IANNIS TOURLAKIS

Department of Computer Science
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Curriculum Vitae, April 2008

Born in March 1976 in Canada. Canadian citizen

RESEARCH INTERESTS

Theory of Computation; Approximation Algorithms for NP-hard optimization problems; Convex Optimization (linear and semidefinite programming); Derandomization; Time-space tradeoffs for NP-hard problems; Complexity of popular SAT solvers.

EDUCATION

Ph.D., Computer Science, Princeton University, 2006. Thesis: *New lower bounds for Approximation Algorithms in the Lovász-Schrijver Hierarchy.* Advisor: Sanjeev Arora

M.A., Computer Science, Princeton University, 2002

M.Sc., Computer Science, University of Toronto, 2000. Thesis: *Some results in non-uniform complexity theory.* Advisor: Stephen A. Cook

B.Sc., Computer Science and Mathematics, University of Toronto, 1998

RESEARCH, TEACHING AND WORK EXPERIENCE

- September 2006–Present: Post-doctoral Fellow, Department of Computer Science, University of Toronto

- September 2001–May 2006: Graduate Research Assistant, Princeton University

- September 2000–June 2001: Teaching Assistant, Princeton University.
  Courses: Introductory Computers for Humanities students, and Sophomore Algorithms and Data Structures

- May–August 2000: Research Assistant, York University, Toronto, Ontario.
  Advisor: Professor John Tsotsos, Vision, Graphics and Robotics Lab. Studied phase transition phenomena in edge detection problems for computer vision systems

- May–July 1997, May–July 1998: Research Assistant, University of Toronto.
  Advisor: Professor John Mylopoulos, Department of Computer Science. Developed "Telos Repository", a system implementing *Telos*, a conceptual modeling language representing knowledge about information systems.

- September 1996–June 1998: Teaching Assistant, University of Toronto.
  Courses: Introductory Calculus for Life-Sciences and Introductory Computer Science/Data Structures for Engineering Science

- May–July 1996: Research Assistant, University of Toronto.
  Advisor: Professor John Mylopoulos, Department of Computer Science. Work part of a Canadian Consortium for Software Engineering Research (CSER) project involving the Centre for Advanced Studies (IBM Canada).

AWARDS

- NSERC PGS B Scholarship 2000 (~$19,000/year for two years; declined)

- NSERC PGS A Scholarship 1998 (~$18,000/year for two years)

- Gordon Beatty Canada Life Scholarship (Department of Mathematics, U of Toronto) 1997

- Canada Scholarship 1994–1998 (Undergraduate scholarship $2,500/year for four years)

INVITED TALKS

- SIAM Conference on Discrete Mathematics, June 2008

- York University, Department of Computer Science and Engineering, January 25, 2008

- Princeton University, Computer Science Department Theory Seminar, March 1, 2007

- Institute for Advanced Studies, Princeton, Computer Science/Discrete Mathematics Seminar, April 18, 2005

- University of Toronto, Computer Science Department Theory Seminar, November 5, 2004

PUBLICATIONS

Papers available at `www.cs.toronto.edu/~iannis`

Journal papers:

- S. Arora, B. Bollobás, L. Lovász, I. Tourlakis. *Proving integrality gaps without knowing the linear program.* Theory of Computing, Vol. 2, p19–51, 2006.

- I. Tourlakis, *Time-space tradeoffs for SAT on non-uniform machines.* Journal of Computer and System Sciences, Special issue on CCC2000, Vol. 63, p268–287, 2001.

Refereed conference papers:

- K. Georgiou, A. Magen, I. Tourlakis. *Vertex cover resists SDPs tightened by local hypermetric constraints.* Conference on Integer Programming and Combinatorial Optimization (IPCO), 2008.

- K. Georgiou, A. Magen, T. Pitassi, I. Tourlakis. *Integrality gaps of 2-o(1) for vertex cover SDPs in the Lovász-Schrijver hierarchy.* Symposium on the Foundations of Computer Science (FOCS), 2007.

- I. Tourlakis. *New lower bounds for Vertex Cover in the Lovász-Schrijver hierarchy.* IEEE Conference on Computational Complexity (CCC), 2006.

- I. Tourlakis. *Towards optimal integrality gaps for hypergraph vertex cover in the Lovász-Schrijver hierarchy.* International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX), 2005.

- M. Alekhnovich, S. Arora, I. Tourlakis. *Towards strong nonapproximability results in the Lovász-Schrijver hierarchy.* ACM Symposium on the Theory of Computing (STOC), 2005.

- I. Tourlakis, *Time-space lower bounds for SAT on uniform and non-uniform machines.* IEEE Conference on Computational Complexity (CCC), 2000.