Yuen-Lam Voronin

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Career Summary

- Mathematician specialized in numerical optimization, with 9-year experience in applying quantitative and computational expertise in various areas (bioinformatics, computer science, electrical engineering, finance, quantum computing).
- Effective communicator with 5 years of experience in delivering conference presentations and teaching university courses.

Education

- Ph.D. in Continuous Optimization, University of Waterloo, Canada (2009-2013). Advisor: Prof. Henry Wolkowicz. Thesis topic: Preprocessing and Reduction for Semidefinite Programming via Facial Reduction: Theory and Practice.
- M.Math in Continuous Optimization, University of Waterloo, Canada (2008-2009). Advisor: Prof. Michael J. Best. Research topic: Portfolio Optimization via Downside-Risk Aversion Model.
- B.Sc. In Mathematics (minor in Economics), Chinese University of Hong Kong, Hong Kong (2003-2007).

Work Experience

- Quantitative Analyst at Tradewins Ltd. (2017-present)
- Research Associate at Dept. of Computer Science, University of Colorado, USA. (2014-2017)
- Lecturer at Dept. of Computer Science, University of Colorado, USA. (Spring 2016)
  Course: **Discrete Structures** (undergrad.)
- Postdoctoral Research Assistant at University of Waterloo, Canada. (2014)
- Sessional Lecturer at University of Waterloo, Canada. (Spring 2012)
  Course: **Continuous Optimization** (undergrad./grad.)
- Teaching Assistant at University of Waterloo, Canada. (2009-2012)
  Courses: **Portfolio Optimization** (grad., undergrad.), **Semidefinite Optimization** (grad.), **Linear Optimization** (undergrad.), **Mathematical Optimization** (undergrad.), **Nonlinear Optimization** (undergrad.)
- Program Manager at Chinese University of Hong Kong, Hong Kong. (2007-2008)

Research Publications

- D. Drusvyatskiy, N. Krislock, Y.-L. Voronin and H. Wolkowicz, Noisy sensor network localization: robust facial reduction and the Pareto frontier. SIAM Journal on Optimization, 27(4):2301–2331, 2017.
- P. Roux, Y.-L. Voronin, and S. Sankaranarayanan, Validating numerical semidefinite programming solvers for polynomial invariants. In Static Analysis Symposium (SAS), Volume 9837 of Lecture Notes in Computer Science pp. 424-446 (2016).
- A. Chakarov, Y.-L. Voronin, and S. Sankaranarayanan, Deductive proofs of almost sure persistence and recurrence properties. In Tools and Algorithms for Construction and Analysis of Systems (TACAS), Vol. 9636 of Lecture Notes in Computer Science pp. 260-279 (2016).
- Y.-L. Cheung, D. Drusvyatskiy, C.-K. Li, D.C. Pelejo, H. Wolkowicz, Projection methods for quantum channel construction. Quantum Information Processing, 14(8): 3075-3096, 2015.
- F. Burkowski, Y.-L. Cheung, H. Wolkowicz, Efficient use of semidefinite programming for selection of rotamers in protein conformations, INFORMS Journal on Computing 26(4): 748-766, 2014.
- Y.-L. Cheung, S. Schurr, H. Wolkowicz, Preprocessing and regularization of degenerate semidefinite programs. In Computational and Analytical Mathematics, Springer Proceedings in Mathematics & Statistics, Vol. 50. Springer, 2013.

Awards

- NSF Software & Hardware Foundation Award, Bilinear Constraint Solving and Optimization for Program Verification and Synthesis Problems, former co-principal investigator. Award number: 1527075.
- AIMMS/MOPTA Modeling Competition 2010: Honorable mention. Competition theme: Tax-aware Portfolio Optimization.
- Cotton Family Women in Mathematics Graduate Scholarship.

Activities

- Organizer of Continuous Optimization Seminar at University of Waterloo, Canada. (2009-2012)
- Representative of Faculty of Mathematics, University of Waterloo visiting Tata Consultancy Services, India. (2009)
- Assistant in editing the book Portfolio Optimization. (By Michael J. Best, Taylor and Francis, May 2010)

Skill Summary

- Adaptive in applying optimization techniques and computational mathematics on various areas.
- Experienced in collaborating with different groups on problem solving.
- Proficient in Python and Matlab; experienced with Linux-based development tools.

Visa status

- US permanent resident.