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Basic Information

Year of birth	1985
Place of birth	Shandong, China

Education

Sept. 2007–July 2012	Ph.D., computational mathematics, Institute of Computational Mathematics and Scientific/Engineering Computing (ICMSEC), Chinese Academy of Sciences, China, supervised by Professor Ya-xiang Yuan, thesis: *On Derivative-free Optimization Methods*
May 2010–Aug. 2010	Visiting student, Institute for Computer Science, University of Bayreuth, Germany, visiting Professor Klaus Schittkowski, funded by Alexander von Humboldt Foundation
Sept. 2003–July 2007	B.Sc., computational mathematics, College of Mathematics, Jilin University, China

Positions

Apr. 2016–present	Assistant Professor (Research Assistant Professor up until Jan. 2018), Department of Applied Mathematics, Hong Kong Polytechnic University, Hong Kong, China
May 2014–Mar. 2016	Postdoc, CERFACS-IRIT join lab and IRIT-ENSEEIHT, Toulouse, France, in the group of Professor Serge Gratton, funded by Foundation STAE and IRT Saint Exupéry
Sept. 2012–Aug. 2014	Postdoc, Department of Mathematics, University of Coimbra, Portugal, in the group of Professor Luís Nunes Vicente

Research Interests

Theory and algorithms of mathematical optimization, especially randomized algorithms, derivative-free algorithms, noisy problems, and large-scale problems

Papers

[1] S. Gratton, C. W. Royer, L. N. Vicente, Z. Zhang, Direct search based on probabilistic feasible descent for bound and linearly constrained problems, *Comput. Optim. Appl.*, 72: 525–559, 2019

[2] X. Chen, C. T. Kelley, F. Xu, Z. Zhang, A smoothing direct search method for Monte Carlo-based bound constrained composite nonsmooth optimization, *SIAM J. Sci. Comput.*, 40(4): A2174–A2199, 2018

[3] S. Gratton, C. W. Royer, L. N. Vicente, Z. Zhang, Complexity and global rates of trust-region methods based on probabilistic models, *IMA J. Numer. Anal.*, 38(3): 1579–1597, 2018

[4] M. Dodangeh, L. N. Vicente, Z. Zhang, On the optimal order of worst case complexity of direct search, *Optim. Lett.*, 10(4): 699–708, 2016

[5] S. Gratton, C. W. Royer, L. N. Vicente, Z. Zhang, Direct search based on probabilistic descent, *SIAM J. Optim.*, 25(3): 1515–1541, 2015

[6] Z. Zhang, Sobolev seminorm of quadratic functions with applications to derivative-free optimization, *Math. Program.*, 146(1–2): 77–96, 2014

Software

[1] T. M. Ragonneau, Z. Zhang, PDFO (https://www.pdfo.net)

Works in Progress

[1] S. Gratton, L. N. Vicente, Z. Zhang, A space transformation framework for nonlinear optimization

[2] F. Delbos, S. Gratton, B. Pauwels, Z. Zhang, Direct search for noisy functions

[3] Z. Zhang, A derivative-free optimization algorithm with low-dimensional subspace techniques for large-scale problems

External Grants

Oct. 2020–Sept. 2023	Derivative-free Optimization with Space Decomposition, Coarse Space Correction, and Randomization, PI, awarded by the Hong Kong Research Grants Council under the General Research Fund
Jan. 2018–Dec. 2020	Nonlinear Optimization Based on Inaccurate Information, PI, awarded by the Hong Kong Research Grants Council under the Early Career Scheme
Jan. 2017–Dec. 2018	Space Decomposition Methods for Constrained Optimization with Engineering Applications, Hong Kong PI, jointly awarded by the Hong Kong Research Grants Council and the Consulate General of France in Hong Kong under the PROCORE - France/Hong Kong Joint Research Scheme

Teaching

2019	Best Teacher Award, Department of Applied Mathematics, Hong Kong Polytechnic University
2016–present	"Basic Mathematics II: Calculus and Linear Algebra" (Subject Leader since 2018), "Mathematics II", "Probability and Distributions for Risk Management", Hong Kong Polytechnic University
2015	"Concentration of Probability in Numerical Optimization", ENSEEIHT, France

Refereeing

2012–present	Mathematical Programming, SIAM Journal on Optimization, Mathematics of Operations Research, SIAM Journal on Numerical Analysis, ACM Transactions on Mathematical Software, Journal of Scientific Computing, *etc*.

Professional Services

2015–present	Maintainer (with N. I. M. Gould) of Professor M. J. D. Powell's optimization software: TOLMIN, COBYLA, UOBYQA, NEWUOA, BOBYQA, and LINCOA
2017, 2019	Member of the Organizing Committees of The 11th and 12th International Conference on Numerical Optimization and Numerical Linear Algebra (a biennial conference organized by Professor Ya-xiang Yuan)
2017	Co-chair (with X. Liu) of the invited workshop on "Big Data Analysis with Applications" at The Third International Conference on Engineering and Computational Mathematics (May 31–June 2, 2017, Hong Kong)
2016	Co-chair (with F. Rinaldi) of the cluster on "Derivative-free and Simulation-based Optimization" at The Fifth International Conference on Continuous Optimization (Aug. 6–11, 2016, Tokyo)
2013	Member of the Organizing Committee of The Fourth International Conference on Continuous Optimization (July 27–Aug. 1, 2013, Lisbon)

Computer Skills

Linux; Fortran, C, MATLAB

Language Skills

Native Chinese, fluent English, intermediate French (B1–B2), elementary German (A1–A2)