

## Curriculum Vita

### ESFANDIAR HAGHVERDI

Luddy School of Informatics, Computing, and Engineering  
Indiana University  
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### EDUCATION and APPOINTMENTS

November 2019 – Present	Director of Cybersecurity and Global Policy BS Degree Program.
September 2016 – Present	Director of The Global Talent Attraction Program.
July 2019 – Present	Executive Associate Dean for Undergraduate Education, School of Informatics, Computing, and Engineering, Indiana University.
May 2017 – June 2019	Executive Associate Dean for Academic Affairs, School of Informatics and Computing, Indiana University.
April 2017 – present	Professor, School of Informatics and Computing, Indiana University.
April 2017 – present	Adjunct Professor, Dept. of Mathematics, Indiana University.
January 2016 – May 2017	Associate Dean for Academic Programs, School of Informatics and Computing, Indiana University.
June 2013 – January 2016	Associate Dean for Undergraduate Studies, School of Informatics and Computing, Indiana University.
June 2012 – June 2013	Director of Undergraduate Studies for Computer Science, School of Informatics and Computing, Indiana University.
August 2008 – April 2017	Associate Professor, School of Informatics, Indiana
August 2008 – April 2017	Adjunct Associate Professor, Dept. of Mathematics, Indiana University.
August 2008 – June 2010	Director of Undergraduate Studies, School of Informatics, Indiana University.
2002 – 2008	Assistant Professor, School of Informatics and Computing, Indiana University.
2005 – 2008	Adjunct Assistant Professor, Dept. of Mathematics, Indiana University.
January 2008-July 2008	Long-term visitor, Institute for Mathematics and its Applications.
May 2007-July 2007	Invited Researcher at CNRS in Marseille, Luminy Math. Institute.
2002 – 2005	Assistant Professor, Dept. of Mathematics, Indiana University.
June 22 – July 29, 2004	Guest, Department of Mathematics, Uppsala University, Sweden.
2000 – 2002	Postdoctoral Fellow/Lecturer, Dept. of Mathematics, Univ. of Penn.
Jan. 2000 - July 2000	Research Associate, Dept. of Mathematics, Univ. of Ottawa.
2000 Ph.D.	University of Ottawa (Mathematics) Thesis: <b>A Categorical Approach to Linear Logic, Geometry of Proofs and Full Completeness.</b> (Philip J. Scott, Supervisor)
1995–2000	Research Assistant, Dept. of Mathematics, Univ. of Ottawa

1994–1995	Research Associate, Telecommunications Software Engineering Research Group, Dept. of Computer Science, Univ. of Ottawa.	1992 M.Sc.
April 1994 – Oct. 1994	Research Associate and External Secretary, European Community COST 247 Project on Verification and Validation Techniques, Technical and Scientific Research Council of Turkey	
1991–1994	Research Associate, Yazilim II Project on Protocol Specification, Verification and Implementation, Technical and Scientific Research Council of Turkey.	1989 B.Sc.

## CERTIFICATES

Certificate of Achievement, Executive Leadership Institute, Indiana University, 2013-2014.

## ACADEMIC HONORS

National Center for Women and Information Technology (NCWIT) Extension Services Transformation Award, 2015.

Excellence in Promoting Women in Undergraduate Computing, 2015.

Indiana University Trustees Teaching Award, 2012.

Indiana University Trustees Teaching Award, 2007.

Good Teaching Award, Department of Mathematics, University of Pennsylvania, Spring 2001.

Doctoral Prize, Ottawa-Carleton Institute of Mathematics and Statistics, 2001.

University of Ottawa nominee for NSERC (Natural Sciences and Engineering Research Council of Canada) Doctoral Prize, 2001.

University of Ottawa, Governor General's Gold Medal, 2000.

(This medal is awarded by Her Excellency, The Governor General of Canada to the student who has obtained the highest standing in a program of studies leading to a degree at the graduate level).

## SCHOLARSHIPS, FELLOWSHIPS, and GRANTS (RESEARCH)

Cyber Virtual Institute at Indiana University (CVI-IU), Pending, Co-Principal Investigator, Project period: Jan 01, 2021 - Dec 31, 2023.

Undergraduate Cybersecurity Research Program at Indiana University, Co-Principal Investigator, Project period: Aug 17, 2020 - Aug 16, 2021. *Award:* USD 249,986.00.

Indiana University School of Informatics, Computing, and Engineering Living Learning Community, GREATER CINCINNATI FOUNDATION, *Award:* USD 9,453.00. Dates Funded: January 1, 2019 - July 31, 2019

Indiana University School of Informatics and Computing Living Learning Community, PROCTER AND GAMBLE COMPANY, *Award:* USD 9,453.00. Dates Funded: October 1, 2016 - December 31, 2017.

Faculty Research Support Program grant, 2009-2010. *Award:* USD 4,500.

IUB, Freshman Learning Program Fellowship, Summer 2009. *Award:* USD 2000.

NSERC Postdoctoral Fellowship, 2000 – 2002. *Award:* CAD 70,000.

Ontario Graduate Scholarship, 1998 – 1999. *Award:* CAD 12,000.

University of Ottawa Excellence Scholarship, 1998 – 1999. *Award:* CAD 2,500.

University of Ottawa Admission Scholarship, 1996 – 1997. *Award:* CAD 2,500.

University of Ottawa Admission Scholarship, 1995 – 1996. *Award:* CAD 2,500.

NATO Science Committee Grant (Marktoberdorf Summer School on Deductive Program Design), July 26 – Aug. 7, 1994. *Award:* CAD 3000.

## RESEARCH PUBLICATIONS

### Refereed Journals:

1. Haghverdi E., Bernstein Trace. *SpringerPlus*, 5(1), 2016. Pages 1-12.
2. Haghverdi E., Towards a Geometry of Recursion. *Theoretical Computer Science*, Volume 412, Issue 20, 2011. Pages 2015-2028.
3. Haghverdi, E. Scott, P.J., Towards a Typed Geometry of Interaction. *Math. Structures in Computer Science*, vol. 20, 2010, pp. 473-521 (49 pages). Cambridge University Press.
4. Haghverdi E. and Scott P.J., Proofs as Polynomials. *Electr. Notes Theor. Comput. Sci.* 218: 53-72, 2008. (Invited paper.)
5. Haghverdi E., Scott P., A Categorical Model for the Geometry of Interaction. *Theoretical Computer Science*, vol. 350, no 2-3, 2006, pp. 252-274. (Invited Paper).
6. Haghverdi E., Pappas G. and Tabuada P., Bisimulation relations for dynamical, control, and hybrid systems. *Theoretical Computer Science*, Fundamental Study, vol. 342, 2005, pp. 229-261.
7. Abramsky S., Haghverdi E., Scott P.J., Geometry of Interaction and Linear Combinatory Algebras. *Mathematical Structures in Computer Science*, vol. 12(5), 2002, pp. 625-665. Cambridge University Press.
8. Haghverdi E., Unique Decomposition Categories, Geometry of Interaction and Combinatory Logic. *Mathematical Structures in Computer Science*, vol 10(2), 2000, pp. 205-231.
9. Haghverdi E., Ural H., Submodule Construction from Concurrent System Specifications. *Information and Software Technology*, (41) 8, 1999, pp. 499-506, Elsevier Science B.V.

### Refereed Conference Proceedings:

10. Haghverdi E., Aspects of Category Theory. In Proceedings of the *Fourth Workshop on Information Theoretic Methods in Science and Engineering* (WITMSE-2011), edited by Jorma Rissanen, Petri Myllymki, Teemu Roos, Ioan Tabus, and Kenji Yamanishi. Report C-2011-45, Department of Computer Science, University of Helsinki, 2011. Pages 31-34.
11. Haghverdi E, and Scott, P.J., Geometry of Interaction and Dynamics of Proof Reduction: a tutorial. *New Structures for Physics*, B. Coecke (ed). Lecture Notes in Physics 813, Springer-Verlag, 2011, pp. 339-397. (Invited Paper).
12. Haghverdi, E., Typed GoI for Exponentials. M. Bugliesi et al. (Eds.): ICALP 2006, Part II, LNCS 4052, 2006, pp. 384-395. Springer-Verlag.
13. Haghverdi E., Scott P., , Towards A Typed Geometry of Interaction. L. Ong (Ed.): CSL 2005, LNCS 3634, 2005, pp. 216-231. Springer-Verlag.
14. Haghverdi E., Scott P., From Geometry of Interaction to Denotational Semantics. *Electronic Notes in Theoretical Computer Science* vol 122, 2004, pp. 67-87. Elsevier Science Publishers. Proceedings of CTCS 2004.
15. Haghverdi E., Scott P., A Categorical Model for the Geometry of Interaction. J. Diaz et al. (Eds.): ICALP 2004, LNCS 3142, 2004, pp. 708-720. Springer-Verlag. Proceedings of ICALP 2004.

16. Haghverdi E., Tabuada, P. and Pappas, G., Bisimulation Relations for Dynamical and Control Systems, in *Electronic Notes in Theoretical Computer Science*, vol 69, 2003. Proceedings of CTCS 02.
17. Haghverdi E., Tabuada, P. and Pappas, G., Unifying Bisimulation Relations for Discrete and Continuous Systems. In electronic proceedings of *Mathematical Theory of Networks and Systems*, MTNS'02, Notre Dame, Indiana, August 2002.
18. Haghverdi E., Partially Additive Categories and Fully Complete Models of Linear Logic, *Proceedings of Typed Lambda Calculi and Applications (TLCA'01)*, Springer Lecture Notes in Computer Science, vol. 2044, 2001, pp. 197-216.
19. Yenigün H., Haghverdi E., Bilgen S., İnan K., A Recursive Process Algebra for Queues, *Proc. Int. Conf. on Formal Description Techniques, FORTE'93*, Edited by R.Tenney, P. Amer and U. Uyar. Formal Description Techniques VI, North-Holland IFIP series, Amsterdam, 1994, pp. 285–300.
20. Haghverdi E., İnan K., Verification by Consecutive Projections, *Proc. Int. Conf. on Formal Description Techniques, FORTE'92*, Edited by M. Diaz and R. Groz. Formal Description Techniques V, North-Holland IFIP series, Amsterdam, 1993, pp. 465–478.
21. Haghverdi E., İnan K., A Verification Method Based on Hoare Semantics, *Proc. International Symposium on Computer and Information Sciences, ISCIS VII*, Edited by E. Gelenbe., 1992, pp. 439–446.
22. Varoğlu, L., Haghverdi E., Discrete Event Systems, A General Overview, *Electrical Engineering, 4th National Congress*, Izmir, Turkey, 1991.
23. Haghverdi E., Varoglu L., Image Enhancement: A 2-D State Space Approach, *Proc. International Conference of Control and Modelling, ICCM'90, IASTED*, Tehran University, Tehran, Iran, 1990, pp. 299–302.

#### Technical Reports:

24. Haghverdi E., Ural H., *Submodule Construction Using Derivatives*, Technical Report TR-95-13, University of Ottawa, Dept. of Computer Science, June 1995.
25. Haghverdi E., Ural H., *Heterogeneous Algebras and Decomposition of Automata*, Technical Report TR-95-06, University of Ottawa, Dept. of Computer Science, March 1995.

#### Work in Progress

- Haghverdi, E., *A Categorical Approach to Additive Combinatorics*.
- Haghverdi, E., *Szemerédi Regularity for Locally Finite Categories*.
- Haghverdi, E., *Combinatorics of Locally Finite Categories*.

#### BOOK REVIEWS

- *Discrete Mathematics for Computer Science Students*.  
David Liben-Nowell. Considered for publication by John Wiley & Sons, Inc. 2014.
- *Logic as a Tool, A concise guide to understanding and computing logical reasoning*.  
Valentin Goranko. Considered for publication by John Wiley & Sons, Inc. 2013.
- *A concise introduction to Logic and Discrete Mathematics*.  
Willem Conradie and Valentin Goranko. Considered for publication by John Wiley & Sons, Inc. 2012.

## **COURSES TAUGHT:**

### **Undergraduate Courses:**

CSCI-B 490 Active Cyber Defense, CSCI-C 290 Machine Learning for Everyone, INFO-T 100 Hackers, Coders, and Lawyers, INFO-T 100 Cybersecurity and Policy, INFO-T 100 The World of Computing, INFO-T 100 Luddy Scholars Seminar, Fall 2020.

Foundations of Financial Engineering (I400)/Mathematics of Finance (M451), Fall 2016.

Great Ideas in Computing (Freshman Level-Direct Admit Only), Summer 2018, Summer 2017, Spring 2016, Fall 2015.

Great Ideas in Computing (Groups Scholars Only), Summer 2018, Summer 2017.

Introduction to the Mathematics of Cybersecurity (Sophomore/Junior Level), Spring 2014, Spring 2013, Spring 2012.

Discrete Structures for Computer Science (Sophomore/Junior Level), Fall 2013, Spring 2012.

Honors Mathematical Foundations of Informatics (Sophomore/Junior Level), Spring 2012, Spring 2011, Spring 2010, Fall 2008.

Politics by Numbers (Junior/Senior Level), IUB School of Informatics, Spring 2010, Fall 2007.

Calculus I (Freshman/Sophomore), IUB Department of Mathematics, Spring 2005.

Mathematical Foundations of Informatics (Sophomore/Junior Level), IUB School of Informatics, Summer I 2013, Summer I 2012, Summer I 2011, Spring 2011, Summer I 2010, Spring 2010, Summer I 2009, Fall 2008, Spring 2007, Fall 2006, Summer 2006, Spring 2006, Fall 2004, Spring 2004, Fall 2003, Spring 2003, Fall 2002.

Linear Algebra and Applications (Junior/Senior Level), IUB Department of Mathematics, Spring 2003.

Calculus for the Social and Biological Sciences II (Freshman/Sophomore Level), UPenn Math., Fall 2001.

Advanced Calculus I, UPenn Department of Mathematics, Spring 2001.

Advanced Calculus II, UPenn Department of Mathematics, Fall 2000.

Calculus for the Social and Biological Sciences I (Freshman/Sophomore Level), UPenn Math., Fall 2000.

Calculus and Matrix Algebra (Sophomore/Junior Level), University of Ottawa, Math., Fall 1998.

### **Graduate Courses:**

Foundations of Financial Engineering (I590)/Markets and Asset Pricing (M551), Fall 2016.

Combinatorics, IUB School of Informatics and Computing, Spring 2013.

Information Theory and Inference, IUB School of Informatics and Computing, Fall 2011.

Mathematical Methods in Bioinformatics, IUB School of Informatics, Fall 2007.

Topics in Informatics: Model Theory, IUB School of Informatics, Spring 2007.

Topics in Informatics: Cohomology of Computing, IUB School of Informatics, Summer 2006.

Topics in Informatics: Algebraic Proof Theory, IUB School of Informatics, Spring 2006.

Mathematical Methods in Bioinformatics, IUB School of Informatics, Fall 2004.

Topics in Logic: Domains and Lambda Calculi, IUB Department of Mathematics, Fall 2003.

Topics in Logic: Game Theory and Multiagent Systems, UPenn Department of Mathematics, Spring 2002.

Topics in Logic: Linear Logic and Game Semantics, UPenn Department of Mathematics, Fall 2001.

### **Undergraduate Research**

Jiongran Wang, Mike Oussoren, 2020.

Peter Wu, Spring 2020.  
Christopher East, Eric Freeman, Venkata Sai Dhakshesh Kolli, Tyler Citrin, Spring 2018.  
Yuyao Ba, Hannah Isaacson, Joshua Isaacson, Ari Korin, Fall 2017.  
Kellen Miller, Senior Thesis, Fall 2016.  
Paul Logan, Fall 2015.  
Shirley Hu, Fall 2015.

### **Graduate Students**

Erik Wennstrom, PhD, graduated in 2012.  
Alex James, PhD, 2011-present. Left the program.  
Saurav Chakraborty, PhD, 2013-2016. Left the program with a master's degree.

### **Independent Readings Courses (Graduate Level)**

Deep Learning in Finance, Fall 2019.  
Bitcoin Futures, Spring 2019, Fall 2019.  
Bitcoin Futures, Fall 2018.  
Blockchain Technology, Fall 2017.  
Computational Finance, Summer 2015.  
Research Rotation, Fall 2008, Spring 2009, Fall 2011.  
Additive Combinatorics, Fall 2012.  
Probabilistic Inference, Fall 2012.  
Category Theory in Computer Science, Fall 2008.  
Complexity Theory, IUB Department of Mathematics, Fall 2004.  
Model Theory, IUB Department of Mathematics, Spring 2004.  
Interactive Proofs and PCP Theorem, IUB Department of Mathematics, Fall 2003.  
Logics for Mobility, IUB Department of Mathematics, Spring 2003.

### **Curriculum and Course Development:**

- 2001, Topics in Logic: Linear Logic and Game Semantics. First time offer, syllabus design.
- 2002, Topics in Logic: Game Theory and Multiagent Systems. First time offer, syllabus design.
- 2002–present, I201-Math. Foundations of Informatics. Syllabus design, webpage design and maintenance, online lecture notes. Textbook published by ClassPak Publishing, IU.
- 2003, M781 Topics in Logic: Domain Theory and lambda calculus. First time offer, syllabus design
- 2004, I590 Topics in Informatics: Math. Methods in Bioinformatics. First time offer, syllabus design.
- 2006, I690 Topics in Informatics: Algebraic Proof Theory. First time offer, syllabus design.
- 2006, I590 Topics in Informatics: Cohomology of Computing. First time offer, syllabus design.
- 2007, I690 Topics in Informatics: Model Theory. First time offer, syllabus design.
- 2007, I399 Topics in Informatics: Politics by Numbers. First time offer, syllabus design.
- 2011, B659 Topics in AI: Information Theory and Inference. First time offer, syllabus design.
- 2013, B609 Topics in Algorithms: Combinatorics. First time offer, syllabus design.
- Fall 2015, CSCI-C102 Great Ideas in Computing. First time offer, new syllabus and course design.

### **TEACHING and RESEARCH INTERESTS**

Category Theory, Combinatorics, Computational Finance, Mathematical Foundations of Data Science, Theoretical Computer Science, Linear Logic, Geometry of Interaction.

## PROFESSIONAL SERVICE

### School Service

Member, Dean's Advisory Council Planning Committee, Fall 2019.

Member, Naming Gift Planning Committee, Fall 2019.

Steering Committee Member, GT-IDEA Institute, January 2019–January 2020.

PhD committee member, Behnood Momenzadeh, Info, 2018.

PhD defense committee member, Thejaka Kanewala, CS, 2018.

Member, SICE and Media School Curriculum Design Committee, Fall 2017.

Member, Cybersecurity and US Foreign Policy Curriculum Design Committee, Fall 2017.

Judge, Cheng Wu Innovation Challenge, Spring 2017.

Executive Champion, NCWIT, January 2016-January 2018.

PhD defense committee member, Jose Lugo-Martinez, CS, 2016.

Chair, Engineering Curriculum Development Committee, January 2015-May 2015.

Designated International Administrator for SICE, Fall 2015-Summer 2019.

Judge, Accenture Case Competition, IU, February 2015.

Member, Associate Director for Development Search Committee, Fall 2014.

Member, Assistant Dean for Development Search Committee, Spring 2014.

Member, Lecturer for CS Division Search Committee, Spring 2014.

Member, Liberal Arts Pathways task force, Spring 2014.

PhD defense committee member, Kyle Riggs, Mathematics, 2014.

PhD proposal defense committee member, Jose Lugo-Martinez, Informatics, 2014.

PhD defense committee member, Anoop M. Mayampurath, Informatics, 2013.

Co-chair, Liberal Arts Pathways task force, Fall 2013.

Member, Assistant Dean for Development Search Committee, Fall 2013.

Member, Lecturer for CS Division Search Committee, Fall 2013.

Member of School of Informatics and Computing Collegium, June 2013-May 2015.

Chair of CS Colloquium Committee, November 2012-December 2013.

Coordinator of Theory Seminar, Fall 2011- Fall 2013.

Chair of Tenure Committee for Yuzhen Ye, 2012.

Chair of PhD defense committee, Erik Wennstrom, Informatics, 2012.

PhD defense committee member, PuLan Yu, Informatics, 2012.

PhD defense committee member, Alex Beuer, Computer Science, 2012.

Member, Informatics Undergraduate Program Committee, 2012.

Member, Informatics Lecturer Hiring Committee, 2012.

Organizer: Turing Symposium, May 8, 2012.

Member, Faculty Merit Committee, 2011.

Member, LH Renovation Task Group, 2011.

Member, Informatics Undergraduate Program Committee, Spring 2011.

Chair, Theory Hiring Subcommittee, Fall 2011, Spring 2012.

Director of Logic and Mathematical Foundations PhD program, 2005-present.

Director of Informatics Undergraduate Studies, August 2008- June 2010.

Member of Policy Committee, December 2009-January 2011.

Member of Hiring and Search Committee, October 2009-April 2010.

PhD defense committee member, Jiho Kim, Mathematics, May 2010.

PhD proposal defense committee member, Alex Beuer, CS, 2011.  
PhD proposal defense committee member, PuLan Yu, Informatics, 2011.  
Chair, 3rd Year Review Committee for Steven Myers, Fall 2007.  
PhD thesis advisor, Erik Wennstrom, Informatics, Fall 2007-Fall 2012.  
PhD thesis advisor, Alex James, Informatics, Fall 2011-Fall 2015 (left the program).  
PhD defense committee member, Joshua Sack, Mathematics, June 2007.  
Graduate Program Committee member, Fall 2007- 2008.  
Member of Strategic Planning, faculty development subcommittee, Fall 2007.  
Lead Teacher for I201(IUB, Informatics), 2002-Fall 2006.  
Undergraduate Curriculum Committee (IUB, Informatics), 2002 – Fall 2007.  
Hiring Committee, (IUB, Informatics), 2003-2004.  
PhD Dissertation Committee (IUB, Math.): 5 students.  
Tier III Exam Committee (IUB Math.): 3 students.  
Registration Advising & Preliminary Exams Committees, (UPenn, Math.), 2001-02.  
Registration Advising Committee, (UPenn, Math.), 2000-01.  
Minicourse on webpage design for the faculty, (U. of Ottawa, Math), 1999.

### **University Service**

IUB Strategic Space Utilization Committee, Spring 2020.  
Co-chair, Luddy School + School of Education Joint Degree Task Force, Fall 2019.  
Co-chair, Luddy School + SoAAD Joint Degree Task Force, Fall 2019.  
Chair, Honors Education Task Force, Fall 2019.  
Member, Offshore Programs and International Affiliations Committee, Fall 2019–present.  
Member, Advisor Promotion Campus Review Committee, Spring 2018, Spring 2019, Spring 2020.  
Reviewer and Interviewer for The Wells Scholarship, Fall 2016, Fall 2017, Fall 2018.  
Member, Global Corp Task Force, Fall 2016.  
Member, Overseas Study Working Group, Fall 2013-present.  
Member, IU Engineering Task Force, Fall 2014.  
Member, IU Strategic Planning Committee, Undergraduate Team, Fall 2013.  
Participant (nominated by the Provost), Executive Leadership Institute, 2013-14.  
Member, Advisory Council, Serve IT, June 2013-present.  
Member, Graduate Statistics Committee, 2012.  
Member, Campus Library Committee, Spring 2011.  
Member, Mathematical Modeling Subcommittee of General Education Committee, Spring 2009, Spring 2010, Spring 2014, Spring 2015, Spring 2016, Spring 2017, Spring 2018, Spring 2019, Spring 2020.

### **Profession**

Program Committee Member, TLLA 2019, 3rd International Workshop on Trends in Linear Logic and Applications, Dortmund, 29-30 June 2019.  
Poster Co-chair, iConference 2017, Fall 2016  
Coordinator, Midwest Theory Day, November 2012-present.  
Co-organized the workshop *Geometry of Interaction, Traced Monoidal Categories, and Implicit Complexity* in Kyoto, Japan, August 24-28, 2009.  
Commentator for the special session on Logical and Mathematical Aspects of Informatics. *Informatics:*



*Defining the Research Agenda*, IU, Bloomington, 2004.

Associate Editor for the journal ELEKTRIK, Technical & Scientific Research Council of Turkey, 1993 – 1994.

Member of advisory board for the journal *Electrical Engineering*, Turkish Chamber of Electrical Engineers, 1991–1993.

### Editorial work

Member of the editorial board of The Scientific World Journal, Mathematical Logic, Hindawi Publishing Corporation.

### Reviewer

Computing Reviews, Zentralblatt Math, and Mathematical Reviews.

### Refereeing

2000	Mathematical Struct. in Comp. Science	Journal
2001	Logic in Computer Science (LICS)	Conference
	Typed Lambda Calculi and Applications (TLCA)	Conference
2002	Category Theory in Computer Science (CTCS)	Conference
	Hybrid Systems Computation and Control (HSCC)	Conference
	Logic in Computer Science (LICS)	Conference
2003	Logic in Computer Science (LICS)	Conference
2004	Applied Categorical Structures	Journal
	International Colloquium on Automata Languages and Programming (ICALP)	Conference
	Hybrid Systems Computation and Control (HSCC)	Conference
2005	Applied Categorical Structures	Journal
	Mathematical Foundations of Programming Semantics (MFPS)	Conference
	Conference on Algebra and Coalgebra in Computer Science (CALCO)	Conference
	Computer Science Logic (CSL)	Conference
	Mathematical Struct. in Comp. Science	Journal
2006	Handbook of Computer Networks	Book
	ICALP	Conference
	Computer Science Logic (CSL)	Conference
	IEEE Transactions on Automatic Control	Journal
	Theoretical Computer Science	Journal
2007	Logic in Computer Science (LICS)	Conference
	Theoretical Computer Science	Journal
2008	ICALP	Conference
	Theoretical Computer Science	Journal
	FOSSACS	Conference
2010	Mathematical Struct. in Comp. Science	Journal
2011	Journal of Pure and Applied Algebra	Journal
2015	FOSSACS	Conference
2016	Logic in Computer Science (LICS)	Conference
2016	Mathematical Struct. in Comp. Science	Journal
2017	Mathematical Struct. in Comp. Science	Journal

### Invited Lectures

- Aspects of Category Theory, IUB Math Club, October 2012.
- Aspects of Category Theory, The Fourth Workshop on Information Theoretic Methods in Science and Engineering (WITMSE) 2011, Helsinki, Finland, August 2011.
- On Categorical Models for Geometry of Interaction (3 talks), Kansai Seminar House, Kyoto, Japan, August 2009.
- Invited speaker at MFPS 24, Special session to honor Philp Scott's 60th Birthday. May 2008. (Could not attend due to illness).
- *An Introduction to Conrad*, Bioinformatics Journal Club, Univ. of Minnesota, April 2008.
- *Categorical Trace and Geometry of Interaction*. Institut de Mathmatiques de Luminy, Luminy, Marseille, June 2007.
- *Typed GoI for Exponentials*. Logic Seminar, IU, Bloomington, November 2006.
- *From Categorical Logic to Hybrid Dynamical Systems*, The Honors Seminar, CSCI Y499, Honors Research and INFO I499, Reading and Research in Informatics. September 25, 2006.
- *Mathematical Proofs*, Informatics Summer Camp, July 2006.
- *On Mathematical Analysis of Formal Proofs*. Indiana University Bloomington, School of Informatics, Colloquium talk. February 2006.
- *Typed Geometry of Interaction.*, Geometry of Interaction Workshop, Geometry of Computation, GeoCal, Marseille, France. February 21, 2006.
- *A Categorical Model for the Geometry of Interaction*. Logikseminariet Stockholm – Uppsala, June 2004.
- *Bisimulation Relations for Hybrid Systems*. Center for Applied Mathematics, Department of Electrical Engineering, Notre Dame University, February 2004.
- *Bisimulation for Hybrid Systems*. Logic Group Seminar, Department of Mathematics, Indiana University, December 2003.
- *Geometry of Proofs*. Colloquium talk, Department of Mathematics, Indiana University, September 2002.
- *Linear Logic and Its Models*. Logic Group Seminar, Department of Mathematics, Indiana University, October 2002.
- *A full and faithful completeness theorem for Geometry of Interaction categories*. LICS 2001, Workshop on Full Abstraction and Full Completeness, June 19-20, 2001.
- *Geometry of Proofs, A Categorical Approach*, Graduate Student Colloquium, Department of Mathematics, University of Pennsylvania, March 2001.
- *From Geometry of Interaction to Denotational Semantics*, Association for Symbolic Logic Annual Meeting, University of Pennsylvania, March 2001.
- *Linear Logic and Geometry of Proofs*, The Logic and Computation Group, University of Pennsylvania, Department of Mathematics, May 2000.
- *Linear Logic, Geometry of Proofs and Full Completeness*, The Canadian Mathematical Society, Winter 99 Meeting, December 1999.
- *Logic and Computation*, Graduate students' seminar, University of Ottawa, September 1998.
- *Traced monoidal and partially additive categories*, Basic Research in Computer Science (BRICS), Lunch seminar series, Aarhus, Denmark, 1997.
- *Gödel's Incompleteness Theorems*. Colonel By High School, Ottawa, May 1999. As part of the science programme of University of Ottawa for high school students.

#### Invited Panels:

IMA (Institute for Mathematics and its Applications) Summit for the 2007-08 IMA Annual Program "Mathematics of Molecular and Cellular Biology", Feb 5-7, 2012, Svannah, GA.

I was the scribe and presenter for the sub-panel on Mathematical models in biological networks, systems and cells.

#### Regular Talks:

- Aspects of Category Theory, IUB Theory seminar, September 2011.
- On Categorical Models for Geometry of Interaction, IUB Logic seminar, January 2010.
- *Introduction to the Connectivity Map*, Genomic Data Mining Working Group, CGB, December 2008.

- *Classification of Biological Phenotypes*, Genomic Data Mining Working Group, CGB, November 2008.
- *Typed GoI for Exponentials*. ICALP 2006, Venice, Italy, July 2006.
- *Towards A Typed Geometry of Interaction*. Category Theory Octoberfest. Ottawa, Canada, October 2005.
- *Logic* Graduate Student Seminar, Informatics. October 2005.
- *Towards A Typed Geometry of Interaction*. IU Logic Seminar. September 2005.
- *Towards A Typed Geometry of Interaction*. CSL 2005, Oxford, UK, August 2005.
- *A Categorical Model for the Geometry of Interaction*. ICALP 2004, Turku, Finland, July 2004.
- *Partially Additive Categories and Fully Complete Models of Linear Logic*, Typed Lambda Calculi and Applications, Krakow, May 2001.
- *Partially Additive Categories and Fully Complete Models of Linear Logic*, The Logic and Computation Group, University of Pennsylvania, Department of Mathematics, February 2001.
- *Geometry of Proofs and Full Completeness*, Octoberfest, McGill University, Montreal, October 1999.
- *Unique Decomposition Categories, Geometry of Interaction and Combinatory Algebras*, Foundational Methods in Computer Science, FMCS'99 Calgary, June 1999.
- *Geometry of Interaction and Models of Untyped Combinatory Logic*, Category Theory Group, McGill University, March 1998.

### Other Meetings and Conferences (attendance only):

- USENIX: Virtual, August 11-14, 2020.
- FinTech Risks and Opportunities: An Interdisciplinary Approach, Ann Arbor, November 16-17, 2017.
- The 2nd Annual Eastern Conference on Mathematical Finance (ECMF), NYC, November 3-5, 2017.
- Quantopian's Algorithmic Trading Conference, NYC, April 28-29, 2017.
- Trading Technologies Algo Show, Chicago, January 13, 2017.
- The Ernst & Young Foundation 9th Annual Campus Diversity and Inclusiveness Roundtable, NYC, January 4-5, 2017.
- SIAM Conference on Financial Mathematics and Engineering, Austin, Texas, USA, November 17-19, 2016.
- NCWIT Pacesetters Roundtable, Denver, Colorado, USA, October 11-12, 2016.
- Bid Data Finance, New York, NY, USA, May 19, 2016.
- R/Finance 2015: Applied Finance with R, University of Illinois, Chicago, IL, USA, May 29 & 30, 2015.
- Market Microstructure and High-Frequency Data, University of Chicago, IL, USA, May 14-16, 2015.
- R/Finance 2014: Applied Finance with R, University of Illinois, Chicago, IL, USA, May 16 & 17, 2014.
- Extremal Combinatorics at Illinois (EXCILL2), University of Illinois, Urbana, IL, Mar 16-18, 2013.
- Foundations of Computational Mathematics (FoCM 2011). Budapest, July 12-14, 2011.
- The 24th Annual Conference on Learning Theory (COLT 2011). Budapest, July 9-11, 2011.
- The 2nd Annual Midwest Symposium on Computational Biology and Bioinformatics. Univ. of Illinois at Urbana-Champaign. October 2008.
- IMA New Directions Short Course on Mathematical Neuroscience, June 2008.
- Workshops, Seminars, Tutorials at IMA, Jan. 01, 2008-June 30, 2008.
- Phylogenetic Combinatorics and Applications 2004. Biomedical Center, Uppsala, Sweden. July 2004.
- First Annual Indiana Bioinformatics Conference, Indianapolis, May 27, 2004.
- NASSLLI, IU Bloomington, June 2003.
- Coding Theory and Quantum Computing, University of Virginia, Charlottesville, May 2003.
- DIMACS Workshop on Computational Issues in Game Theory and Mechanism Design, November 2001.
- World Mathematical Year 2000 Symposium, The Legacy of John Charles Fields, Toronto, Canada, June 2000.
- Mathematical Foundations of Programming Semantics, MFPS 12, Boulder, May 1996.
- Marktoberdorf Summer School on Deductive Program Design, Marktoberdorf, Germany, August 1994.

### Professional Affiliations

American Mathematical Society, 1995 – present.  
 Association for Computing Machinery, 2012 – present.

Mathematical Association of America, 1995 – 2000, 2010-2012.  
European Association for Theoretical Computer Science, 2004-2006.  
IEEE, 2010-2011.  
SIAM, 2011-2013, 2016-2018.