Jane (Juan-Juan) Ye

Ph.D, M.B.A., B.Sc.

Current Position

Full Professor
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Education

Ph.D. 1990 Dalhousie University, Halifax (Nova Scotia), Canada

M.B.A. 1986 Dalhousie University, Halifax (Nova Scotia), Canada

B.Sc. 1982 Xiamen University, Xiamen (Fujian), China

Scholarships, Fellowships and Awards

2015 Krieger-Nelson Prize of Canadian Mathematical Society
1992-1997 NSERC Women's Faculty Award
1987-1990 Killam Postgraduate Scholarship
1986-1987 Dalhousie Graduate Fellowship

Employment

1982-1984, Assistant Lecturer, Xiamen University, China
1990-1992, Postdoctoral fellow at the CRM of the Université de Montréal
under supervision of Professor F.H. Clarke, director of the CRM.
1992-1997, Assistant Professor, University of Victoria
1997-2002, Associate Professor with Tenure, University of Victoria
2002-present, Professor with Tenure, University of Victoria

Visiting Professorship:

Universite de Pau March 2003, Universite de Perpignan May 2007, Universite de
Toulouse III June 2008; Hong Kong Polytechnic University, June 2009, Xiamen University:
November-December 2012, April-May 2013, November-December 2013, Hong Kong Baptist
University: October-December 2017, December 2018, Southern University of Science and
Technology, December 2019.

Fields of Interest

Nonsmooth Optimization and Variational Analysis
with a particular current interest in Bilevel Programs,
Mathematical Programs with Equilibrium Constraints,
Bilevel Control Problems (Stackelberg Differential Games),
Principal-Agent problems in Economics

Research Activities

a) Articles in Refereed Journals (* indicates graduate students or postdocs.)

99. L. Guo, J.J. Ye and J. Zhang, Sensitivity analysis of the maximal value function with applications in nonconvex minimax programs, Mathematics of Operations Research, revised.

98. L. Gao, J.J. Ye, H. Yin, S. Zeng and J. Zhang, Value function based difference-of-convex algorithm for bilevel hyperparameter selection problems, Proceedings of the 39th International Conference on Machine Learning, Baltimore, Maryland, USA, PMLR 162, 2022.

97. J.J. Ye, X. Yuan, S. Zeng* and J. Zhang, Difference of convex algorithms for bilevel programs with applications in hyperparameter selection, Mathematical Programming, submitted.

96. M. Benko, H. Gfrerer, J.J. Ye, J. Zhang and J. Zhou, Second-order optimality conditions for general nonconvex optimization problems and variational analysis of disjunctive systems, submitted.

95. X. Ma*, W. Yao*, J.J. Ye and J. Zhang, Combined approach with second-order optimality conditions for bilevel programming problems, submitted.

94. M. Xu and J.J. Ye, Relaxed constant positive linear dependence constraint qualification for disjunctive programs, submitted.

93. R. Ke, W. Yao*, J.J. Ye and J. Zhang, Generic property of the partial calmness condition for bilevel programming problems, *SIAM Journal on Optimization*, **32**(2022), 604-634.

92. N. Liu*, S. Qin and J.J. Ye, Neural network model for constrained nonsmooth nonconvex optimization problems, submitted.

90. J. Nie, L. Wang, J.J. Ye and S. Zhong*, A Lagrange multiplier expression method for bilevel polynomial optimization, *SIAM Journal on Optimization*, **31**(2021), 2368-2395.

89. Y.C. Liang and J.J. Ye, Optimality conditions and exact penalty for mathematical programs with switching constraints, *Journal on Optimization Theory and Applications*, **190**(2021), 1-31.

88. K. Bai* and J.J. Ye, Directional necessary optimality conditions for bilevel programs, *Mathematics of Operations Research*, **47**(2022), 1169-1191.

87. H. Gfrerer, J.J. Ye and J. Zhou, Second-order optimality conditions for non-convex set-constrained optimization problems, to appear in *Mathematics of Operations Research*, arXiv (1911.04076).

86. M. Xu and J.J. Ye, Relaxed constant positive linear dependence constraint qualification and its application to bilevel programs, *Journal of Global Optimization*, **78**(2020), 181-205.

85. J.J. Ye, X. Yuan, S. Zeng* and J. Zhang, Variational analysis perspective on linear convergence of some first-order methods for nonsmooth convex optimization problems, *Set-valued and Variational Analysis*, **29**(2021), 803-837.

84. X. Wang, J.J. Ye, X. Yuan, S. Zeng* and J. Zhang, Perturbation techniques for convergence analysis of proximal gradient method and other first-order algorithms via variational analysis, *Set-valued and Variational Analysis*, **30**(2022), 39-79.

83. H. Gfrerer and J.J. Ye, New sharp necessary optimality conditions for mathematical programs with equilibrium constraints, *Set-valued and Variational Analysis*, bf 28(2020), 395-426.

82. K. Bai*, J.J. Ye and J. Zhang, Directional quasi/pseudo-normality as sufficient conditions for metric subregularity, *SIAM Journal on Optimization*, **29**(2019), 2625-2649.

81. J-S. Chen, J.J. Ye, J. Zhang and J.C. Zhou, Exact formula for the second-order tangent set of the second-order cone complementarity set, *SIAM Journal on Optimization*, **29**(2019), 2986-3011.

80. J.J. Ye and J.C. Zhou, Verifiable sufficient conditions for the error bound property of second-order cone complementarity problems, *Mathematical Programming*, **171**(2018), 361-395.

79. A. Li and J.J. Ye, Necessary optimality conditions for implicit systems with applications to control of differential algebraic equations, *Set-valued and Variational Analysis*, **26**(2018), 179-203.

78. L. Guo* and J.J. Ye, Necessary optimality conditions and exact penalization for non-Lipschitz nonlinear programs, *Mathematical Programming*, **168**(2018), 571-598.

77. H. Gfrerer and J.J. Ye, New constraint qualifications for mathematical programs with equilibrium constraints via variational analysis, *SIAM Journal on Optimization*, **27**(2017), 842-865.

76. X. Chen, L. Guo*, Z. Lu and J.J. Ye, An augmented Lagragian method for non-Lipschitz nonconvex programming, SIAM Journal on Numerical Analysis, **55** (2017), 168-193.

75. J.J. Ye and J.C. Zhou, Exact formulas for the proximal/regular/limiting normal cone of the second-order cone complementarity set, *Mathematical Programming*, **162**(2017), 33-50.

74. J. Nie, L. Wang* and J.J. Ye, Bilevel polynomial programs and semidefinite relaxation methods, *SIAM Journal on Optimization*, **27**(2017), 1728-1757.

73. J.J. Ye, J. Zhou and W. Zhou*, Computing A-optimal and E-optimal designs for regression models via semidefinite programming, *Communications in Statistics and Computation*, **46**(2017), 2011-2024.

72. J.J. Ye and J.C. Zhou, First order optimality conditions for mathematical programs with second-order cone complementarity constraints, *SIAM Journal on Optimization*, **26**(2016), 2820-2846.

71. L. Guo* and J.J. Ye, Necessary optimality conditions for optimal control problems with equilibrium constraints, *SIAM Journal on Control and Optimization*, **54** (2016), 2710-2733.

70. A. Li and J.J. Ye, Necessary optimality conditions for optimal control problems with nonsmooth mixed state and control constraint, Set-valued and Variational Analysis, **24** (2016), 449-470.

69. M. Lei*, J. Zhang*, X. Dong and J.J. Ye, Modeling the bids of wind power producers in the day-ahead market with stochastic security-constrained market clearing, *Sustainable Energy Technologies and Assessments*, **16** (2016), 151-161.

68. M. Xu*, J.J. Ye and L. Zhang, Smoothing SQP methods for solving degenerate nonsmooth constrained optimization problems with applications to bilevel programs, *SIAM Journal on Optimization*, **25**(2015), 1388-1410.

67. M. Xu*, J.J. Ye and L. Zhang, Smoothing augmented Lagrangian method for solving nonsmooth and nonconvex constrained optimization problems, *Journal on Global Optimization*, **62**(2015), 675-694.

66. L. Guo*, G.H. Lin and J.J. Ye, Solving mathematical programs with equilibrium constraints, *Journal on Optimization Theory and Applications*, **166**(2015), 234-256.

65. P. Maréchal, J.J. Ye and J. Zhou, K-optimal design via semi-definite programming and entropy optimization, *Mathematics of Operations Research*, **40**(2014), 495-512.

64. L. Guo, G. Lin, J.J. Ye and J. Zhang*, Sensitivity analysis for parametric mathematical programs with equilibrium constraints, SIAM Journal on Optimization, **24**(2014), 1206-1237.

63. M. Xu*, S-Y. Wu and J.J. Ye, Solving semi-infinite programs by smoothing projected gradient method, *Computational Optimization and Applications*, **59**(2014), 591-616.

62. G.H. Lin, M. Xu*, and J.J. Ye, On solving simple bilevel programs with a nonconvex lower level program, *Mathematical Programming, Series A*, **144**(2014), 277-305.

61. M. Xu* and J.J. Ye, A smoothing augmented Lagrangian method for solving simple bilevel programs, *Computational Optimization and Applications*, **59**(2014), 353-377.

60. J.J. Ye and J. Zhang*, Enhanced Karush-Kuhn-Tucker condition for mathematical programs with equilibrium constraints, *Journal of Optimization Theory and Applications*, **147**(2014), 777-794.

59. J.J. Ye and J. Zhang*, Enhanced Karush-Kuhn-Tucker conditions and weaker constraint qualifications, *Mathematical Programming, Series B*, **139**(2013), 353-381.

58. D. Chao*, D. Sun and J.J. Ye, First order optimality conditions for mathematical programs with semidefinite cone complementarity constraints, *Mathematical Programming, Series A*, **147**(2014), 539-579.

57. J.J. Ye and J. Zhou, Minimizing the condition number to construct design points for polynomial regression models, *SIAM Journal on Optimization*, **23**(2013), 666-686.

56. L. Guo*, J.J. Ye and J. Zhang*, Mathematical programs with geometric constraints in Banach spaces: enhanced optimality, exact penalty, and sensitivity, *SIAM Journal on Optimization*, **23**(2013), 2295-2319.

55. L. Guo*, G.H. Lin and J.J. Ye, Second order optimality conditions for mathematical programs with equilibrium constraints, *Journal of Optimization Theory and Applications*, **158**(2013), 33-64.

54. L. Guo*, G.H. Lin and J.J. Ye, Stability analysis for parametric mathematical programs with geometric constraints and its applications, *SIAM Journal on Optimization*, **22**(2012), 1151-1176.

53. J.J. Ye, Exact Penalty Principle, *Noninear Analysis: Theory, Methods and Applications*, **75**(2012), 1642-1654.

52. Y. Liu*, H. Xu and J.J. Ye, Penalized sample average approximation methods for stochastic mathematical programs with equilibrium constraints, *Mathematics of Operations Research*, **36**(2011), 670-694.

51. J.J. Ye, Necessary optimality conditions for multiobjective bilevel programs, *Mathematics of Operations Research*, **36**(2011), 165-184.

50. H. Xu and J.J. Ye, Approximating stationary points of stochastic mathematical programs with equilibrium constraints via sample averaging, *Set-valued and Variational Analysis*, **19**(2011), 283-309.

49. X. Chen, R.S. Womersley and J.J. Ye, Minimizing the condition number of a Gram matrix, *SIAM Journal on Optimization*, **21**(2011), 127-148.

48. J.J. Ye and D.L. Zhu, New necessary optimality conditions for bilevel programs by combining MPEC and the value function approaches, *SIAM Journal on Optimization*, **20**(2010), 1885-1905.

47. H. Xu and J.J. Ye, Necessary optimality conditions for two stage stochastic programs with equilibrium constraints, *SIAM Journal on Optimization*, **20**(2010), 1685-1715.

46. P. Maréchal and J.J. Ye, Optimizing condition numbers, *SIAM Journal on Optimization*, **20**(2009), 935-947.

45. X. Chen and J.J. Ye, A class of quadratic Programs with linear complementarity Constraints, *Set-valued and Variational Analysis*, **17**(2009), 113-133.

44. H.H. Bauschke, X. Wang, J.J. Ye and X. Yuan*, Bregman distance and Klee sets, *Journal of Approximation Theory*, **158**(2009), 170-183.

43. H.H. Bauschke, X. Wang, J.J. Ye and X. Yuan*, Bregman distance and Chebyshev sets, *Journal of Approximation Theory*, **159**(2009).

42. G. S. Liu, J.J. Ye and J. Zhu*, Partial exact penalty for mathematical programs with equilibrium constraints, *Set-valued Analysis*, **16**(2008), 785-804.

41. D. Aussel and J.J. Ye, Quasiconvex minimization on a locally finite union of convex sets, *Journal of Optimization Theory and Applications*, **139**(2008), 1-16.

40. J.J. Ye and S.Y. Wu, First order optimality conditions for generalized semi-infinite programming problems, *Journal of Optimization Theory and Applications*, **137**(2008), 419-434.

39. G. S. Liu and J.J. Ye, A merit function piecewise SQP algorithm for solving mathematical programs with equilibrium constraints, *Journal of Optimization Theory and Applications*, **135**(2007), 623-641.

38. J.J. Ye and J. Zhou, Existence and symmetry of minimax regression designs, *Statistical Planning and Inference*, **137**(2007), 344-354.

37. P. Shi*, J.J. Ye and J. Zhou, Discrete minimax designs for regression models with autocorrelated MA errors, *Statistical Planning and Inference*, **137**(2007), 2721-2731.

36. J.J. Ye, Constraint qualifications and KKT conditions for bilevel programming problems, *Mathematics of Operations Research*, **31**(2006), 811-824.

35. D. Aussel and J.J. Ye, Quasiconvex programming with locally starshaped constraint region and applications to quasiconvex MPEC, *Optimization*, **55**(2006), 433-457.

34. A. Jourani and J.J. Ye, Error bounds for eigenvalue and semidefinite matrix inequality systems, *Mathematical Programming*, series B, **104**(2005), 525-540.

33. J.J. Ye, Necessary and sufficient optimality conditions for mathematical programs with equilibrium constraints, *Journal of Mathematical Analysis and Applications*, **307**(2005), 350-369.

32. J.J. Ye, Nondifferentiable multiplier rules for optimisation and bilevel optimisation problems, *SIAM Journal on Optimization*, **15**(2004), 252-274.

31. Z. Wu* and J.J. Ye, First and second order conditions for lower semicontinuous inequality systems, *SIAM Journal on Optimization*, **14**(2003), 621-645.

30. Z. Wu* and J.J. Ye, Equivalences among various derivatives and subdifferentials of the distance function, *Journal of Mathematical Analysis and Applications*, **282**(2003), 629-647.

29. P. Shi*, J.J. Ye and J. Zhou, Minimax robust designs for misspecified regression models, *Canadian Journal of Statistics*, **31**(2003), 1-18.

28. J.J. Ye and Q.J. Zhu, Multiobjective optimization problems with variational inequality constraints, *Mathematical Programming, Series A*, **96**(2003), 139-160.

27. Z. Wu* and J.J. Ye, On error bounds for lower semicontinuous functions, *Mathematical Programming*, Series A, **92**(2002), 301-314.

26. Y. Lucet* and J.J. Ye, Erratum "Sensitivity analysis of the value function for optimization problems with variational inequality constraints", *SIAM Journal on Control and Optimization,* **41**(2002), 1315-1319.

25. Y. Lucet* and J.J. Ye, Sensitivity analysis for optimization problems with variational inequality constraints, *SIAM Journal on Control and Optimization*, **40**(2001), 699-723.

24. Z. Wu* and J.J. Ye, Sufficient conditions for error bounds, *SIAM Jounal on Optimization*, **12**(2001), 421-435.

23. J.J. Ye, Multiplier rules under mixed assumption of differentiability and Lipschitz continuity, *SIAM Journal on Control and Optimization*, **39**(2001), 1441-1460.

22. J.J. Ye, Constraint qualifications and necessary optimality conditions for optimization problems with variational inequality constraints, *SIAM Journal on Optimization*, **10**(2000), 943-962.

21. J.J. Ye, Discontinuous solutions for the Hamilton-Jacobi equation for exit time problems, *SIAM Journal on Control and Optimization*, **38**(2000), 1067-1085.

20. Z. Wu* and J.J. Ye, Some results on integration of subdifferentials, *Nonlinear Analysis, Theory, Methods and Applications*, **39**(2000), 955-976.

19. J.J. Ye, Optimality conditions for optimization problem with complementarity constraints, *SIAM Journal on Optimization*, **9**(1999), 374-387.

18. J.J. Ye and Q. J. Zhu, Errata corrige:" Perturbed differential inclusion problems with nonadditive L^1 perturbations and applications" [J. Optim. Theory Appl. **92**(1997), no. 1, 189-208; MR 98a:49043], *Journal of Optimization Theory and Applications*, **103**(1999), 245-246.

17. J.J. Ye, New uniform parametric error bounds, *Journal of Optimization Theory and Applications*, **98**(1998), 197-219.

16. J.J. Ye and Q.J. Zhu, Hamilton-Jacobi Theory for a generalized optimal stopping time problem, *Nonlinear Analysis, Theory, Methods and Applications* **34**(1998), 1029-1053.

15. J.J. Ye and X.Y. Ye*, Necessary optimality conditions for optimization problems with variational inequality constraints, *Mathematics of Operations Research*, **22**(1997), 977-997.

14. J.J. Ye, Optimal strategies for bilevel dynamic problems, *SIAM Journal on Control and Optimization*, **35**(1997), 512-531.

13. J.J. Ye, D.L. Zhu and Q.J. Zhu, Exact penalization and necessary optimality conditions for generalized bilevel programming problems, *SIAM Journal on Optimization*, **7**(1997), 481-507.

12. J.J. Ye and Q.J. Zhu, Perturbed differential inclusion problems with nonadditive L^1 Perturbations and applications, *Journal of Optimization Theory and Applications*, **92**(1997), 189-208.

11. J.J. Ye and D.L. Zhu, A note on optimality conditions for bilevel programming problems, *Optimization*, **39**(1997), 361-366.

10. M.A.H. Dempster and J.J. Ye, Generalized Bellman-Hamilton-Jocabi optimality conditions for control problems with a boundary condition, *Applied Mathematics and Optimization*, **33**(1996), 211-225.

9. M.A.H. Dempster and J.J. Ye, Impulse control of piecewise deterministic Markov processes, *The Annals of Applied Probability*, **5**(1995), 399-423.

8. J.J. Ye and D.L.Zhu, Optimality conditions for bilevel programming problems, *Optimization*, **33**(1995), 9-27.

7. J.J. Ye, Necessary conditions for bilevel dynamic optimization problems, *SIAM Journal on Control and Optimization*, **33**(1995), 1208-1223,

6. R. Stern and J.J. Ye, Variational analysis of an extended eigenvalue problem, *Linear Algebra and Its Applications*, **220**(1995), 391-417.

5. J.J. Ye, Perturbed infinite horizon optimal control problems, *Journal of Mathematical Analysis and Applications*, **182**(1994), 90–112.

4. W.J. Reed and J.J. Ye, Cost-benefit analysis applied to wilderness preservation-option value, uncertainty and ditionicity, *Natural Resource Modeling*, **8**(1994), 335-371.

3. W.J. Reed and J.J. Ye, The role of stochastic monotonicity in the decision to conserve or harvest old-growth forest, *Natural Resource Modeling*, **8**(1994), 47-79.

2. J.J. Ye, A nonsmooth maximum principle for infinite-horizon problems, *Journal of Optimization Theory and Applications*, **76**(1993), 485–500.

1. M.A.H. Dempster and J.J. Ye, Necessary and sufficient optimality conditions for control of piecewise deterministic Markov processes, *Stochastics and Stochastics Reports*, **40**(1992), 125–145.

b) Articles in Refereed Conference Proceedings

1. P. Shi*, J.J. Ye and J. Zhou, Discrete minimax designs for regression models with autocorrelated MA errors, Proceedings of the 5th st. Petersburg workshop on simulation, 2005, 621-626.

2, J.J. Ye, Sensitivity analysis for mathematical program with equilibrium constraints, The proceeding of the 5th International Conference on Optimization: technique and applications, December 15-17, 2001, Hong Kong, D. Li (Editor), Contemporary Development Company, 48-55.

3. Z. Wu* and J.J. Ye, On error bounds for lower semicontinuous functions on Banach space, The proceeding of the 5th International Conference on Optimization: technique and applications, December 15-17, 2001, Hong Kong, D. Li (Editor), Contemporary Development Company, 56-63.

4. J.J. Ye, Necessary optimality conditions for control of strongly monotone variational inequalities, The proceeding of the IFIP WG 7.2 International Conference, June 19-22, Hangzhou, China, Chen, Li, Yong and Zhou (Editors), Kluwer Academic Publishers, 153-169.

5. J.J. Ye, Necessary optimality conditions for bilevel dynamic problems, 36th IEEE Conference on Decision and Control Proceeding, December 10-12,1997, Hyatt Regency San Diego, San Diego, California, 1405-1410.

6. J.J. Ye, Dynamic programming and the maximum principle for control of piecewise deterministic Markov processes, Mathematics of Stochastic Manufacturing Systems, AMS-SIAM Summer Seminar in Applied Mathematics, June 17-22, 1996, Williamsburg, Virginia. Lectures in Applied Mathematics, George Yin and Qing Zhang (Editors), AMS, Providence, Rhode Island, 365-383.

7. J.J. Ye, Generalized Bellman-Hamilton-Jacobi equation for control of piecewise deterministic Markov processes, Preceeding of 16th IFIP Conference on Optimization and Modeling, *Lecture Notes in Control and Information Sciences*, J. Henry and J.-P. Yvon eds., 541-550, 1994.

8. M.A.H. Dempster and J.J. Ye, A maximum principle for control of piecewise deterministic Markov processes, *Approximation and Computing Theory and Applications*, A.G. Law and L.C. Wang eds., Elsevier Science Publishers B.V. (North Holland), 235-240, 1990.

c) other publications

J.J. Ye, Constraint qualifications and optimality conditions in bilevel optimization, Bilevel Optimization: Advances and Next Challenges, ch. 8, Springer Optimization and its Applications, **161**(2020).

J.J. Ye, On solving bilevel optimization problems, CMS Notes, June 2016, p. 14.

d) Invited Conference Lectures

30-05-91, "Optimal control of piecewise deterministic Markov processes", Invited talk in Minisymposium of the 1991 Summer Meeting of the Canadian Mathematical Society, Université de Sherbrooke (Québec), 30 minutes.

09-92, "Impulse control of piecewise deterministic Markov processes", Invited talk in Minisymposium on Piecewise Deterministic Markov Processes, SIAM Conference on Control, University of Minnesota, Minneapolis, 30 minutes.

10-31-92, "Impulse control of piecewise deterministic Markov processes", Invited talk in the West Coast Optimization Seminar, U.B.C., Vancouver, 45 minutes.

03-93, "Optimality conditions for bilevel optimization problems", Invited talk at the workshop on "Convexity, Monotonicity and Differentiability", Fields Institute, University of Waterloo, 30 minutes.

12-13-94, " Perturbed differential inclusion problems with nonadditive L^1 perturbation and its applications", Invited to speak in Minisymposia "Nonsmooth Analysis" at the 1994 CMS Winter Meeting, McGill University, Quebec, 30 minutes.

06-27-95, "Necessary optimality conditions for static and dynamic bilevel problems", invited to speak in the workshop "Nonsmooth Analysis and its Applications", Pau, France, 30 minutes.

08-14-96 "Application of nonsmooth analysis to bilevel programming problems", Invited to speak in the PIM's workshop on Analysis and its Computational Applications, CECM, Simon Fraser University, Vancouver, 45 minutes.

11-02-96, "Exact penalization and necessary optimality conditions for bilevel programming problems", Invited talk in the session of bilevel programming problems in INFORMS Meeting, Atlanta, Georgia, 30 minutes.

05-02-97, "Necessary and sufficient optimality conditions for optimization problems with variational inequality constraints", Invited to speak in the special session on Optimization and Variational Analysis, AMS meeting, Wayne State University, Detroit Michigan, 30 minutes.

04-25-98, " Necessary and sufficient optimality conditions for optimization problems with complementarity constraints", Invited speaker in the West Coast Optimization Meeting, SFU, Vancouver, 45 minutes.

06-19-98, "Necessary optimality conditions for control of strongly monotone variational inequalities", Invited speaker in the Conference on Control of Distributed Parameter and Stochastic Systems, Hangzhou, China, 45 minutes.

10-25-98, "Optimality conditions for optimization problems with variational inequality constraints by derivatives of set-valued maps", Invited talk in the session on Mathematical Programming with Equilibrium Constraints, INFORMS Meeting, Seattle, 25 minutes.

12-15-98, "Optimality conditions for bilevel programming problems involving coderivatives", Invited talk in the Session on Bilevel Programming Problems, International Conference on Nonlinear Programming and Variational Inequalities, Hong Kong, 25 minutes.

04-23-99, "Constraint qualifications and necessary optimality conditions for optimization problems with variational inequality constraints", Invited talk in the West Coast Optimization Meeting, SFU, Vancouver, 45 minutes.

08-13-99, "Sensitivity analysis for optimization problems with variational inequality constraints", Invited talk in the Second Annual Midwest Optimization Meeting, University of Toledo, Ohio, USA, 45 minutes.

07-19-00, "Lagrange multiplier rule under mixed assumptions", Invited talk in the special session on Variational Analysis and Optimization, The Third World Congress of Nonlinear Analysis, University of Catania, Italy, 45 minutes.

11-5-01, "Sensitivity analysis for optimization problem with variational inequality constraints", Invited talk in the invited cluster "Bilevel Programming" in the INFORMS 2001 Annual Meeting, Miami Beach, 25 minutes.

12-15-01, "Sensitivity analysis for mathematical program with equilibrium constraints", Invited talk in the session on MPECs and Error Bounds of the 5th International Conference on Optimization: Technique and Application, Hong Kong, 25 minutes.

10-13-02, "Error bounds for lower semicontinuous inequality systems". Invited talk in the special session dedicated to Jack Warga's 80th birthday, CDC, Las Vegas, 25 minutes.

04-04, "Nondifferentiable multiplier rules for optimization and bilevel optimization problems", Invited talk in the West Coast Optimization Meeting, University of Washington, Seattle, 30 minutes.

05-04, "Necessary and sufficient optimality conditions for MPECs", Invited talk in the special session on "MPEC, Bilevel Programming and Variational Analysis", CORS/INFORMS International Meeting, Banff, Alberta, Canada, 25 minutes.

04-05, "Quasiconvex programming with locally starsharped constraint region and applications to quasiconvex MPEC", Invited talk in the West Coast Optimization Meeting, University of Washington, Seattle, 30 minutes.

12-05, "First order optimality conditions for generalized semi-infinite programming problems, Invited talk in the special session on Variational Analysis and Optimization, CMS Winter Meeting, Victoria, December 2005, 30 minutes.

05-06, "Constraint qualifications and KKT Conditions for bilevel programming problems", Invited talk in the International Conference on Nonlinear Programming with Applications, Fudan University, China, May 29- June 1, 2006, 30 minutes.

08-07, "Partial exact penalty for mathematical programs with equilibrium constraints", Invited talk in the special session on Nonsmooth Analysis and Applications at the Second Mathematical Programming Society International Conference on Continuous Optimization: ICCOPT II & MOPTA07, McMaster university, Hamilton, Ontario, August 13-16, 2007, 30 minutes.

11-07, "Minimax Robust Regression Designs". Invited talk in the West Coast Optimization Meeting, UBC Okanagan, Kelowna, November 2007, 30 minutes.

12-07, "Necessary optimality conditions for bilevel programming problems". Invited Talk in the International Workshop on Numerical Optimization Methods and Applications, Hirosaki University, Japan, December 10, 2007, 45 minutes.

12-07, "Necessary optimality conditions for generalized semi-infinite programming problems". Invited talk in the special session on Semi-infinite Programming, the 7th International Conference on Optimization: Technique and Applications, Kobe, Japan, Dec. 12-17, 2007, 30 minutes.

12-07, "Partial exact penalty for mathematical programs with equilibrium constraints". Invited talk in the special session on Equilibrium Problems, the 7th International Conference on Optimization: Technique and Applications, Kobe, Japan, Dec. 12-17, 2007, 30 minutes.

07-08, "New necessary optimality conditions for bilevel programming problems by combined value function and MPEC approach". Invited Talk in the special session of Variational Analysis in the World Congress of Nonlinear Analysis, Olando, Florida, July 2-9, 2008, 30 minutes.

05-09, Necessary optimality conditions for bilevel dynamic optimization problems. Invited talk in the Workshop on Control, Nonsmooth Analysis and Optimization, May 4-8 2009, Porto, Portugal.

27-05-09, New necessary optimality conditions for bilevel programming problems. Invited Talk in the International Conference on Engineering and Computational mathematics, May 27-29, 2009, The Hong Kong Polytechnic University, Hong Kong, 30 minutes.

13-08-09, Optimizing condition numbers. Invited Talk in the special session on Optimization and Approximation of the second CMS and SMM meeting, August 13-15, 2009, UBC, Vancouver, 25 minutes.

23-08-09, Necessary optimality conditions for stochastic programs with equilibrium constraints. Invited talk in the session Stochastic Programming and Equilibrium Systems of the cluster of Variational Analysis, 20th International Symposium on Mathematical Programming, Chicago, 30 minutes.

25-10-09, Optimizing condition numbers. Invited talk in the West Coast Optimization Meeting, SFU Surrey Campus, 45 minutes.

20-09-10, Necessary optimality conditions for bilevel programming problems. Invited talk in the 10th International Conference on Parametric Optimization and Related Topics, Karlsruhe, Germany, 30 minutes.

12-10, Necessary optimality conditions for multiobjective bilevel programs. Invited talk in the stream MPEC and Bilevel Programming Problems of the 8th International Conference on Optimization: Technique and Applications, Shanghai, China.

13-01-2012, On solving bilevel programs with a nonconvex lower level program, Semi-plenary speaker of the III Latin American Workshop on Optimization and Control, Valparaiso, Chile, 40 minutes.

24-08-2012, On solving bilevel programs with a nonconvex lower level program, Invited speaker of the special session on Bilevel Programming and MPECs of the cluster of Complementarity and Variational Inequalities, 21th International Symposium on Mathematical Programming, Berlin, 30 minutes.

20-12-2012, Stability analysis for parametric mathematical programs with geometric constraints and its applications, Semi-plenary talk, Workshop on Complementarity and its Extensions, National University of Singapore, 30 minutes.

08-08-2013, Minimizing the condition number to construct optimal experimental designs, Plenary Talk in Workshop on Numerical Linear Algebra and Optimization, UBC, 25 minutes.

13-12-2013, On solving bilevel programs with a nonconvex lower level program, Semi-plenary talk, the 9th International Conference on Optimization: Technique and Applications, Taibei, Taiwan, December 12-16, 2013, 35 minutes.

17-12-2013, Smoothing SQP methods for solving non convex and non smooth constrained optimization problems, invited talk, stream 2 of the Second International Conference on Engineering and Computational Mathematics (ECM2013), the Hong Kong Polytechnic University, Hong Kong, 30 minutes.

20-05-2014, Solving bilevel programs by smoothing techniques, invited talk, the minisymposium on Bilevel Program and Related Topics, SIAM Conference on Optimization, San Diego, California, 30 minutes.

21-10-2014, Necessary optimality conditions for bilevel dynamic optimization problems, Invited talk in the workshop on Bilevel Optimal Control-Combining Theoretical and Numerical Approaches, Heidelberg University, Heidelberg, Germany, 30 minutes

19-05-2015, Necessary optimality conditions for optimal control problems with equilibrium constraints, Plenary talk in the International Conference on Variational Analysis, Optimization and Quantitative Finance in Honor of Terry Rockafellar's 80th Birthday, University of Limoges, France, May 18-22, 2015, 30 minutes.

6-06-2015, On solving bilevel optimization problem and optimization problems with equilibrium constraints, Krieger-Nelson Prize Lecture, 2015 CMS summer meeting, Charlottetown, P.E.I., Canada, June 4-6, 2015, one hour.

14-07-2015, Necessary optimality conditions for optimal control problems with complementarity constraints, Invited talk in the session on bilevel optimal control of the cluster on PDE-constrained optimization and multi-level/multi-grid methods, 22nd International Symposium on Mathematical Programming, Pittsburgh, July 14, 2015, 30 minutes.

10-10-2015, On solving bilevel programming probems, Invited talk in the West Coast Optimization Meeting, UBC Okanagain Campus, Oct. 10, 2015, 30 minutes.

04-05-2016, On solving polynomial bilevel programming probems, Invited talk in the International Conference on Bilevel Optimization and Related Topics: in honor of Stephan Dempe's 60th birthday, Dresden Germany, May 4, 2016, 30 minutes.

02-2017, On solving non-Lipschitz nonconvex programs: necessary optimality conditions, exact penalization and an augmented Lagrangian method, Invited talk in the Computaional Optimization Steam of the Third International Conference on Engineering and Computational Mathematics (ECM2017), The Hong Kong Polytechnic University, Hong Kong, 30 minutes.

09-2017, On mathematical programs with second-order cone complementarity constraints: necessary optimality conditions and constraint qualifications, Invited talk in the 11th International Conference on Parametric Optimization and Related Topics, Prague, Czech Republic, 25 minutes.

04-2018, Variational analysis perspective on linear convergence of some first order methods for nonsmooth optimization problelms, Invited speaker, in the special session on Nonsmooth Optimization and Applications (Dedicated to Prof. B. S. Mordukhovich on the occasion of his 70th birthday), Spring Western Sectional Meeting of the American Mathematical Society, Portland, Oregon, 35 minutes.

10-2018, Calmness and its application to linear convergence, Plenary speaker, the 2018 Midwest Optimization Meeting, Miami University, Oxford, Ohio, 45 minutes.

12-2018, Weaker sufficient conditions for metric subregularity and directional quasi/pseudo-normality, Invited speaker in the international workshop on Variational Analysis and Related Topics, Hanoi Pedagogical University 2, Hanoi, Vietnam, 40 minutes.

12-2018, On solving bilevel optimization problems, Invited speaker in the international conference on polynomial and tensor optimization, Xiangtan University, Xiangtan City, Hunan, China, 40 minutes.

06-2019, Calmness and its applications to linear convergence of some first order methods for nonsmooth optimization problems, Invited talk in the international workshop on "Advances in Nonsmooth Analysis and Optimization", School of Mathematics "G. Stampacchia", International Centre for Scientific Culture "E. Majorana", Erice, Italy, 35 minutes.

08-2019, On solving bilevel optimization problems, Invited speaker in the workshop on "Variational Analysis and Optimization", UBC Okanagan, Kelowna, 35 minutes.

10-2020, Directional necessary optimality conditions for bilevel programs, Invited speaker in the 2020 Midwest Optimization (Virtual) Meeting.

11-2020, Generic property of the partial calmness condition for bilevel programming problems, Invited speaker in the 2020 workshop on advances in optimization theory and applications, online talk.

12-2020, Second-order optimality conditions for non-convex set-constrained optimization problems, Invited speaker in the fifth workshop on Optimization, Metric Bounds, Approximation and Transversality (WOMBAT2020), online edition.

12-2020, Second-order optimality conditions for non-convex set-constrained optimization problem, Invited speaker in the session Variational Analysis: Theory and Applications of 2020 CMS Winter Meeting, online edition.

01-2021, Second-order optimality conditions for non-convex set-constrained optimization problems, Invited speaker in AMS special session on Variational Analysis and Optimization of 2021 Virtual Joint Mathematics Meetings (JMM).

05-2021, On solving bilevel optimization problems, invited one hour talk in One World Optimization Seminar which is a virtual seminar run once every week since April 20, 2020.

6-2021, Bilevel difference of convex programs with applications in hyperparameter selection, Invited speaker in the session Variational Analysis: Theory and Applications of 2021 CMS Summer Meeting, online edition.

07-2021, Directional necessary optimality conditions for bilevel programs, Invited speaker in the 31st European Conference on Operational Research (EUEO), Athens Greece.

07-2021, Directional necessary optimality conditions for bilevel programs, Invited speaker in the session Variational Analysis: Theory and Applications of 2021 SIAM Conference on Optimization, online edition.

11-2021, Difference of convex algorithms for bilevel programs with applications in hyperparameter selection: Invited speaker in Variational Analysis and Optimisation Webinar of the Mathematics of Computation and Optimisation of Australia Mathematics Society.

06-2022, On relaxed constant positive linear dependence constraint qualification, Invited speaker in the session variational analysis theory and applications of 2022 CMS Summer meeting, St. Johns, Newfoundland.

e) Conference Organization

Cluster chair of the cluster "Varitional Inequalities and Complementarity Problems, International Conference on Continuous Optimization (ICCOPT2022), July 25-28, 2022.

Member of the organizing committee for the workshop on Continuous Optimization in the Conference on the Foundations of Computational Mathematics, June 12-21, 2023.

Organizer of the conference "Advances in Nonsmooth Analysis and Applications 2019", Southern University of Science and Technology, Shenzhen, China, December 7-9, 2019.

Member of the program committee: 11th International Conference on Parametric Optimization and Related Topics, Prague, Czech Republic, September 19-22, 2017.

Organizer of the mini-symposium on Bilevel Program and Related Topics, SIAM Conference on Optimization, San Diego, California, May 19-22, 2014.

Chair and organizer of the special session on Nonsmooth Optimization: the 9th International Conference on Optimization: Technique and Applications, Taibei, Taiwan, December 12-16, 2013.

Member of the Organizing Committee: the 9th International Conference on Optimization: Technique and Applications, Taibei, Taiwan, December 12-16, 2013.

Organizer of the West Coast Optimization Meeting, University of Victoria, Oct. 4-5, 2013.

Chair and organizer of the stream on Bilevel Programming Problems and MPECs of the cluster of Complementarity and Variational Inequalities, 21th International Symposium on Mathematical Programming, Berlin, August 19-24, 2012.

Chair and organizer of the stream on MPECs and Bilevel Programming Problems: the 8th International Conference on Optimization: Technique and Applications, Shanghai, China, December 10-13, 2010.

Member of the international program committee: the 8th International Conference on Optimization: Technique and Applications, Shanghai, China, December 10-13, 2010.

Chair and organizer of the special sessions on MPECs and Related Topics: 10th International Conference on Parametric Optimization and Related Topics, Karlsruhe, Germany, September 20-24, 2010.

Member of the Program committee: 10th International Conference on Parametric Optimization and Related Topics, Karlsruhe, Germany, September 20-24, 2010.

Chair and organizer of the special session on Stochastic Programming and Equilibrium Systems of the cluster of Variational Analysis, 20th International Symposium on Mathematical Programming, Chicago, August 23-28, 2009.

Chair and organizer of the special session on Nonsmooth Analysis and Applications II, ICCOPT II MOPTA 07, MacMaster University, August 2007.

Chair and organizer of the special session on Variational Analysis and Optimization, Canadian Mathematics Society Winter Meeting, Victoria, December 2005.

Chair and organizer of the special session on MPECs, Bilevel Programming and Variational Analysis in Optimization, CORS/INFORMS, Banff, Canada, May 2004

Chair and organizer of the special session on Error Bounds and MPECs, ICOTA5, Hong Kong, December 2001.

Chair and organizer of the special session on Bilevel Programming and MPEC, International Conference on Nonlinear Programming and Variational Inequalities, Hong Kong, December 1998.

f) Membership and service on international, national and provincial professional bodies and societies

Killam Selection Committee, Canada Council for the Arts, July 2010-June 2013.

Member of the Association for Women in Mathematics Committee on selection of Noether lecturer for the international congress of mathematics 2002, Beijing,

g) Editorial boards

Associate editor for Set-valued and Variational Analysis: July 2014-

Associate editor for SIAM Journal on Optimization: November 2017-

Associate editor for Mathematics of Operations Research: November 2021-

h) Theses of Graduate Students who I supervised or co-supervised

1. X.Y. Ye, Optimization problems with variational inequality constraints, M.Sc. Theses, University of Victoria, 1995. Currently a Biostatistician, Samuel Lunenfeld Research Institute of Mount Sinai Hospital.

2. Zili Wu, Subdifferentials and their applications, M.Sc. Thesis, University of Victoria, 1997. Currently an associate professor in Xi'an Jiaoton-Liverpool University, China.

3. Zili Wu, Error bounds for an inequality system. Ph.D. Thesis, University of Victoria, 2001. Currently an associate professor in Xi'an Jiaoton-Liverpool University, China.

4. Peilin Shi (co-supervised with Julie Zhou), Minimax robust designs for misspecified regression models. Ph.D. Thesis, University of Victoria, 2002. Currently a statistician in Tufts University Friedman School, USA.

5. Jiaping Zhu, A smoothing penalty method for mathematical programs with equilibrium constraints. M. Sc. Thesis, University of Victoria, 2005.

6. Bibo Liu, Mathematics of Principal-Agent Problems, M.Sc. Thesis, University of Victoria, 2008. Currently a Financial Analyst for Ping An Trust, China.

7. Mojdeh Shadnam (co-supervied with Martial Aqueh), Mathematics of Principal-Agent Problem with Adverse Selection, M.Sc. Thesis, University of Victoria, 2011.

8. Jin Zhang, Enhanced Optimality Conditions and New Constraint Qualifications, Ph.D. Thesis, University of Victoria, 2014. Currently an assistant professor, Southern University of Science and Technology, Shenzhen, China.

9. Mengwei Xu (co-supervised with Liwei Zhang), Study on Numerical Algorithms for a Class of Bilevel Programming Problems, Ph.D. Thesis, Dalian University of Science and Technology, 2014. Currently an Associate Professor in Heibei University of Technology, Tianjin, China.

10. Wenjie Zhou (co-supervised with Julie Zhou), Computing Optimal Designs for Regression Models via Convex Programming, M.Sc. Thesis, University of Victoria, 2015. Currently a software engineer of Amazon, Vancouver branch.

11. Bo Wang (co-supervised with Liwei Zhang), Sequential Convex Approximation Approach for a Class of Matrix Variable Quadratic Function Minimization Problems with Rank Constraint, Ph.D. Thesis, Dalian University of Science and Technology, 2015. Currently a lecturer in Fuzhou University, China.

12. Hassan ALNasser (co-supervised with Julie Zhou), On Ridge Regression and Lasso, M.Sc. Thesis, University of Victoria, 2017.

13. Kuang Bai, Directional Constraint Qualification and Optimality Conditions with Application to Bilevel Program, Ph.D. Thesis, University of Victoria, 2020. Currently a research assistant professor in Hong Kong Polytechnic University.

14. Zhuoyu Xiao, Optimality Conditions for Cardinality Constrained Optimization Problems, MSc. Thesis, University of Victoria, 2022.

i) Postdoctors and Research Associates that I supervised

Qiji Jim Zhu, May-Aug. 1994. Currently a full professor of University of Western Michigan, USA.
Yves Lucet, Sept. 1998- April 1999. Currently a full professor of UBC, Okanagan Campus, Canada.
Zili Wu, Sept. 2001-July 2002. Currently an associate professor in Xi'an Jiaoton-Liverpool University, China.
Peilin Shi (co-supervied with Julie Zhou), Jan. 2004-June 2006. Currently a statistician in Tufts University Friedman School, USA.
Xiaoming Yuan (co-supervied with Julie Zhou, Heinz Bauschke and Shawn Wang), Jan.-Dec. 2005, March. 2007-Aug. 2007. Currently a full professor of University of Hong Kong, Hong Kong, China.
Hongxia Yin (co-supervied with Wusheng Lu), Jan.-Aug. 2007. Currently a full professor of Minnesota State University, USA.
An Li, June-Nov. 2010. Currently a full professor of Xiamen University, China.
Hung Phan, Sept.-Aug. 2013. Currently an associate Professor, the University of Massachusetts Lowell, USA.
Lei Guo, Jan. 2014-Jan. 2015. Currently an associate professor in East China University of Science and Technology, China.
Li Wang, Jan. 2015-Aug. 2015. Currently an associate professor of University of Texas at Arlington, USA.

j) Examinator for a Habilitation Degree

Yves Lucet, June 2008, University of Toulouse III, France.

k) Graduate Students and Postdoctors that I am supervising

PhD students: Xinkai Zhuang (co-supervised with Zhiping Chen), 2015.9-present. Na Liu (co-supervised with Sitian Qin), 2019.9-present, Xiaoxiao Ma, 2020.9-present. Postdoc: Shangzhi Zeng (co-supervising with Julie Zhou)

l) Undergraduate Students Supervised

Alistair Brogan (2008), Hassan ALNasser (Co-supervised with Julie Zhou, 2013), Carolyn Tsao (2014), Zach Prinz (2017), Brendan Steed (2019).