Jane (Juan-Juan) Ye

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

Current Position

Full Professor
Department of Mathematics and Statistics
University of Victoria, P.O. Box 3060 STN CSC
Victoria, British Columbia, Canada V8W 3R4
Telephone: 250-721-6160
Fax: 250-721-8962
e-mail: Janeye@uvic.ca
http://www.math.uvic.ca/faculty/janeye

Education

Ph.D. 1990 Dalhousie University, Halifax (Nova Scotia), Canada
Thesis: *Optimal control of piecewise deterministic Markov processes.*
Supervisor: Professor Michael A.H. Dempster

M.B.A. 1986 Dalhousie University, Halifax (Nova Scotia), Canada
Field of study: Operations research and statistics.

B.Sc. 1982 Xiamen University, Xiamen (Fujian), China
Field of study: Pure mathematics.

Scholarships, Fellowships and Awards

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 the 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

Fields of Interest

Optimization Theory
Nonsmooth Analysis
Application of Optimization to Economics and Statistics

Research Activities

a) Articles in Refereed Journals

D. Chao, D. Sun and J.J. Ye, First order optimality conditions for mathematical programs with semidefinite cone complementarity constraints, submitted for publication, 2010.

J.J. Ye and J. Zhang, Enhanced Karush-Kuhn-Tucker conditions and weaker constriant qualifications, to appear in *Mathematical Programming*, Series B.

Y. Liu, H. Xu and J.J. Ye, Penalized sample average approximation methods for stochastic mathematical programs with equilibrium constraints, to appear in *Mathematics of Operations Research*.

J.J. Ye, Exact Penalty Principle, to appear in Noninear Analysis Series A: Theory, Mathods & Applications.

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

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.

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.

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.

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.

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

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

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

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

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.

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.

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.

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.

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

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.

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

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

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

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

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

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

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

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

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

Zili Wu and J.J. Ye, On error bounds for lower semicontinuous functions, *Mathematical Programming*, **92**(2002), pp.301-314.

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), pp. 1315-1319.

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

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

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

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

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

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

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

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), pp. 245-246.

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

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), pp. 1029-1053.

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

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

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), pp.481-507.

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), pp. 189-208.

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

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), pp. 211-225.

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

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

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

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

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

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

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), pp. 47-79.

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

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), pp. 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 5^{th} 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 5^{th} 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. Hangzhou.

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 16^{th} 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) 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.

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.

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.

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 5^{th} 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 combinded 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.

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.

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.

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, August 23-28, 2009.

10-09, Optimization condition numbers. Invited talk in the West Coast Optimization Meeting, SFU Surry Campus, Oct. 25, 2009.

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

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.

d) Chair and Organizer of Special Sessions in Conferences

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.

The special session on Nonsmooth Analysis and Applications II, ICCOPT II MOPTA 07, MacMaster University, August 2007.

The special session on Variational Analysis and Optimization, Canadian Mathematics Society Winter Meeting, Victoria, December 2005.

The special session on MPECs, Bilevel Programming and Variational Analysis in Optimization, CORS/INFORMS, Banff, Canada, May 2004

The special session on Error Bounds and MPECs, ICOTA5, Hong Kong, December 2001.

The special session on Bilevel Programming and MPEC, International Conference on Nonlinear Programming and Variational Inequalities, Hong Kong, December 1998.

e) Reviews for journals

Reviewer for Mathematical Reviews since 1997

Reviewer for forteen journals such as Mathematical Programming, SIAM Journal on Control and Optimization, SIAM journal on Optimization, Mathematical Programming, Mathematics of Operations Research, Journal of Global Optimization, Journal of Optimization Theory and Applications.

f) Theses of Graduate Students That I supervised

1. X.Y. Ye, Optimization problems with variational inequality constraints, M.Sc. Theses, University of Victoria, 1995.

2. Zili Wu, Subdifferentials and their applications, M.Sc. Thesis, University of Victoria, 1997.

3. Zili Wu, Error bounds for an inequality system. Ph.D. Thesis, University of Victoria, 2001.

4. Peilin Shi, Minimax robust designs for misspecified regression models. Ph.D. Thesis, University of Victoria, 2002.

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 Principle-Agent Problems, M.Sc. Thesis, University of Victoria, 2008.

7. Mojdeh Shadnam, Mathematics of Principle-Agent Problem with Adverse Selection, M.Sc. Thesis, University of Victoria, 2011.

g) Postdoctors That I supervised

Qiji Zhu, May-Aug. 1994. Currently a full professor of University of Western Michigan, U.S.A.
Yves Lucet, Sept. 1998- April 1999. Currrently an associate professor of UBC, Okanagan Campus, Canada.
Peilin Shi, Jan. 2004-June 2006. Currently a senior statistician in Department of Epidemiology, Harvard School of Public Health.
Xiaoming Yuan, Jan.-Dec. 2005, March. 2007-Aug. 2007. Currently an assistant professor of Hong Kong Baptist University, Hong Kong.

h) Visiting Professorship: Universite de Pau March 2003, University de Perpignan May 2007, University de Toulouse III June 2008.

i) Examinator for a Habilitation Degree

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