

Curriculum Vitae

Jacques Verstraete

Personal Details

- Affiliation Department of Mathematics and Statistics, McGill University, Montreal Canada.
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- Webpage <http://www.math.uwaterloo.ca/~jverstra>
- Qualifications B.Sc., B.Sc. (Honours) (University of Natal)
M.Sc. (University of Natal)
Cert. Advanced Study in Math (Cambridge University)
Ph.D. (Cambridge University)
Postdoc Fellowship (Theory Group, Microsoft Research)
Assistant Professor (University of Waterloo).
Assistant Professor (McGill University).

Academic Awards

- Canadian Foundation for Innovation : New Opportunities Grant (2006-2008)
- Prize for solution to Erdős problem. (2006)
- National Science and Engineering Research Council of Canada : Individual Research Discovery Grant. (2004-2009)
- Group 1 Prize in Smith-Knight essay competition at Cambridge. (2001)
- Nelson Mandela Scholarship from the Cambridge Commonwealth trust and Corpus Christi College for PhD study. (2000)
- Distinction for Part III essay (supervisor Professor W.T. Gowers) (1999). entitled: density of integer sets without given configurations.
- College scholar prize for mathematics, Corpus Christi College (1999).
- Certificate of Advanced Study in Math (Cambridge), graduated with distinction. (1999)
- Master's Thesis : Supervisors: Professor P. Dankelmann and Professor H. Swart. South African Mathematics Society Medal. (1998)
- Mathematics Prizes for Highest Grades in Mathematics. (1994-1996)
- Hanno Rund Scholarship for study at the University of Natal (1993)
- School Mathematics Prize for Highest Grades in Mathematics (1992).

Research Interests

- Extremal combinatorics and graph theory.
- Information theory, coding theory
- Combinatorial number theory
- Probabilistic methods in combinatorics
- Random graph models
- Computational complexity and approximation algorithms.

Teaching

- McGill University: Introduction to Discrete Mathematics II (Winter 2006)
- Topics Graduate Course in Probabilistic Methods (Winter 2006)
- McGill University: Introduction to Discrete Mathematics (Computer Science Students) (Fall 2006)
- University of Waterloo: Introduction to Graph Theory, Graduate Course - Probabilistic Methods (2006).
- University of Waterloo: Calculus for Math Honours, Linear Algebra, Introduction to Graph Theory, Introduction to Combinatorics (2004-2005).
- University of Waterloo: Graduate Course - Probabilistic Methods, Introduction to Combinatorics (2003).
- University of Washington: Graduate Course - Probabilistic and Extremal Combinatorics, Advanced Multivariate Calculus (2002).

Graduate Students

- Ararat Harutyunyan McGill University (Masters in Progress).
- David Pritchard University of Waterloo (PhD in Progress).
- Hamed Shirazi University of Waterloo (PhD in Progress).
- Michael Cavers Graduated 2006. Master's Thesis completed : Clique partitions and clique covers of graphs.
- Hamed Shirazi Graduated 2006. Thesis completed : Regular subgraphs of graphs.
- Ben Seamone Graduated 2005. Master's Thesis completed : Hamiltonian cycles in regular graphs, jointly supervised with Professor P. Haxell)
- Andrew Hoefel Project 2004 : Invariant Linear Equations. Undergraduate Research Assistant (University of Waterloo).

Authored course notes

- Additive and combinatorial number theory, University of Cambridge, Course given by Tim Gowers (Chapter 3 written by Tim Gowers)
- Descriptive set theory and Borel complexity, University of Cambridge, based on the course by Tim Gowers.
- Notes on commutative algebra and functional analysis, University of Cambridge.
- The probabilistic method, based on my course given at University of Washington and University of Waterloo.
- Introduction to Graph Theory. (University of Waterloo)

Research Lectures

- Lectures at Oberwolfach Combinatorics Meeting (2002, 2004, 2006).
- SIAM Discrete Mathematics 2006 Meeting, Victoria, BC (2006) [Turán problems for cycles in hypergraphs].
- California Institute of Technology, Discrete Mathematics Seminar 2006.
- Fields Institute. Ontario Combinatorics Workshop (2006).
- Princeton Discrete Math seminar (2005) [Product Representations of Polynomials].
- IEEE ISIT in Adelaide, Australia (2005) [Improved bounds on the size of sparse parity check matrices].
- IPCO XI TU in Berlin (2005) [Approximation algorithms and hardness results for cycle packing].
- CMS Meeting, Waterloo (2005) [Regular subgraphs of random graphs].
- Carnegie Mellon (2005) [Product representations of polynomials].
- University of Natal Discrete Mathematics Seminar. [Cycles in planar graphs] (2005).
- Fields Institute (2004) [Martingale inequalities with combinatorial applications].
- Number Theory Seminar, Waterloo (2005) [Invariant linear equations].
- Tutte Seminar and Algebraic combinatorics seminar, Waterloo (2005) [Counting Homomorphisms]. Tutte Seminar Lectures (2003 and 2004).
- AMS Sectional Meeting in extremal combinatorics at Bard College, New York (2005) and Bloomington Indiana (2004).
- SIAM Discrete Mathematics Meetings (Minneapolis 2000, San Diego 2002)
- ICGT 2000 Luminy, France [Unavoidable cycle lengths].
- Finite and Infinite Combinatorics, Budapest, Hungary (2001) [Vertex-Disjoint cycles].