 2014.
[25] J. Huang and Y. Shi, "Stochastic stability and robust stabilization of semi-Markov jump linear systems," International Journal of Robust and Nonlinear Control, vol. 23, no. 18, pp. 2028-2043, Dec. 2013.
[26] Y. Shi, J. Huang, and B. Yu, "Robust tracking control of networked control systems: Application to a networked DC motor," IEEE Trans. on Industrial Electronics, vol. 60, no. 12, pp. 5864-5874, 2013.
[27] H. Li and Y. Shi, "Distributed model predictive control of constrained nonlinear systems with communication delays," Systems & Control Letters, vol. 62, no. 10, pp. 819-826, 2013.
[28] J. Huang and Y. Shi, "H_infty state-feedback control for semi-Markov jump linear systems with time-varying delays," ASME Journal of Dynamic Systems, Measurement, and Control, vol. 135, no. 4, July 2013.
[29] H. Li and Y. Shi, "Networked min-max model predictive control of constrained nonlinear systems with delays and packet dropouts," International Journal of Control, vol.86, no. 4, pp. 610-624, 2013.
[30] H. Li and Y. Shi, "Output feedback predictive control for constrained linear systems with intermittent measurements," Systems & Control Letters, vol. 62, no. 4, pp. 345-354, 2013.
[31] H. Zhang, Y. Shi, and M. X. Liu, "H_infty step tracking control for networked discrete-time nonlinear systems with integral and predictive actions," IEEE Trans. on Industrial Informatics, vol. 9, no. 1, pp. 337-345, 2013.
[32] Y. Lin, Y. Shi and R. Burton, "Modeling and robust discrete-time sliding mode control design for a fluid power electrohydraulic actuator (EHA) system," IEEE/ASME Trans. Mechatronics, vol. 18, no. 1, January 2013.
[33] J. Huang, Y. Shi, and J. Wu, "Transparent virtual coupler design for networked haptic systems with a mixed virtual wall," IEEE/ASME Trans. Mechatronics, vol. 17, no. 3, pp. 480-487, June 2012.
[34] F. Fang, Q. Wang, and Y. Shi, "A novel optimal operational strategy for the CCHP system based on two operating modes," IEEE Trans. Power Systems, vol. 27, no. 2, pp. 1032-1041, 2012.
[35] H. Zhang, Y. Shi, and A. Saadat Mehr, "On H_infty filtering for discrete-time Takagi-Sugeno fuzzy systems," IEEE Trans. Fuzzy Systems, vol. 20, no.2, pp. 396-401, April 2012.
[36] H. Li and Y. Shi, "Robust H_infty filtering for nonlinear stochastic systems with uncertainties and random delays modeled by Markov chains," Automatica, vol. 48, no. 1, pp. 159-166, January 2012.
[37] H. Zhang, Y. Shi and A. Saadat Mehr, "Robust H_infty PID control for multivariable networked control systems with disturbance/noise attenuation," International Journal of Robust and Nonlinear Control, vol. 22, no. 2, pp. 183-204, January, 2012.
[38] H. Zhang, Y. Shi and A. Saadat Mehr, "Robust static output feedback control and remote PID design for networked motor systems," IEEE Trans. Industrial Electronics, vol. 58, no. 12, pp. 5396-5405, December 2011.
[39] J. Wu and Y. Shi, "Consensus in multi-agent systems with random delays governed by a Markov chain," Systems & Control Letters, vol. 60. no. 11, pp. 863-870, November 2011.
[40] H. Fang, Y. Shi, and J. Yi. "On stable simultaneous input and state estimation for discrete-time linear systems," International Journal of Adaptive Control and Signal Processing, vol. 25. no. 8, pp. 671-686, August 2011.
[41] B. Yu, Y. Shi, and J. Huang "Modified generalized predictive control of networked systems with application to a hydraulic position control system," ASME Journal of Dynamic Systems, Measurement, and Control, vol. 133, no. 3 (9 pages), May 2011.
[42] Y. Shi and B. Yu, "Robust mixed H_2/H_infty control of networked control systems with random time delays in both forward and backward

communication links," Automatica, vol. 47, no. 4, pp. 754-760, April 2011.
[43] Y. Shi and H. Fang, "Kalman filter based identification for systems with randomly missing measurements in a network environment," International Journal of Control, vol. 83, no. 3, pp. 538-551, 2010.
[44] Y. Shi and B. Yu, "Output feedback stabilization of networked control systems with random delays modeled by Markov chains," IEEE Trans. on Automatic Control, vol. 54, no. 7, pp. 1668-1674, 2009.
[45] Y. Shi, H. Fang, and M. Yan. "Kalman filter based adaptive control for networked systems with unknown parameters and randomly missing outputs," International Journal of Robust and Nonlinear Control, vol. 19, no. 18, pp. 1976-1992, 2009.
[46] L. Zhang, Y. Shi, T. Chen, and B. Huang, "A new method for stabilization of networked control systems with random delays," IEEE Trans. on Automatic Control, vol. 50, no. 8, pp. 1177-1181, August 2005.