Curriculum Vitae

Ting Kei Pong

Address

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Area of interest

I am currently interested in convex optimization, algorithms and related applications.

Education

07/2013–07/2014	PIMS postdoctoral fellow at University of British Columbia, Vancouver, BC, Canada. Mentor: Professor Michael Friedlander
06/2011–07/2013	Postdoctoral fellow at University of Waterloo, Waterloo, ON, Canada. Mentors: Professor Stephen Vavasis/ Professor Henry Wolkowicz
09/2006–06/2011	Ph.D. studies in Mathematics at University of Washington, Seattle, WA, USA. Thesis: *Convex optimization in sensor network localization and multi-task learning* Thesis Advisors: Professor Maryam Fazel/ Professor Rekha Thomas/ Professor Paul Tseng
09/2004–08/2006	M.Phil. studies in Mathematics at the Chinese University of Hong Kong, Hong Kong Thesis: *The strong conical hull intersection property for systems of closed convex sets* Thesis Advisor: Professor Kung Fu Ng

09/2001–08/2004 Undergraduate studies in Mathematics at the Chinese University of Hong Kong, Hong Kong

Review for Journals

ANZIAM Journal, Applied and Computational Harmonic Analysis, Applied Numerical Mathematics, Automatica, CALCOLO, Canadian Journal of Statistics, Computational Optimization and Applications, Computational Statistics and Data Analysis, IEEE Transactions on Information Theory, IEEE Transactions on Mobile Computing, IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Signal Processing, IMA Journal of Numerical Analysis, Journal of Global Optimization, Journal of Optimization Theory and Applications, Mathematics of Operations Research, Mathematical Programming, Naval Research Logistics, NIPS, Numerical Algorithms, Operations Research Letters, Optimization and Engineering, Optimization Methods and Software, Pacific Journal of Optimization, SIAM Journal on Imaging Sciences, SIAM Journal on Matrix Analysis and Applications, SIAM Journal on Numerical Analysis, SIAM Journal on Optimization, Transactions on Mathematical Software, Transactions on Sensor Networks.

Conference Talks

08/2016	ICCOPT 2016, *Explicit Estimation of KL Exponent and Linear Convergence of 1st-order Methods*
07/2015	ISMP 2015, *Splitting Methods for Nonconvex Feasibility Problems*
05/2014	WCOM 2014, *Gauge Optimization and Duality*
10/2013	WCOM 2013, *The Proximal-proximal Gradient Algorithm*
05/2013	Optimization Days 2013, *Generalized Trust Region Subproblem: Analysis and Algorithm*
08/2012	ISMP 2012, *Generalized Trust Region Subproblem: Analysis and Algorithm*
10/2011	MWOM 2011, *Efficient Solutions for Large-scale Trust Region Subproblem*
05/2010	WCOM 2010, *ESDP Relaxation of Sensor Network Localization: Analysis, Extensions and Algorithm*
08/2009	ISMP 2009, *ESDP Relaxation of Sensor Network Localization: Analysis, Extensions and Algorithm*
08/2008	MOPTA 2008, *ESDP Relaxation of Sensor Network Localization*

Preprints

1 Peiran Yu and Ting Kei Pong. *Iteratively reweighted ℓ_1 algorithms with extrapolation.* Submitted Oct 2017.

2 Tianxiang Liu, Ting Kei Pong and Akiko Takeda. *A successive difference-of-convex approximation method for a class of nonconvex nonsmooth optimization problems.* Submitted Oct 2017.

3 Lei Yang, Ting Kei Pong and Xiaojun Chen. *A non-monotone alternating updating method for a class of matrix factorization problems.* Submitted May 2017.

Publications

1 Bo Wen, Xiaojun Chen and Ting Kei Pong. *A proximal difference-of-convex algorithm with extrapolation.* To appear in Comput. Optim. & Appl.

2 Guoyin Li and Ting Kei Pong. *Calculus of the exponent of Kurdyka-Łojasiewicz inequality and its applications to linear convergence of first-order methods.* To appear in Found. Comput. Math.

3 Guoyin Li, Tianxiang Liu and Ting Kei Pong. *Peaceman-Rachford splitting for a class of nonconvex optimization problems.* Comput. Optim. & Appl. 68, 2017, pp. 407–436.

4 Xiaojun Chen, Ting Kei Pong and Roger Wets. *Two-stage stochastic variational inequalities: an ERM-solution procedure.* Math. Program. 165, 2017, pp. 71—111.

5 Tianxiang Liu and Ting Kei Pong. *Further properties of the forward-backward envelope with applications to difference-of-convex programming.* Comput. Optim. & Appl. 67, 2017, pp. 489–520.

6 Bo Wen, Xiaojun Chen and Ting Kei Pong. *Linear convergence of proximal gradient algorithm with extrapolation for a class of nonconvex nonsmooth minimization problems.* SIAM J. Optim. 27, 2017, pp. 124–145.

7 Lei Yang, Ting Kei Pong and Xiaojun Chen. *Alternating direction method of multipliers for a class of nonconvex and nonsmooth optimization problems with applications to background/foreground extraction.* SIAM J. Imaging Sci. 10, 2017, pp. 74–110.

8 Xiaojun Chen, Zhaosong Lu and Ting Kei Pong. *Penalty methods for a class of non-Lipschitz optimization problems.* SIAM. J. Optim. 26, 2016, pp. 1465–1492.

9 Guoyin Li and Ting Kei Pong. *Douglas-Rachford splitting for nonconvex optimization with application to nonconvex feasibility problems.* Math. Program. 159, 2016, pp. 371–401.

10 Ting Kei Pong, Hao Sun, Ningchuan Wang and Henry Wolkowicz. *Eigenvalue, quadratic programming, and semidefinite programming relaxations for a cut minimization problem.* Comput. Optim. & Appl. 63, 2016, pp. 333–364.

11 Guoyin Li and Ting Kei Pong. *Global convergence of splitting methods for nonconvex composite optimization.* SIAM. J. Optim. 25, 2015, pp. 2434–2460.

12 Michael P. Friedlander, Ives Macêdo and Ting Kei Pong. *Gauge optimization and duality.* SIAM. J. Optim. 24, 2014, pp. 1999–2022.

13 Ting Kei Pong and Henry Wolkowicz. *The generalized trust region subproblem.* Comput. Optim. & Appl 58, 2014, pp. 273–322.

14 Guoyin Li, Alfred Ka Chun Ma and Ting Kei Pong. *Robust least square semidefinite programming with applications.* Comput. Optim. & Appl. 58, 2014, pp. 347–379.

15 Zhaosong Lu and Ting Kei Pong. *Computing optimal experimental designs via interior point method.* SIAM. J. Matrix Anal. A. 34, 2013, pp. 1556–1580.

16 Maryam Fazel, Ting Kei Pong, Defeng Sun and Paul Tseng. *Hankel matrix rank minimization with applications in system identification and realization.* SIAM. J. Matrix Anal. A. 34, 2013, pp. 946–977.

17 Zhaosong Lu, Ting Kei Pong and Yong Zhang. *An alternating direction method for finding Dantzig selectors.* Comput. Stat. Data An. 56, 2012, pp. 4037–4946.

18 Ting Kei Pong. *Edge-based semidefinite programming relaxation of sensor network localization with lower bound constraints.* Comput. Optim. & Appl. 53, 2012, pp. 23–44.

19 João Gouveia and Ting Kei Pong. *Comparing SOS and SDP relaxations of sensor network localization.* Comput. Optim. & Appl. 52, 2012, pp. 609–627.

20 Zhaosong Lu and Ting Kei Pong. *Minimizing condition number via convex programming.* SIAM J. Matrix Anal. A. 32, 2011, pp. 1193–1211.

21 Ting Kei Pong and Paul Tseng. *(Robust) Edge-based semidefinite programming relaxation of sensor network localization.* Math. Program. 130, 2011, pp. 321–358.

22 Ting Kei Pong, Paul Tseng, Shuiwang Ji and Jieping Ye. *Trace norm regularization: reformulations, algorithms, and multi-task learning.* SIAM J. Optim. 20, 2010, pp. 3465–3489.

23 Chong Li, Kung Fu Ng and Ting Kei Pong. *Constraint qualifications for convex inequality systems with applications in constrained optimization.* SIAM J. Optim. 19, 2008, pp. 163–187.

24 Chong Li, Kung Fu Ng and Ting Kei Pong. *The SECQ, linear regularity, and the strong CHIP for an infinite system of closed convex sets in normed linear spaces.* SIAM J. Optim. 18, 2007, pp. 643–665.

Education Related Publications

1 Michael Friedlander, Nathan Krislock and Ting Kei Pong. *Social resistance*. Comput. Sci. Eng. 18(2), 2016, pp. 98–103.

Work Experience

2014–	Assistant Professor, the Hong Kong Polytechnic University.
2013–2014	PIMS postdoctoral fellow, University of British Columbia.
2011–2013	Postdoctoral fellow, University of Waterloo.
2010–2011	Visiting researcher, Simon Fraser University.
2006–2011	Teaching assistant & lecturer, University of Washington.
2004–2006	Teaching assistant, Chinese University of Hong Kong.

Awards

2015	The 2015–2016 Early Career Award, the Research Grants Council of Hong Kong.

Research Funding

01/2018–12/2020	Principal Investigator, GRF grant, "Convergence rate analysis of solution methods for a large class of optimization problems".
01/2017–12/2019	Principal Investigator, GRF grant, "New Approaches for Nonconvex Feasibility Problems".
01/2016–12/2018	Principal Investigator, ECS grant, "New Solution Methods for a Class of Structured Optimization Problems".

Hong Kong, October 20, 2017