Jeff Kinne

CONTACT INFORMATION

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CURRENT POSITION

Assistant Professor of Mathematics and Computer Science, Indiana State University, 2010–

EDUCATION

Ph.D in Computer Science, University of Wisconsin-Madison, 2010
- Dissertation: "Deterministic Simulations and Hierarchy Theorems for Randomized Algorithms"
- Advisor: Professor Dieter van Melkebeek, Minor: mathematics

M.S. in Computer Science, University of Wisconsin-Madison, 2005
- Cumulative GPA of 3.94 on 4.0 scale

B.S. and B.A., Xavier University, 2002
- Majors in computer science, mathematics, and Spanish
- Summa cum laude, dean's list all semesters, University Scholars program
- Cumulative GPA of 3.93 on 4.0 scale

TEACHING EXPERIENCE

CS 799, Complexity Theory, UW-Madison, Fall 2007
- Co-instructed special section of this graduate course with S. Diehl and Professor D. van Melkebeek, supervised by D. van Melkebeek

CS 240, Intro. to Discrete Mathematics, UW-Madison, Summer 2007
- Sole instructor responsible for all aspects of this sophomore-level course
- Revised curriculum developed in consultation with faculty
- Final course evaluations: highest ever "recommend instructor" and "recommend course" ratings for this course

CS 810, Complexity Theory, UW-Madison, Spring 2007
- Teaching assistant for Professor D. van Melkebeek in this graduate course
- Responsibilities: office hours, grading, model homework solutions, managing/editing lecture notes that are now used as a text for the course

CS 310, Problem Solving using Computers, UW-Madison, Fall 2003 – Spring 2005
- Teaching assistant for Professor J. Strikwerda and Rebecca Hasti in this junior-level course for engineers focusing on programming and problem solving using Maple and Matlab through guided laboratory explorations and online lectures
- Responsibilities: office hours, grading, online course administration, leading review sessions and lab sections
- First TA of this course to take on responsibilities of giving lectures on programming concepts and leading lab sections

RESEARCH INTERESTS

Computational complexity and algorithms. Specifically:
- Deterministic simulations of various classes of randomized algorithms – constructions, implications, and complexity theoretic aspects
- Hierarchy theorems for the time and memory space used by randomized algorithms and other semantic models of computation
- Average-case complexity and amplification of hardness within NP

Journal Publications

Jeff Kinne, Dieter van Melkebeek, and Ronen Shaltiel. Pseudorandom Generators, Typically-Correct Derandomization, and Circuit Lower Bounds. Accepted to the special issue of *Computational Complexity* for selected papers from the *13th International Workshop on Randomization and Computation* (RANDOM) 2009, 33 pages.

Jeff Kinne and Dieter van Melkebeek. Space Hierarchy Results for Randomized and Other Semantic Models. *Computational Complexity*, 2010, 53 pages. In press.

Conference Publications

Jeff Kinne, Dieter van Melkebeek, and Ronen Shaltiel. Pseudorandom Generators and Typically-Correct Derandomization. In *Proceedings of the 13th International Workshop on Randomization and Computation* (RANDOM), LNCS 5687, 2009, pages 574–587.

Jeff Kinne and Dieter van Melkebeek. Space Hierarchy Results For Randomized Models. In *Proceedings of the 25th Annual Symposium on Theoretical Aspects of Computer Science* (STACS), 2008, pages 433–444.

Jeff Kinne. Exact and Approximation Algorithms for the 3-Dimensional Matching Problem. In *Proceedings of the National Conferences on Undergraduate Research*, 2002, 8 pages.

Working Papers

Jeff Kinne and Dieter van Melkebeek. On Average-Case Hardness, Pseudorandomness, and Derandomization for Monotone Circuits. 2010, 15 pages.

Research Presentations

Pseudorandom Generators, Typically-Correct Derandomization, and Circuit Lower Bounds

- The 13th International Workshop on Randomization and Computation (RANDOM), Berkeley, California, 2009.
- Midwest Theory Day, DePaul University, 2009

Space Hierarchy Results for Randomized Models

- The 25th Symposium on Theoretical Aspects of Computer Science (STACS), Bordeaux, France, 2008
- Midwest Theory Day, University of Notre Dame, 2007

Theory Reading Group

- Multiple presentations per year, UW-Madison Theory of Computing group, 2004–2009

Exact and Approximation Algorithms for the 3-Dimensional Matching Problem

- National Conferences on Undergraduate Research, UW-Whitewater, 2002

Teaching Improvement

ACM Technical Symposium on Computer Science Education (SIGCSE), attended 2010

University of Wisconsin-Madison

- Delta Program: monthly discussions and presentations regarding teaching practices and pedagogy, 2009–2010
- Two-day workshop on Scientific Teaching, 2009
- Tenth Annual Teaching and Learning Symposium: two-day workshop exploring new teaching pedagogy and related topics, 2008

Service

University of Wisconsin-Madison

- "Hot Topics in CS/Theory": presentation for those on job market, Dept. of Computer Sciences, 2009
- Review committee, Vilas Travel Grant, 2008

- Theory group website administrator, Dept. of Computer Sciences, 2007–2009
- Theory reading group organizer, Dept. of Computer Sciences, 2005–2009

James Madison Memorial High School
- "Computer Science: Theory and Practice": multiple guest lectures to Computer Science classes, 2007–2009

Madison East High School
- "Cryptography: Secrets Concealed": guest lecture for Math Week, 2007

Referee: SIAM Journal on Computing, Computational Complexity, Annals of Pure and Applied Logic, Descriptional Complexity of Formal Systems, IEEE Conference on Computational Complexity

Industry Experience

Constellation Data Systems, Inc., Cincinnati, Ohio USA

Software engineer, 1999–2005

- Develop device drivers and applications for custom hardware
- Worked on projects for many clients, including General Electric, Boeing, LifeSafer Interlock, and QRS Diagnostic
- Technologies used: Microsoft Visual C++, Microsoft Macro-assembler, InstallShield, INF, ASP, Microsoft Visual Basic, logic analyzer

Awards

University of Wisconsin-Madison
- Cisco Systems Distinguished Graduate Fellowship, 2008–2009
- Vilas Travel Grant, 2007

National Science Foundation
- Graduate Research Fellowship honorable mention, 2002

Mathematical Contest in Modeling
- Meritorious honor, 2002

Xavier University
- Richard J. Wehrmeyr Pi Mu Epsilon Award, John F. Niehaus Computer Science Award, Kramer-Miller Mathematics Award, honorary inductee to American Mathematical Society, 2002
- Thomas P. Savage Scholarship competition winner, honorary inductee to Pi Mu Epsilon Math Honor Society, 2001
- Honorary inductee to Rho Pi Epsilon Spanish Honor Society, 2000

Personal Interests

photography, backyard astronomy, cycling, running (2009 Columbus marathon), volleyball, science fiction, science and other projects with (my three) kids, backyard (organic) vegetable gardening, foreign languages and culture

References

Available upon request