

Sangwoon Yun
CURRICULUM VITAE

Department of Mathematics
National University of Singapore
2 Science Drive 2
Singapore, 117543
Singapore

Phone: 65-9868-0976
matys@nus.edu.sg
<http://www.math.nus.edu.sg/~matys/index.html>

RESEARCH INTERESTS

Convex and nonsmooth optimization, variational analysis.

EDUCATION

- University of Washington, Seattle, Washington,
Ph.D. in Mathematics, August 2007.
- Yonsei University, Seoul, Korea,
Master of Science in Mathematics, August 1999.
- Yonsei University, Seoul, Korea,
Bachelor of Science in Mathematics, February 1995.

HONORS, AWARDS, FELLOWSHIPS

- Research Fellow, National University of Singapore, August 2007-July 2008.
- Brain-Korea 21 Graduate Scholarship, Yonsei University, March 2000-February 2001.
- Excellent Student Award, Department of Mathematics, Yonsei University, September 1995.
- Asan Foundation Fellowship, March 1992-February 1995.
- Yonsei Fellowship, Autumn 1991.

TEACHING EXPERIENCE

- Math Tutor, National University of Singapore, September 2007-Present.
Responsibilities include giving a detailed explanation of given problem set and answering students' question.
- Teaching Assistant, University of Washington, Autumn 2001-August 2007 (14 quarters).
Courses: Calculus with Analytic Geometry II and III (responsibilities include leading recitation, holding office hours, and grading quizzes and exams), Introduction to Modern Algebra, Linear Optimization, Nonlinear Optimization, Combinatorial Theory, Topics in Applied Analysis (responsibilities include holding office hours, grading homeworks).

- Instructor, Calculus with Analytic Geometry II, University of Washington, Summer 2004, Summer 2005, Summer 2006.
Responsibilities include choice of course structure, syllabus design, lecturing, problem set creation, coordinating with TA and the homework grader, web site creation and holding office hours.
- Math Tutor, Math Study Center at University of Washington, Autumn 2002-Spring 2005 (4 quarters).
Responsibilities include helping students to solve problems.
- Instructor, Advanced Calculus I, Kwangwoon University, March 2001-June 2001.
Responsibilities include choice of course structure, syllabus design, lecturing, problem set creation, and holding office hours.
- Teaching Assistant, Yonsei University, September 1997-June 1999, March 2000-December 2000.
Courses: Calculus and Analytic Geometry II, Advanced Calculus I and II, Modern Algebra I, II, and III (responsibilities include leading recitation, holding office hours, and grading exams).

RESEARCH EXPERIENCE

- Postdoc Research with Kim-Chuan Toh, Department of Mathematics, National University of Singapore, August 2007-Present.
- Ph.D. Research with Paul Tseng, Department of Mathematics, University of Washington, Nonsmooth Optimization, June 2004-August 2007.
- Research Assistantship (NSF grant), Autumn 2005, Spring 2006, Spring 2007, Summer 2007.
- Reading with R. Tyrrell Rockafellar, Department of Mathematics, University of Washington, Convex Analysis, Variational Analysis, January 2005-June 2005.
- Reading with Paul Tseng, Department of Mathematics, University of Washington, Primal-dual Interior Point Methods, September 2003-May 2004.
- Master Research with June bok Lee, Department of Mathematics, Yonsei University, Finite Fields, Cryptography, March 1998-August 1999.

PUBLICATIONS

- Toh, Kim-Chuan and Yun, Sangwoon, A coordinate gradient descent method for ℓ_1 -regularized minimization, in preparation.
- Tseng, Paul and Yun, Sangwoon, An incremental gradient method for nonsmooth optimization, in preparation.
- Tseng, Paul and Yun, Sangwoon, A coordinate gradient descent method for constrained nonsmooth optimization and bi-level optimization, preprint, July 2007.
(PDF file available at <http://www.math.nus.edu.sg/~matys/index.html>)
- Tseng, Paul and Yun, Sangwoon, A coordinate gradient descent method for linearly constrained smooth optimization and support vector machines training, March 2007, to appear in *Comput. Optim. Appl.*
(PDF file available at <http://www.math.nus.edu.sg/~matys/index.html>)

- Tseng, Paul and Yun, Sangwoon, A coordinate gradient descent method for nonsmooth separable minimization, June 2006 (revised Feb 2007), to appear in Math. Prog. B. (PDF file available at <http://www.math.nus.edu.sg/~matys/index.html>)

CONFERENCES ATTENDED

- INFORMS Annual Meeting, Seattle, USA, November 2007.
- The Second Mathematical Programming Society International Conference on Continuous Optimization, Hamilton, Canada, August 2007.
- The 19th International Symposium on Mathematical Programming, Rio de Janeiro, Brazil, July and August 2006.
- West Coast Optimization Meeting, Seattle, USA, April 2004, April 2005, May 2006, April 2007.
- CMS Winter 2005 Meeting, Victoria, Canada, December 2005.
- The eighth SIAM Conference on Optimization. Stockholm, Sweden, May 2005.

TALKS GIVEN

- “A Coordinate Gradient Descent Method for Linearly Constrained Smooth Optimization”, invited talk, INFORMS Annual Meeting, November 2007.
- “A Coordinate Gradient Descent Method for Linearly Constrained Nonsmooth Optimization and Support Vector Machines Training”, invited talk, The Second Mathematical Programming Society International Conference on Continuous Optimization, August 2007.
- “A Coordinate Gradient Descent Method for Linearly Constrained Optimization and Support Vector Machines Training”, UW optimization seminar, March 2007.
- “A Coordinate Gradient Descent Method for Nonsmooth Separable Minimization and Support Vector Machines”, UW optimization seminar, November 2006.
- “A Coordinate Gradient Descent Method for Nonsmooth Separable Minimization”, invited talk, The 19th International Symposium on Mathematical Programming, July 2006.
- “Inexact Coordinate Descent Method for Nonsmooth Separable Minimization”, invited talk, The eighth SIAM Conference on Optimization, May 2005.

(All slides for above talks available at <http://www.math.nus.edu.sg/~matys/index.html>)

SERVICE AND MEMBERSHIPS

- Member of the Society for Industrial and Applied Mathematics since 2005.
- Member of the American Mathematical Society since 2001.
- Assistant Instructor for Yonsei Science Institute for talented youths, September 2000-June 2001. After-school program for sixth graders and middle school students (seventh and eighth graders). Preparing questions and lecturing.

- Assistant Instructor for Yonsei Math club for talented undergraduates, March 1999-December 1999. Helping members prepare the Math-Olympiad.
- Graduate Student Association, Department of Mathematics Representative, Yonsei University, March 1999-December 1999.

PERSONAL

- Nationality: Korea.
- Enjoying soccer, badminton and hiking in the mountains.

REFERENCES

- Paul Tseng, C-344 Padelford Hall, Department of Mathematics, University of Washington, Box 354350, Seattle, WA 98195-4350, tseng@math.washington.edu (thesis advisor).
- James V. Burke, C-443 Padelford Hall, Department of Mathematics, University of Washington, Box 354350, Seattle, WA 98195-4350, burke@math.washington.edu.
- Mehran Mesbahi, 315C Guggenheim, Department of Aeronautics & Astronautics, University of Washington, Box 352400, Seattle, WA 98195-2400, mesbahi@aa.washington.edu.
- Patrick T. Perkins, B-014 Communications, Department of Mathematics, University of Washington, Box 354350, Seattle, WA 98195-4350, perkins@math.washington.edu (teaching).