PATRICIA LYNN GILLETT-KAWAMOTO

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EDUCATION

2010 - Aug. 2016 **PhD, Engineering Mathematics**
Department of Mathematics and Industrial Engineering, Polytechnique Montreal
Supervisor: Miguel Anjos

2005 - 2010 **Bmath, Honours Computational Mathematics, Economics Option**
Faculty of Mathematics, University of Waterloo
2008 - 2009 Exchange, Dept. of Informatics, Kyoto University, Japan
2006 - 2009 Diploma, Japanese Language Studies, Renison College University, University of Waterloo

RESEARCH ASSISTANTSHIP

2010 - present **Nonlinear optimization project:** Developing strong SDP relaxations of QPCCs (quadratic problems with complementarity constraints) and leveraging them to develop better local and global solution methods for this class of problems.

Open source software project 'PyQPCC': Part mathematical optimization, part scientific computing, and part glue code and interfaces, this suite of tools enables a user to build a Python-based methodology for QPCCs and/or their SDP relaxations while having access to solvers and test problem generators which are native to Matlab, AMPL, and GAMS. The project's open source release is pending. The package also includes an interface to NEOS so users can test their problems on a wide range of solvers.

PUBLICATIONS:

- J. Kawamoto, P. L. Gillett, “Frequency-based Constraint Relaxation for Private Query Processing in Cloud Databases,” Proc. of the 27th Annual IEEE Canadian Conference on Electrical and Computer Engineering, pp.1275-1280, Toronto, May 2014.
- J. Kawamoto, P. L. Gillett, J. Sakuma, プライベート問合せにおける問合せ頻度を用いた制約緩和手法 (Frequency-based Constraint Relaxation for Private Query), IPSJ Transactions on Databases, Vol.6, No.3, pp.50-60, June 2013 (Japanese language).

PRESENTATIONS:

- P. L. Gillett, M. F. Anjos, J. Judice, *Combining semidefinite relaxations and NLP solvers for improved feasible solutions of QPLCCs*, INFORMS, Philadelphia, Nov 2015
- P. L. Gillett, M. F. Anjos, J. Judice, *Combining semidefinite relaxations and NLP solvers for improved feasible solutions of QPLCCs*, CORS-INFORMS, Montreal, June 2015
- P. L. Gillett, M. F. Anjos, *Finding better solutions to nonconvex quadratic equilibrium problems using semidefinite programming*, Optimization Days, Montreal, May 2014.
- P. L. Gillett, M. F. Anjos, *Semidefinite programming approaches for a class of complementarity problems*, Optimization Days, Montreal, May 2012.
- P. L. Gillett, M. F. Anjos, *Semidefinite programming approaches for a class of complementarity problems*, Meet a GERAD Researcher Seminar Series, Montreal, March 2012.

- P. L. Gillett, M. F. Anjos, *Semidefinite programming approaches for complementarity problems*, Optimization Days, Montreal, May 2011.

POSTER PRESENTATIONS:

- P. L. Gillett, M. F. Anjos, *A semidefinite programming approach for nonconvex quadratic optimization with complementarity constraints*, Women Optimize in the West, Calgary, Alberta, June 2013.
- P. L. Gillett, M. F. Anjos, *A semidefinite programming approach for nonconvex quadratic Optimization with complementarity constraints*, Polynomial Optimisation Workshop, Cambridge, UK, July 2013.

ACADEMIC WORKSHOPS:

May 9-12, 2012	GERAD Spring School on Cooperative Games in Operations Research, Montreal
June 12-13, 2013	Women Optimize in the West, Calgary
June 14-28, 2013	PIMS Summer School on Optimization, Calgary
July 15-19, 2013	Polynomial Optimisation Summer School and Workshop, Cambridge, UK
June 11-13, 2015	Paths, Pivots, and Practice: The Power of Optimization, Montreal

COMMUNITY INVOLVEMENT:

Mar 2016-present	Member and tutor, UCE (Japanese/French/English language exchange group)
Aug 2014-present	Member, PyLadies (Montreal chapter)
Dec 2014-Jan 2016	Member, Helios Makerspace
Sept 2015	Workshop mentor, Data Insights with Python for Beginners, Ladies Learning Code
July 2015	Workshop instructor, Introduction to Hydroponic Gardening, Helios Makerspace

GENERAL LANGUAGES:
Python, C/C++, Java, Scheme

SPECIALIST LANGUAGES:
GAMS, AMPL, Matlab/Octave, R, Hadoop, HTML/CSS, LaTeX

PROFESSIONAL TECHNOLOGIES:
Git

OTHER KNOWLEDGE AND SKILLS:
Mathematical Optimization, Operations Research, Industrial Engineering
Heuristics, Simulation, Graph and Network Theory, Game Theory
Machine Learning, Data Analysis, Data Visualization
Algorithm Design, Computational Linear Algebra
Git, Agile Development Practices