Mia Minnes

Current Address
Cornell University
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Personal Data
Date of Birth: March 12, 1982
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Education

PhD Cornell University, Mathematics 2003 – 2008
Advisor: Anil Nerode
MS Cornell University, Mathematics 2003 – 2006
MS Cornell University, Computer Science 2003 – 2006
BSc Queen's University, Math & Engineering (Computing and Communication) 1999 – 2003
BA Queen's University, Philosophy 1999 – 2003

Research Interests

Finite automata, Büchi automata, finite state transducers, automatic structures, automatic model theory, combinatorics on words, parameterized complexity.

Publications

Three Lectures on Automatic Structures (with B. Khoussainov),
invited for Proceedings of Logic Colloquium (LC '07).
Model Theoretic Complexity of Automatic Structures (with B. Khoussainov),
Extended abstract in Proceedings of TAMC '08; full version in APAL.
Unary Automatic Graphs: An Algorithmic Perspective (with B. Khoussainov, J. Liu),
Extended abstract in Proceedings of TAMC '08; full version in MSCS.
The Isomorphism Problem in Classes of Unary Automatic Structures (with J. Liu),
in preparation.

Awards Received and Offered

NSERC PDF: Canadian government post-doctoral fellowship, offered and declined.
Graduate student teaching award: for lucid and engaging teaching and mentoring, 2007.
Battig Prize: Cornell department award for excellence and promise in mathematics research, 2006.
NSERC PGS: Canadian graduate research award for research at a university of my choice, 2003-2008.
NSERC CGS: Canadian graduate research award for research in Canada, offered and declined.
OGS: Ontario government graduate studies scholarship, offered and declined.
Cornell Fellowship: Entry fellowship for graduate studies, 2003-2004.
Chancellor's Scholarship: Queen's Alumni National Scholarship, 1999-2003.
Nellie and Ralph Jeffrey Award: Queen's department award for undergraduate mathematics, 2000-2002.

Selected Seminars and Talks (Add Dartmouth, UCSD, CCR, MIT)

Algorithmic-Logical Theory of Infinite Structures: *Heights of automatic well-founded relations*
(October 2007, Dagstuhl Germany)
Connecticut Logic Seminar: *Model theoretic properties of automatic structures*
(September 2007, Middleton CT)
CiE 2007: *Solution to a Problem of Vardi on Ordinal Heights of Well-founded Automatic Relations*
(June 2007, Siena Italy)
Math Department Seminar: *Automatic Structures of High Ranks*
(Mar 2007, Wellington NZ)
Discrete Math and Theoretical CS Seminar: *Automatic Structures of High Ranks*
(Mar 2007, Auckland NZ)
Cornell Logic Seminar: *Automatic Sequences: Characterizations via logic, combinatorics, and algebra*
(Nov 2006, Ithaca NY)
Graduate Student Conference in Logic: *Are automatic structures as complicated as computable structures?*
(May 2006, Madison WI)
Cornell Logic Seminar: *Automata theoretic decision methods for first-order theories*
(April 2005, Ithaca NY)

Conferences

Celebration of MIT Women in Mathematics (April 2008, Cambridge MA)
Computable Model Theory workshop (February 2007, Gainesville FL)
Northeast Non-Linear and Hybrid Systems Control Workshop (April 2005, Troy NY)
Association for Symbolic Logic Annual Meeting (March 2005, Stanford)
Analysis of Algorithms Graduate Student Workshop (June 2004, MSRI)

Teaching

Instructor

Calculus I (Cornell Fa'07)
Includes limits, continuity, derivatives, integrals and applications in biology, economics and physics.

Czar's Assistant

Calculus I (Cornell Fa'06)
Calculus II (Cornell Fa'06, Cornell Sp'06)
Duties include hiring, training, and supervising undergraduate Course Assistants who run homework sessions and grade assignments; as well as facilitating course communication among up to twenty instructors.

Teaching Assistant and Grader

Mathematical Logic (Cornell Sp'05)
Senior level course including propositional and predicate logic, and an introduction to set theory.
Multivariable Caclulus (Cornell Fa'05)
Sophomore level course intended for math majors and which culminates with Stokes' theorem.
Engineering Calculus II (Cornell Fa'04, Queen's Sp'02, Queen's Sp'03)
Topics include techniques of integration, areas and volumes by integration, and infinite sequences and series.
Engineering Calculus I (Queen's Fa'01, Queen's Fa'02)
Topics include limits, continuity, derivatives, optimization, and anti-derivatives.
Engineering Linear Algebra (Queen's Sp'02, Queen's Sp'03)
Introductory course including linear transformations, matrix operations, vector spaces, and diagonalization.

Professional Development

Teaching Seminar: Co-founded and organized a seminar where graduate students present and discuss teaching strategies (2004-2006, with K. Camenga; 2006-2008 with E. Carta, D. Terry).
TA Training: Co-organized the professional development workshop for incoming mathematics teaching assistants (2006-2007)
Good Questions database: Developed an interactive database for Cornell math TAs to search, comment, and upload classroom activities and homeworks or quizzes (2006)
Mentoring: Led a mentoring program for first-time TAs in the math department at Cornell (2005, with K. Camenga and M. Pivarski).

Service and Outreach Activities

- *4-H Career Explorations Conference* (2007), Cornell Math Dept
- *Freshman Registration Assistant* (2004-2006), Cornell Math Dept
- *Organizer of the Graduate Prospective Weekend* (2003-2006), Cornell Math Dept
- *Expanding Your Horizons Conference* (2004), Cornell University
- *Member of Curriculum Committee* (2000-2003), Queen's Math and Engineering Dept

References

Anil Nerode (*Advisor*), Cornell University Math Department
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Richard Shore, Cornell University Math Department
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Dexter Kozen, Cornell University Computer Science Department
kozen@cs.cornell.edu
Bakhadyr Khoussainov, Auckland University Computer Science Department
bmk@cs.auckland.ac.nz
Maria Terrell (*Teaching reference*), Cornell University Math Department
maria@math.cornell.edu