

Prof. Peter X. LIU

Carleton University, Canada

Selected Scholarly Contributions [Data Provided by **Scopus]**

Chen, Y., Li, X., Wang, S., Liu, X., Ai, B.

[Simulating Urban Form and Energy Consumption in the Pearl River Delta Under Different Development Strategies](#)
(2013) Annals of the Association of American Geographers, 103 (6), pp. 1567-1585.

Huang, K., Liu, X., Li, X., Liang, J., He, S.

[An improved artificial immune system for seeking the Pareto front of land-use allocation problem in large areas](#)
(2013) International Journal of Geographical Information Science, 27 (5), pp. 922-946.

Chen, B., Liu, X.P., Ge, S.S., Lin, C.

[Adaptive fuzzy control of a class of nonlinear systems by fuzzy approximation approach](#)
(2012) IEEE Transactions on Fuzzy Systems, 20 (6), art. no. 6165346, pp. 1012-1021.

Islam, S., Liu, P.X., El Saddik, A.

[Internet-based remote measurement, command and control system for smart transmission grid](#)
(2012) 2012 25th IEEE Canadian Conference on Electrical and Computer Engineering: Vision for a Greener Future, CCECE 2012, art. no. 6335021, .

Xu, S.-P., Liu, X.-P., Li, C.-Q., Hu, L.-Y., Yang, X.-H.

[An improved fast FCM image segmentation algorithm based on region feature analysis](#)
(2012) Moshi Shibie yu Rengong Zhineng/Pattern Recognition and Artificial Intelligence, 25 (6), pp. 987-995.

Hua, C., Yang, Y., Liu, X.P.

[Adaptive position tracking control for Bilateral teleoperation with constant time delay](#)
(2012) Proceedings of the World Congress on Intelligent Control and Automation (WCICA), art. no. 6358262, pp. 2324-2328.

Xu, S., Li, C., Hu, L., Jiang, S., Liu, X.P.

[An improved switching vector median filter for image-based haptic texture generation](#)
(2012) 2012 5th International Congress on Image and Signal Processing, CISP 2012, art. no. 6469637, pp. 1195-1199.

Liu, Y.-P., Du, Y.-M., Han, P.-D., Zhang, C.-L., Liu, X.-P., He, Z.-Y.

[Study on the diffusion theory of Cr in Ti-Al alloy\(100\) surface](#)
(2012) Dongbei Daxue Xuebao/Journal of Northeastern University, 33 (SUPPL.2), pp. 95-99.

Wang, H., Liu, X.P.

[Stability analysis of haptic shared control and its application on a mobile assistive robot](#)

(2012) Proceedings - 2012 IEEE Symposium on Haptic Audio-Visual Environments and Games, HAVE 2012, art. no. 6374448, pp. 44-49.

Bu, S., Yu, F.R., Cai, Y., Liu, P.X.

[Energy efficient cellular networks with CoMP communications and smart grid](#)

(2012) IEEE International Conference on Communications, art. no. 6364971, pp. 5921-5925.

Deng, X., Guo, J., Chen, Y., Liu, X.

[A method for detecting document orientation by using Naïve Bayes classifier](#)

(2012) Proceedings of the 2012 International Conference on Industrial Control and Electronics Engineering, ICICEE 2012, art. no. 6322409, pp. 429-432.

Liu, X.P., Alamri, A., Liu, G.

[Guest editorial special section on the 2011 IEEE International Symposium on haptic audio-visual environments and games](#)

(2012) IEEE Transactions on Instrumentation and Measurement, 61 (12), art. no. 6342841, pp. 3125-3126.

Xu, S., Liu, X., Li, C., Hu, L., Yang, X.

[An improved image-based haptic texture rendering approach](#)

(2012) International Review on Computers and Software, 7 (6), pp. 3090-3097.

Islam, S., Liu, P.X., El Saddik, A.

[Nonpassive teleoperation systems with time varying communication delay](#)

(2012) Proceedings of IEEE International Conference on Virtual Environments, Human-Computer Interfaces, and Measurement Systems, VECIMS, art. no. 6273179, pp. 60-64.

Wang, H., Liu, X.P.

[Design of a novel mobile assistive robot with haptic interaction](#)

(2012) Proceedings of IEEE International Conference on Virtual Environments, Human-Computer Interfaces, and Measurement Systems, VECIMS, art. no. 6273219, pp. 115-120.

Li, C., Liu, X., Xu, S.

[A modified Simple Particle Swarm optimization algorithm](#)

(2012) Journal of Computational Information Systems, 8 (19), pp. 8057-8064.

Rhineland, J., Liu, X.P.

[The partitioned kernel machine algorithm for online learning](#)

(2012) CIMSA 2012 - 2012 IEEE International Conference on Computational Intelligence for Measurement Systems and Applications, Proceedings, art. no. 6269602, pp. 1-6.

Li, C., Liu, X., Xu, S.

[Stock price prediction based on general regression neural network and fly optimization algorithm](#)

(2012) Journal of Computational Information Systems, 8 (17), pp. 7021-7028.

Li, C., Liu, X.P., Xu, S.

[PID controller tuning using a Modified Simple Particle Swarm Optimization algorithm](#)

(2012) International Journal of Advancements in Computing Technology, 4 (16), pp. 1-8.

Pan, Y.-J., Liu, P.X., Shi, Y., Sheng, J.

[Advances in methods for control over networks](#)

(2012) Journal of Control Science and Engineering, 2012, art. no. 136809, .

Xu, S., Li, C., Jiang, S., Liu, X.

[Similarity measures for content-based image retrieval based on intuitionistic fuzzy set theory](#)

(2012) Journal of Computers, 7 (7), pp. 1733-1742.

He, X., Goubran, R.A., Liu, X.P.

[Ensemble empirical mode decomposition and adaptive filtering for ECG signal enhancement](#)

(2012) MeMeA 2012 - 2012 IEEE Symposium on Medical Measurements and Applications, Proceedings, art. no. 6226649, pp. 136-140.

Shen, G., Liu, X.

[Visualization on relationships of cooperative work logs from semantic dimensional feature space](#)

(2012) Proceedings of the 2012 IEEE 16th International Conference on Computer Supported Cooperative Work in Design, CSCWD 2012, art. no. 6221855, pp. 438-443.

Islam, S., Liu, P.X., El Saddik, A.

[Telemanipulation over wide-area internet communication networks with time varying delay](#)

(2012) 2012 IEEE I2MTC - International Instrumentation and Measurement Technology Conference, Proceedings, art. no. 6229543, pp. 2376-2380.

Islam, S., Liu, P.X., El Saddik, A.

[Wide-area measurement-based power system for smart transmission grid with communication delay](#)

(2012) 2012 IEEE I2MTC - International Instrumentation and Measurement Technology Conference, Proceedings, art. no. 6229458, pp. 138-143.

Yang, X., Liu, X.P., Liu, H., Fan, J.

[Transient stability of complex multi-machine systems based on NSDE](#)

(2012) Journal of Computational Information Systems, 8 (14), pp. 6049-6056.

Liu, X., Li, X., Shi, X., Huang, K., Liu, Y.

[A multi-type ant colony optimization \(MACO\) method for optimal land use allocation in large areas](#)

(2012) International Journal of Geographical Information Science, 26 (7), pp. 1325-1343.

Zheng, L., Chen, B., Wang, W., Liu, X., Cao, L., Kuang, Z.

[Remote visualization based on distributed rendering framework](#)

(2012) Jisuanji Yanjiu yu Fazhan/Computer Research and Development, 49 (7), pp. 1438-1449.

Liu, X., Tang, Y., Shen, G., Chen, X.

[A formal model of collaborative discussion for problem-solving](#)

(2012) Chinese Journal of Electronics, 21 (3), pp. 453-459.

Bu, S., Richard Yu, F., Cai, Y., Liu, X.P.

[When the smart grid meets energy-efficient communications: Green wireless cellular networks powered by the smart grid](#)

(2012) IEEE Transactions on Wireless Communications, 11 (8), art. no. 6210335, pp. 3014-3024.

Polushin, I.G., Liu, X.P., Lung, C.-H.

[Stability of bilateral teleoperators with generalized projection-based force reflection algorithms](#)

(2012) Automatica, 48 (6), pp. 1005-1016.

Liu, X.P., Gueaieb, W., Mukhopadhyay, S.C., Warwick, K., Yin, Z.

[Guest editorial introduction to the focused section on wireless mechatronics](#)

(2012) IEEE/ASME Transactions on Mechatronics, 17 (3), art. no. 6187730, pp. 397-403.

Liu, X., Xu, B., Peng, J., Shen, G.

[Model and solution of job-shop scheduling for parallel processes](#)

(2012) Jisuanji Fuzhu Sheji Yu Tuxingxue Xuebao/Journal of Computer-Aided Design and Computer Graphics, 24 (1), pp. 120-127.

Rhineland, J., Liu, X.P.

[Stochastic subset selection for learning with kernel machines](#)

(2012) IEEE Transactions on Systems, Man, and Cybernetics, Part B: Cybernetics, 42 (3), art. no. 6062422, pp. 616-626.

Li, C., Liu, X.P., Xu, S., Hu, C., Zhou, L.

[Design and implementation of a haptic interface device with auto-regulation gravity compensation](#)

(2011) HAVE 2011 - IEEE International Symposium on Haptic Audio-Visual Environments and Games, Proceedings, art. no. 6088387, pp. 158-163.

Hu, L., Liu, X.P., Liu, G., Xu, S.

[A force feedback algorithm for the wave-variable teleoperator with high stability](#)

(2011) HAVE 2011 - IEEE International Symposium on Haptic Audio-Visual Environments and Games, Proceedings, art. no. 6088404, pp. 164-173.

Zhou, L., Liu, X.P., Xu, S., Li, C.

[A novel haptic rendering algorithm based on vector median filter](#)

(2011) HAVE 2011 - IEEE International Symposium on Haptic Audio-Visual Environments and Games, Proceedings, art. no. 6088399, pp. 147-151.

Rhineland, J., Liu, X.P.

[Adaptive kernels for data recovery in tele-haptic and tele-operation environments](#)

(2011) HAVE 2011 - IEEE International Symposium on Haptic Audio-Visual Environments and Games, Proceedings, art. no. 6088401, pp. 152-157.

Liu, S., Liu, X.P., El Saddik, A.

[Modeling and dynamic gain scheduling for networked systems with bounded packet losses](#)

(2011) M and N 2011 - IEEE International Workshop on Measurements and Networking, Proceedings, art. no. 6088480, pp. 135-139.

Bu, S., Yu, F.R., Liu, P.X.

[Dynamic pricing for demand-side management in the smart grid](#)

(2011) 2011 IEEE Online Conference on Green Communications, GreenCom'11, art. no. 6082506, pp. 47-51.

Zheng, L., Choi, Y.-K., Liu, X., Wang, W.

[CVT-based 2D motion planning with maximal clearance](#)

(2011) Proceedings - IEEE International Conference on Robotics and Automation, art. no. 5980551, pp. 2281-2287.

Bu, S., Yu, F.R., Liu, P.X.

[A game-theoretical decision-making scheme for electricity retailers in the smart grid with demand-side management](#)

(2011) 2011 IEEE International Conference on Smart Grid Communications, SmartGridComm 2011, art. no. 6102353, pp. 387-391.

Polushin, I.G., Liu, P.X., Lung, C.-H.

[Human dynamics and stability of teleoperator systems with generalized projection-based force reaction algorithms](#)

(2011) IFAC Proceedings Volumes (IFAC-PapersOnline), 18 (PART 1), pp. 338-343.

Wang, M., Liu, X., Shi, P.

[Adaptive neural control of pure-feedback nonlinear time-delay systems via dynamic surface technique](#)

(2011) IEEE Transactions on Systems, Man, and Cybernetics, Part B: Cybernetics, 41 (6), art. no. 5959227, pp. 1681-1692.

Islam, S., Liu, P.X., Saddik, A.E.

[Model-based telehaptic systems with time varying communication delay](#)

(2011) VECIMS 2011 - 2011 IEEE International Conference on Virtual Environments, Human-Computer Interfaces and Measurement Systems, Proceedings, art. no. 6053853, pp. 53-58.

Wang, H., Liu, X.P.

[Haptic interaction for mobile assistive robots](#)

(2011) IEEE Transactions on Instrumentation and Measurement, 60 (11), art. no. 5971787, pp. 3501-3509.

Ding, J., Ding, F., Liu, X.P., Liu, G.

[Hierarchical least squares identification for linear SISO systems with dual-rate sampled-data](#)

(2011) IEEE Transactions on Automatic Control, 56 (11), art. no. 5779702, pp. 2677-2683.

Liu, X.P., Xu, S., Zhang, H., Hu, L.

[A new hybrid soft tissue model for visio-haptic simulation](#)

(2011) IEEE Transactions on Instrumentation and Measurement, 60 (11), art. no. 5961628, pp. 3570-3581.

Islam, S., Liu, P.X., Saddick, A.E.

[PD output feedback control design for robot manipulators: Experimental results](#)

(2011) Canadian Conference on Electrical and Computer Engineering, art. no. 6030707, pp. 001470-001473.

Islam, S., Liu, P.X., El Saddik, A.

[Teleoperation over internet communication networks under time varying delay](#)

(2011) IEEE International Conference on Automation and Logistics, ICAL, art. no. 6024676, pp. 12-17.

He, X., Goubran, R.A., Liu, X.P.

[Signal enhancement of wearable ECG monitoring sensors based on Ensemble Empirical Mode Decomposition](#)

(2011) MeMeA 2011 - 2011 IEEE International Symposium on Medical Measurements and Applications, Proceedings, art. no. 5966752, .

Bu, S., Yu, F.R., Liu, P.X., Tang, H.

[A computationally efficient method for joint authentication and intrusion detection in mobile ad-hoc networks](#)

(2011) IEEE International Conference on Communications, art. no. 5962858, .

Bu, S., Yu, F.R., Liu, X.P., Tang, H.

[Structural results for combined continuous user authentication and intrusion detection in high security mobile Ad-Hoc networks](#)

(2011) IEEE Transactions on Wireless Communications, 10 (9), art. no. 5961161, pp. 3064-3073.

Bu, S., Yu, F.R., Liu, P.X., Zhang, P.

[Distributed scheduling in smart grid communications with dynamic power demands and intermittent renewable energy resources](#)

(2011) IEEE International Conference on Communications, art. no. 5963580, .

Islam, S., Liu, P.X., Saddik, A.E., Liu, S.

[Internet-based teleoperation systems with time varying communication delay](#)

(2011) Conference Record - IEEE Instrumentation and Measurement Technology Conference, art. no. 5944160, pp. 1610-1615.

Liu, S., Liu, X.P., Saddik, A.E., Islam, S.

[Modeling and stochastic control of networked control system with packet losses](#)

(2011) Conference Record - IEEE Instrumentation and Measurement Technology Conference, art. no. 5944046, pp. 675-679.

Wang, K., Liu, X.P.

[Visual object tracking based on filtering methods](#)

(2011) Conference Record - IEEE Instrumentation and Measurement Technology Conference, art. no. 5944102, pp. 290-295.

Ding, F., Liu, G., Liu, X.P.

[Parameter estimation with scarce measurements](#)

(2011) Automatica, 47 (8), pp. 1646-1655.

Chu, J., Liu, X.P., Jiao, C., Miao, J., Wang, L.

[Multi-view reconstruction of annular outdoor scenes from binocular video using global relaxation iteration](#)

(2011) International Journal of Robotics and Automation, 26 (3), pp. 272-281.

Bu, S., Yu, F.R., Liu, P.X.

[Stochastic unit commitment in smart grid communications](#)

(2011) 2011 IEEE Conference on Computer Communications Workshops, INFOCOM WKSHPS 2011, art. no. 5928828, pp. 307-312.

Islam, S., Liu, P.X., El Saddik, A.

[Experimental comparison of model-based and model-free output feedback control system for robot manipulators](#)

(2011) Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 6752 LNAI, pp. 177-188.

Islam, S., Liu, P.X., El Saddik, A.

[Bilateral teleoperation system with time varying communication delay: Stability and convergence](#)

(2011) Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 6752 LNAI, pp. 156-166.

Islam, S., Liu, P.X., El Saddik, A.

[Intelligent control system design for a class of nonlinear mechanical systems](#)

(2011) Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 6752 LNAI, pp. 134-145.

Zhou, N., Liu, K., Liu, X., Chen, B.

[Adaptive fuzzy control of an active vibration isolator](#)

(2011) Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 6676 LNCS (PART 2), pp. 552-562.

Islam, S., Liu, X.P.

[Robust sliding mode control for robot manipulators](#)

(2011) IEEE Transactions on Industrial Electronics, 58 (6), art. no. 5530377, pp. 2444-2453.

Li, W., Liu, P.X.

[Adaptive tracking control of an MEMS gyroscope with H-infinity performance](#)

(2011) Journal of Control Theory and Applications, 9 (2), pp. 237-243.

Islam, S., Liu, P.X.

[Robust adaptive fuzzy output feedback control system for robot manipulators](#)

(2011) IEEE/ASME Transactions on Mechatronics, 16 (2), art. no. 5419959, pp. 288-296.

Bu, S., Yu, F.R., Liu, X.P., Mason, P., Tang, H.

[Distributed combined authentication and intrusion detection with data fusion in high-security mobile ad hoc networks](#)

(2011) IEEE Transactions on Vehicular Technology, 60 (3), art. no. 5678662, pp. 1025-1036.

Islam, S., Liu, P.X.

[A hybrid adaptive control approach for robust tracking of robotic manipulators: Theory and experiment](#)

(2011) Robotica, 29 (2), pp. 255-269.

Ding, F., Liu, X.P., Liu, G.

[Identification methods for Hammerstein nonlinear systems](#)

(2011) Digital Signal Processing: A Review Journal, 21 (2), pp. 215-238.

Hu, L., Liu, X.P., Liu, G., Xu, S.

[Trajectory tracking compensation for teleoperation with transmission delays](#)

(2011) Robotica, pp. 1-9. Article in Press.

Wang, Y.-Y., He, J.-Y., Liu, X.-P., Li, X.-F.

[A reliable stowage by means of syringe for preserving split-thickness-skin grafts](#)

(2011) Journal of Tissue Viability, 20 (1), pp. 35-36.

Islam, S., Liu, P.X.

[PD output feedback control design for industrial robotic manipulators](#)

(2011) IEEE/ASME Transactions on Mechatronics, 16 (1), art. no. 5398883, pp. 187-197.

Xu, S., Liu, X.P., Zhang, H., Hu, L.

[A nonlinear viscoelastic tensor-mass visual model for surgery simulation](#)

(2011) IEEE Transactions on Instrumentation and Measurement, 60 (1), art. no. 5559445, pp. 14-20.

Hua, C., Liu, X.P.

[Teleoperation over the internet with/without velocity signal](#)

(2011) IEEE Transactions on Instrumentation and Measurement, 60 (1), art. no. 5559443, pp. 4-13.

Wang, H., Liu, X.P.

[Human-robot interaction via haptic device](#)

(2010) HAVE 2010 - 2010 IEEE International Symposium on Haptic Audio-Visual Environments and Games, Proceedings, art. no. 5623983, pp. 151-156.

Xu, S., Liu, X.P., Zhang, H., Hu, L.

[An improved realistic mass-spring model for surgery simulation](#)

(2010) HAVE 2010 - 2010 IEEE International Symposium on Haptic Audio-Visual Environments and Games, Proceedings, art. no. 5623989, pp. 128-133.

Islam, S., Liu, P.X.

[Disturbance rejection in adaptive control for a class of nonlinear mechanical systems](#)

(2010) IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM, art. no. 5695731, pp. 762-767.

Bu, S., Yu, F.R., Liu, P.X., Tang, H., Mason, P.

[Distributed combined authentication and intrusion detection with data fusion in high security mobile ad-hoc networks](#)

(2010) Proceedings - IEEE Military Communications Conference MILCOM, art. no. 5680201, pp. 1080-1085.

Islam, S., Liu, P.X.

[Adaptive iterative learning control for robot manipulators without using velocity signals](#)

(2010) IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM, art. no. 5695935, pp. 1293-1298.

Islam, S., Liu, P.X.

[A distributed hybrid sliding mode control system for a class of nonlinear mechanical systems](#)

(2010) 2010 IEEE International Conference on Automation Science and Engineering, CASE 2010, art. no. 5584589, pp. 356-361.

Hu, L.-Y., Liu, X.P., Liu, G.-P.

[The wave-variable teleoperator with improved trajectory tracking](#)

(2010) 2010 8th IEEE International Conference on Control and Automation, ICCA 2010, art. no. 5524068, pp. 322-327.

Xing, Y.-S., Liu, X.P., Xu, S.-P.

[Efficient collision detection based on AABB trees and sort algorithm](#)

(2010) 2010 8th IEEE International Conference on Control and Automation, ICCA 2010, art. no. 5524093, pp. 328-332.

Ye, X.-F., Liu, S.-C., Liu, P.X.

[Modeling and stochastic control of networked control systems with packet loss](#)

(2010) Harbin Gongcheng Daxue Xuebao/Journal of Harbin Engineering University, 31 (10), pp. 1354-1359.

Chen, B., Liu, X., Liu, K., Lin, C.

[Fuzzy-approximation-based adaptive control of strict-feedback nonlinear systems with time delays](#)

(2010) IEEE Transactions on Fuzzy Systems, 18 (5), art. no. 5467228, pp. 883-892.

Hua, C.-C., Liu, X.P.

[Delay-dependent stability criteria of teleoperation systems with asymmetric time-varying delays](#)

(2010) IEEE Transactions on Robotics, 26 (5), art. no. 5510175, pp. 925-932.

Astar, W., Driscoll, J.B., Liu, X., Dadap, J.I., Green, W.M.J., Vlasov, Y.A., Carter, G.M., Osgood Jr., R.M.

[Tunable wavelength conversion by XPM in a silicon nanowire, and the potential for XPM-multicasting](#)

(2010) Journal of Lightwave Technology, 28 (17), art. no. 5491050, pp. 2499-2511.