

# Gábor PATAKI

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## Education

- PhD in Algorithms, Combinatorics and Optimization, Carnegie Mellon University, awarded jointly by the School of Computer Science, the Graduate School of Industrial Administration, and the Department of Mathematics (1996).
- Master of Science in Mathematics and Computer Science, Eötvös Loránd University, Budapest (1990)

## Work experience

- Associate Professor, Department of Statistics and Operations Research, University of North Carolina at Chapel Hill, 2006 July-present.
- Assistant Professor, Department of Statistics and Operations Research, University of North Carolina at Chapel Hill, 2000 July-2006 July.
- Assistant Professor, Department of IE/OR, Columbia University 1999 July-2000 July.
- Visiting Assistant Professor, Department of IE/OR, Columbia University 1999 Jan - 1999 July.
- Postdoctoral Research Scientist and Instructor, Department of IE/OR, Columbia University 1996 Sept - 1999 Jan.

## Research

- Integer Programming: theoretical and computational aspects.
- Convex Programming, Semidefinite Programming, and Convex Analysis.

## Selected publications

1. Computational Semidefinite Programming and Related Optimization Problems: The State of the Art, G. Pataki, Guest Editor, *Mathematical Programming B*, Vol 95, No. 2, 2003.
2. The Geometry of Semidefinite Programming, G. Pataki, in *Handbook of Semidefinite Programming*, H. Wolkowicz, L. Vandenberghe and R. Saigal, ed. , Kluwer, 2000.

3. On the closedness of the linear image of a closed convex cone, G. Pataki, *Math. of Oper. Res.*, Vol 32 (2), 395-412.
4. Teaching integer programming formulations using the Traveling Salesman Problem, G. Pataki, *SIAM Review* 45-1, March 2003
5. On the Rank of Extreme Matrices in Semidefinite Programs and the Multiplicity of Optimal Eigenvalues, G. Pataki, *Math. of Oper. Res.*, 23(2), 339-358, 1998
6. Column Basis reduction, and Decomposable Knapsack Problems, B. Krishnamoorthy and G. Pataki, submitted
7. Parallel Approximation and Integer Programming Reformulation, G. Pataki and Mustafa Tural, submitted
8. Solving the *seymour* Problem, M. Ferris, G. Pataki and S. Schmieta, *Optima* 66, October 2001, *Mathematical Programming Society Newsletter*, pp. 2-7

#### Ph.D. students

- Bala Krishnamoorthy: PhD 2004, Preconditioning Integer Programs by Column Basis Reduction, Assistant Professor, Department of Mathematics, Washington State University;
- Mustafa Tural: PhD 2009 (expected), Fully Analyzing Column Basis Reduction.
- Burcu Aydin: PhD 2009 (expected), Optimization Methods for Principal Component Analysis in Non-euclidean Spaces.

#### Professional Activities

- Conference panel member of MIP 2008, 2008 workshop on Mixed Integer Programming, Columbia University, 2008, aug 4-7.
- Organizer of the Triangle Discrete Math and Optimization Day (with C. Haase and S. Pekec). See at:

<http://www.or.unc.edu/~pataki/optday/index.html>

- Organizer of the 7th DIMACS Challenge: Semidefinite Programming and Related Optimization Problems (with David Johnson). See at:

<http://dimacs.rutgers.edu/Challenges/Seventh/>

<http://dimacs.rutgers.edu/Challenges/Seventh/Instances/>