Curriculum Vitae of
Christopher Lynch

Education

Boston University, Boston, MA, September 1988–January 1994. PhD in Computer Science. Advisor: Wayne Snyder. Research in computational logic and theorem proving (with equality).

SUNY Binghamton, Binghamton, NY, September 1982–May 1988. M.A. in Mathematics. Advisor: Fernando Guzmán. Original Master's Thesis in Universal Algebra.

Syracuse University, Syracuse, NY, September 1978–May 1982. B.S. Cum Laude in Computer Science.

Work Experience

Clarkson University , Potsdam, NY, July 2009 - present. Chair of Division of Math and Computer Science

Clarkson University , Potsdam, NY, July 2008–2009. Associate Chair of Division of Math and Computer Science

Clarkson University, Potsdam, NY, July 2007–present. Professor of Computer Science.

Clarkson University, Potsdam, NY, July 2002–July 2007. Associate Professor of Computer Science.

Naval Research Laboratory, Washington, DC, July 2003 – June 2004. Research in Cryptographic Protocol Analysis (Sabbatical).

Clarkson University, Potsdam, NY, August 1996–July 2002. Assistant Professor of Computer Science.

INRIA (National Research Institue for Computer Science and Automation), Nancy, France, December 1994–July 1996. Postdoctorate Felllowship in PROTHEO group.

Université Henri Poincaré, Nancy, France, July 1994–November 1994. Visiting Professor in PROTHEO group.

Northeastern University, Boston, MA, September 1993–June 1994. Visiting Assistant Professor in Computer Science Department.

IBM, Endicott, NY, June 1982–January 1988. Senior Associate Programmer. Responsibilities included Project Leading, System Designing, Program Designing, Coding, Testing, and Maintaining in a wide variety of systems and languages.

Boston University Information Technology, Boston, MA, September 1988–July 1989. Systems Programmer for IBM system.

Refereed Journal Publications

1. Christopher Lynch, Quang-Trung Ta, Duc-Khanh Tran: **SMELS: Satisfiability Modulo Equality with Lazy Superposition.** J. Autom. Reasoning 51(3): 325-356 (2013)
2. Siva Anantharaman, Hai Lin, Christopher Lynch, Paliath Narendran, Michal Rusinowitch: **Unification Modulo Homomorphic Encryption.** J. Autom. Reasoning 48(2): 135-158 (2012)
3. Christopher Lynch, Silvio Ranise, Christophe Ringeissen, Duc-Khanh Tran: **Automatic decidability and combinability.** Inf. Comput. 209(7): 1026-1047 (2011)
4. Maria Paola Bonacina, Christopher Lynch, Leonardo Mendona de Moura: **On Deciding Satisfiability by Theorem Proving with Speculative Inferences.** J. Autom. Reasoning 47(2): 161-189 (2011)
5. Jeremy Bongio, Cyrus Katrak, Hai Lin, Christopher Lynch, Ralph Eric McGregor: **Encoding First Order Proofs in SMT.** Electronic Notes in Theoretical Computer Science 198(2): 71–84 (2008)
6. Christopher Lynch, Yuefeng Tang: **Rewriting Interpolants.** Electronic Notes in Theoretical Computer Science 212: 163–176 (2008)
7. Chrstopher Lynch, Catherine Meadows: **On the Relative Soundness of the Free Algebra Model for Public Key Encryption.** Electronic Notes in Theoretical Computer Science 125(1): 43–54 (2005)

8. Christopher Lynch, Chrstelle Scharff: **Basic Completion with E-cycle Simplification.** Fundamenta Informaticae 39(1–2): 145–165 (1999)
9. Christopher Lynch: **Local Simplification.** Information and Computation 142(1): 102–126 (1998)
10. Christopher Lynch, Polina Strogova: **SOUR Graphs for Efficient Completion.** Discrete Mathematics and Theoretical Computer Science 2(1): 1–25 (1998)
11. Christopher Lynch **Oriented Equational Logic Programming is Complete** Journal of Symbolic Computation 23(1): 24–45 (1997)
12. Christopher Lynch, Wayne Synder: **Redundancy Criteria for Constrained Completion.** Theoretical Computer Science 142(2): 141–177 (1995)
13. Leo Bachmair, Harald Ganzinger, Christopher Lynch, Wayne Snyder: **Basic Paramodulation.** Information and Computation 121(2): 172–192 (1995)
14. Christopher Lynch, Fernando Guzmán: **Varieties of Positive Implicative BCK–algebras. Subdirectly Irreducible and Free Algebras.** Mathematica Japonica, 37(1): 27–39 (1992)

Refereed Conference Papers

1. Christopher Lynch: **Constructing Bachmair-Ganzinger Models.** Programming Logics 2013: 285-301
2. Serdar Erbatur, Santiago Escobar, Deepak Kapur, Zhiqiang Liu, Christopher Lynch, Catherine Meadows, Jos Meseguer, Paliath Narendran, Sonia Santiago, Ralf Sasse: Asymmetric Unification: **A New Unification Paradigm for Cryptographic Protocol Analysis.** CADE 2013: 231-248
3. Christopher Bouchard, Kimberly A. Gero, Christopher Lynch, Paliath Narendran: **On Forward Closure and the Finite Variant Property.** FroCos 2013: 327-342
4. Siva Anantharaman, Serdar Erbatur, Christopher Lynch, Paliath Narendran, Michal Rusinowitch: **Unification Modulo Synchronous Distributivity.** IJCAR 2012: 14-29

5. Serdar Erbatur, Santiago Escobar, Deepak Kapur, Zhiqiang Liu, Christopher Lynch, Catherine Meadows, Jos Meseguer, Paliath Narendran, Sonia Santiago, Ralf Sasse: **Effective Symbolic Protocol Analysis via Equational Irreducibility Conditions.** ESORICS 2012: 73-90
6. Zhiqiang Liu, Christopher Lynch: **Efficient General Unification for XOR with Homomorphism.** CADE 2011: 407-421
7. Santiago Escobar, Deepak Kapur, Christopher Lynch, Catherine Meadows, Jos Meseguer, Paliath Narendran, Ralf Sasse: **Protocol analysis in Maude-NPA using unification modulo homomorphic encryption.** PPDP 2011: 65-76
8. Siva Anantharaman, Hai Lin, Christopher Lynch, Paliath Narendran, Michal Rusinowitch: **Cap unification: application to protocol security modulo homomorphic encryption.** ASIACCS 2010: 192-203
9. Christopher Lynch: Frontmatter **(Titlepage, Table of Contents, Author List, PC List, Reviewer List)**. RTA 2010
10. Christopher Lynch: **Preface.** RTA 2010
11. Maria Paola Bonacina, Christopher Lynch, Leonardo Mendona de Moura: **On Deciding Satisfiability by DPLL(G+T) and Unsound Theorem Proving.** CADE 2009: 35-50
12. Siva Anantharaman, Hai Lin, Christopher Lynch, Paliath Narendran, Michal Rusinowitch: **Unification Modulo Homomorphic Encryption.** FroCoS 2009: 100-116
13. Christopher Lynch, Ralph Eric McGregor: **Combining Instance Generation and Resolution.** FroCoS 2009: 304-318
14. Christopher Lynch, Yuefeng Tang: **Interpolants for Linear Arithmetic in SMT.** ATVA 2008: 156-170
15. Christopher Lynch, Duc-Khanh Tran: **SMELS: Satisfiability Modulo Equality with Lazy Superposition.** ATVA 2008: 186-200
16. Christopher Lynch, Duc-Khanh Tran: **Automatic Decidability and Combinability Revisited.** CADE 2007: 328-344.

17. Todd Deshane, Wenjin Hu, Patty Jablonski, Hai Lin, Christopher Lynch: **Encoding First Order Proofs in SAT'.** CADE 2007: 476-491.

18. Stephanie Delaune, Hai Lin, Christopher Lynch: **Protocol Verification Via Rigid/Flexible Resolution.** LPAR 2007: 242-256.

19. Christopher Lynch, Barbara Morawska: **Faster Basic Syntactic Mutation with Sorts for Some Separable Equational Theories.** Rewriting Techniques and Applications 2005: 90–104

20. Christopher Lynch: **Unsound Theorem Proving.** Computer Science Logic 2004: 473–487

21. Christopher Lynch, Catherine Meadows: **Sound Approximations to Diffie-Hellman Using Rewrite Rules.** International Conference on Information and Communications Security 2004: 262–277

22. Christopher Lynch: **Schematic Saturation for Decision and Unification Problems.** Conference in Automated Deduction 2003: 427-441

23. Christopher Lynch, Barbara Morawska: **Automatic Decidability.** Logic in Computer Science, pp. 2002: 7–18

24. Christopher Lynch, Barbara Morawska: **Basic Syntactic Mutation** Conference on Automated Deduction 2002: 471–485

25. Christopher Lynch, Barbara Morawska: **Complexity of Linear Standard Theories.** Logic for Programming, Artificial Intelligence and Reasoning 2001: 188–200

26. Christopher Lynch, Barbara Morawska: **Decidability and Complexity of Finitely Closable Linear Equational Theories.** International Joint Conference on Automated Reasoning 2001: 495–513

27. Christopher Lynch, Barbara Morawska: **Goal Directed E-Unification.** Rewriting Techniques and Applications 2001: 231–245

28. Christopher Lynch: **The Unification Problem for One Relation Thue Systems.** Artificial Intelligence and Symbolic Computation 1998: 195–208

29. Christopher Lynch, Christelle Scharff: **Basic Completion with E-cycle Simplification.** Artificial Intelligence and Symbolic Computation 1998: 209–221
30. Christopher Lynch **Goal-directed Completion using SOUR Graphs.** Rewriting Techniques and Applications 1997: 8–22
31. Christopher Lynch, Polina Strogova: **PATCH Graphs: an Efficient Data Structure for Completion of Finitely Presented Groups.** Artificial Intelligence and Symbolic Mathematical Computation 1996: 176–190
32. Claude Kirchner, Christopher Lynch, Christelle Scharff: **Fine Grained Concurrent Completion.** Rewriting Techniques and Applications 1996: 3–17
33. Christopher Lynch: **Paramodulation without Duplication.** Logic in Computer Science 1995: 167–177
34. Christopher Lynch: **Local Simplification.** Conference on Constraints in Computational Logic 1994: 3–18
35. Christopher Lynch, Wayne Snyder **Redundancy Criteria for Constrained Completion.** Rewriting Techniques and Applications 1993: 2–16
36. Leo Bachmair, Harald Ganzinger, Christopher Lynch, Wayne Snyder: **Basic Paramodulation and Superposition.** Conference on Automated Deduction 1992: 462–476
37. Wayne Snyder, Christopher Lynch: **Goal Directed Strategies for Paramodulation.** Rewriting Techniques and Applications 1991: 150–161
38. Wayne Snyder, Christopher Lynch: **Complete Inference Systems for Horn Clause Logic with Equality: A Foundation for Logic Programming with Equality.** Conditional and Typed Rewriting Systems 1990: 454–461,

Invited Talks

1. "Equational Reasoning and Unification in Protocol Verification", Chinese Acadamy of Sciences, Beijing, China, July, 12, 2013.

2. "Geometric Quantifier Elimination Heuristics for Automatically Generating Octagonal and Max-plus Invariants", International Workshop on Strategies, Manchester, England, July 1, 2012.
3. "Asymmetric Unification: A New Unification Paradigm for Cryptographic Protocol Analysis", Security and Rewriting workshop, Dagstuhl, Germany, August 15, 2011.
4. "Unification in Cryptographic Protocol Analysis", Unification Workshop, Wroclaw, Poland, July 31, 2011.
5. "Modular Theorem Proving", Decision Procedures in Soft, Hard and Bio-ware, Dagstuhl, Germany, July 3, 2011.
6. "First Order Reasoning in Software Verification", University of Toulouse, Toulouse, France, December 8, 2009.
7. Protocol Verification with Cap Unification", Max Planck Institut fur Informatik, Saarbruecken, Germany, July 2008.
8. "Cap Unification", IFIP working group on rewriting, Hagenberg Austria, July 2008.
9. SMELS: Satisfiability Modulo Equality with Lazy Superposition", Dagstuhl Germany, October 2007.
10. "Theorem Proving", Invited Lecture at International School on Rewriting", Nancy France, July 2007.
11. "Rewriting Interpolants", at IFIP working group on rewriting, Paris, France, June 2007.
12. "Cryptographic Protocol Analysis using Deduction Modulo", LORIA, Nancy France, February 2007.
13. "Cryptographic Protocol Analysis using Deduction Modulo", University of Paris, December 2006.
14. "Cryptographic Protocol Analysis with Rigid Theorem Proving" at IFIP Working Group 1.6 on Term Rewriting, Seattle, August 2006.
15. "Theorem Proving", International School on Rewriting, Nancy, France, July 2006.

16. "Interpolants in Invariant Construction", at Workshop on Formal Digital Libraries and Little Engines of Proof, Carnegie Mellon University, February 2006.
17. "Preferred Model Construction" at Dagstuhl seminar on Deduction and Applications, Dagstuhl Germany, October 2005.
18. "Constructing Bachmair Ganzinger Models", Workshop on Programming Logics in memory of Harald Ganzinger, Saarbruecken, Germany, June 2005.
19. "Cryptographic Protocol Analysis: Looking Inside the Black Box", Seminar at Washington University, December 2004.
20. "Unsound Theorem Proving", Seminar at Technical Univerity of Dresden, September 2004.
21. "Unsound Theorem Proving", Seminar at SRI, Feb 2004.
22. "Decidability and Complexity of E-Unification for some Classes of Equational Theories," Sixteenth Annual Workshop on Unification, Copenhagen, Denmark, 2002.
23. "SOUR Graphs and Tree Automata", Seminar at INRIA, Nancy, France, 1999.
24. "Completeness Proof of Resolution and Paramodulation", Seminar at University of Paris, Paris, France, 1999.
25. "Introduction to Automated Deduction", Seminar at University of Veracruz, 1999.
26. "Decision Procedure using Synactic Theories", Seminar at LANIA, Xalapa, Mexico, 1999.
27. "Decision Procedure using Synactic Theories", Seminar at Max Planck Institute, Saarbrueken, Germany, 1999.
28. "Decision Procedure using Synactic Theories", Seminar at INRIA, Nancy, France, 1999.
29. "The Unification Problem for One Relation Thue Systems," Seminar at INRIA, Nancy, France, 1998.
30. "Combining Logic and Functional Programming," Seminar at Polytechnic University of Catalonia, Barcelona, Spain, 1996.

31. "Combining Logic and Functional Programming," Seminar at University of Orleans, Orleans, France, 1996.
32. "Goal–Directed Completion," Seminar at CWI (Center of Science and Computer Science), Amsterdam, Holland, 1996.
33. "Goal–Directed Completion using SOUR Graphs," Seminar at University of Orsay, Paris, France, 1995.
34. "Paramodulation without Duplication," Seminar at Technical University of Munich, Munich, Germany, 1995.
35. "Efficiency of Equational Theorem Proving," Seminar at University of Minnesota, Duluth, Minnesota, USA, 1995.
36. "Efficiency of Equality Theorem Provers," Seminar at CWI (Center for Science and Computer Science), Amsterdam, Holland, 1995.
37. "Paramodulation without Duplication," Seminar at Max-Planck-Institut für Informatik, Saarbrücken, Germany, 1995.
38. "Search Space of Paramodulation Theorem Provers," Seminar at Technical University of Munich, Munich, Germany, 1994.
39. "Efficient Proof Search for Paramodulation Inference Systems," Seminar at INRIA, Nancy, France, 1994.

Talks in International Conferences and Workshops

1. "Asymmetric Unification: A New Unification Paradigm for Cryptographic Protocol Analysis", Conference on Automated Deduction, Lake Placid, New York, June 12, 2013.
2. "Unification Modulo Synchronous Distributivity", International Joint Conference on Automated Reasoning, Manchester, England, June 27, 2012.
3. "Efficient General Unification for XOR with Homomorphism", Conference in Auatomated Deduction, Wroclaw, Poland, August 3, 2011.
4. "Asymmetric Unification: A New Unification Paradigm for Cryptographic Protocol Analysis", Unification Workshop, Wroclaw, Poland, July 31, 2011.

5. "Combining Instance Generation and Resolution", Frontiers of Combining Systems, Trento, Italy, September 18, 2009.
6. "Cap Unification: Application to Protocol Security modulo Homomorphic Encryption", Unification Workshop, Montreal, Canada, August 2, 2009.
7. "SMELS: Satisfiability Modulo Equality with Lazy Superposition", SMT Workshop, Princeton, June 2008.
8. Unification modulo Homomorphic Encryption is Decidable", Unification Workshop, Hagenberg, Austria, July 2008.
9. "SMELS: Satisfiability Modulo Equality with Lazy Superposition", Conference on Automated Technology for Verification and Analysis, 2008, Seoul, October 2008.
10. "Encoding First Order Proofs in SMT", Berlin, Germany, June 2007.
11. "Symbolic Debugging in Polynomial Time", at Conference on Rewriting Techniques and Applications, Nara, Japan, April 2005.
12. "Sound Approximations to Diffie-Hellman Using Rewrite Rules", at Workshop on Intereperability, Pervasive Computing, and Security, Savannah Georgia, September 2004.
13. "Unsound Theorem Proving", at Conference on Computer Science Logic, Karpacz, Poland, September 2004.
14. "Unsound Theorem Proving", Workshop on Disproving, Cork, Ireland, July 2004.
15. "On the Relative Soundness of the Free Algebra Model for Public Key Encryption", at Workshop on Automated Reasoning for Security Protocol Analysis, Cork, Ireland, July 2004.
16. "Sound Approximations to Diffie-Hellman Using Rewrite Rules", at DIMACS Workshop on Security Analysis of Protocols, Piscataway NJ, June 2004.
17. "On the Relative Soundness of the Free Algebra Model for Public Key Encryption" at Workshop on Issues in the Theory of Security, Barcelona Spain, April 2004.

18. "Sound Approximations to Diffie-Hellman using Rewrite Rules" at Protocol Exchange Seminar, Monterey CA, Feb 2004.
19. "Automatic Decidability" at Workshop on Formal Digital Libraries and Little Engines of Proof, Menlo Park CA, Oct 2003.
20. "Cryptographic Protocol Models and Free Algebras", at Protocol Exchange Seminar, Baltimore MD, Oct 2003.
21. "Schematic Saturation for Decision and Unification Problems" at Conference on Automated Deduction, Miami FL, July 2003.
22. "Preferred Models for Ordered Resolution", at Workshop on Model Computation, Miami FL, July 2003.
23. "Automatice Decidability," IEEE Symposium on Logic in Computer Science, Copenhangen, Denmark, 2002.
24. "Complexity of Linear Standard Theories," International Conference on Logic for Programming, Artificial Intelligence and Reasoning, Havana, Cuba, 2001.
25. "Decidability and Complexity of Finitely Closable Linear Equational Theories," International Joint Conference on Autmated Reasoning, Siena, Italy, 2001.
26. "Goal Directed E-Unification," International Conference on Rewriting Techniques and Applications, Utrecht, Netherlands, 2001.
27. "Completeness, Decidability, Complexity," Deduction Seminar, Daghstuhl, Germany, 2001.
28. "Efficiently Decidable Equational Theories," Retreat on Automated Deduction, Saarbruecken, Germany, 2000.
29. "Unification Problems in Unitary Theories," Workshop on Unification Theory, Frankfurt, Germany, 1999.
30. "The Unification Problem for One Relation Thue Systems," Conference on Artificial Intelligence and Symbolic Computation, Plattsburgh, New York, 1998.
31. "Basic Completion with E-cycle Simplification," Conference on Artificial Intelligence and Symbolic Computation, Plattsburgh, New York, 1998.

32. "The Unification Problem for One Relation Thue Systems," Workshop on Unification Theory, Rome, Italy, 1998.
33. "Goal Directed Completion using SOUR Graphs," Conference on Rewriting Techniques and Applications, Barcelona, Spain, 1997.
34. "Grammatical Compilation of Equational Theories," Workshop on Unification Theory, Orleans, France, 1997.
35. "Goal Directed Completion using SOUR Graphs," Workshop on Term Schematizations and Their Applications, New Brunswick, 1996.
36. "Using SOUR Graphs to solve Word Problems," Workshop on Unification Theory, Munich, Germany, 1996.
37. "Goal Directed Completion using SOUR Graphs," Workshop on Construction of Computational Logics, Munich, Germany, 1995.
38. "Paramodulation without Duplication," IEEE Symposium on Logic in Computer Science, San Diego, California, 1995.
39. "Oriented Equational Logic Programming is Complete," Unification Workshop, Barcelona, Spain, 1995.
40. "Selection Rules and Constraints in Equational Theorem Proving," Workshop on Mechanization of Deduction, Grenoble, France, 1994.
41. "Local Simplification," Conference on Constraints in Computational Logic, Munich, Germany, 1994.
42. "A New Version of the Special Relation Rules," Workshop on Theory Reasoning in Automated Deduction, Nancy, France, 1994.
43. "Redundancy Criteria for Constrained Completion," Conference on Rewriting Techniques and Applications," Montreal, Quebec, 1993.
44. "Basic Paramodulation and Superposition," Conference on Automated Deduction," Albany, New York, 1992.

Professional Service

- Served on Steering Committee for Internation School on Rewriting: France(2006).

- Served on program committee for Conference on Logic for Programming Artificial Intelligence and Reasoning: 2003(Kasakhstan), 2005(Jamaica), 2005(Uruguay), 2006(Cambodia), 2007(Armenia).
- Served on program committee for Workshop on Logic for Automated Reasoning and Automated Reasoning for Logic: 2006(Russia).
- Served on program committee for International Joint Conference on Automated Reasoning: 2004(Ireland), 2006(USA), 2008(Australia) 2012(UK).
- Served on program committee for Workshop on First Order Theorem Proving: 1997(Austria), 2005(Germany), 2009(Norway).
- Served on program committee for Conference on Automated Deduction: 1998(Germany), 1999(Italy), 2002(Denmark), 2003(Publicity Chair,USA), 2005(Estonia), 2009(Canada), 2011(Poland), 2013(Conference Chair,USA).
- Reviewer for NSF Graduate Research Fellowship Program.
- Served on program committee for Conference on Rewriting Techniques and Applications: 2000(UK), 2002(Denmark), 2003(Spain), 2010(PC Chair,UK), 2014(Austria).
- Panel Reviewer for National Science Foundation: several times.
- Served on program committee of Workshop on Unification Theory: 2000 (PC Chair), 2009(PC Chair,Canada), 2010(UK), 2012(UK), 2013(Netherlands).
- Served on program committee of Workshop on Automated Deduction: Decidability, Complexity, Tractability: 2007(Germany), 2008(Australia), 2013(USA).
- Served on program committee of Workshop on Security and Rewriting Techniques: 2009(USA), 2010(Spain).
- Served on conference committee for Workshop on First Order Theorem Proving.
- Helped organize Workshop on First Order Theorem Proving.
- Workshop organizer for Workshop on Automated Reasoning in Security: 2013(USA).

- Reviewed chapters for Handbook of Automated Reasoning.
- Reviewed grant proposals for Civilian Research and Development Foundation, Canada.
- Reviewed grant proposals for Austrain Science Fund.
- Reviewed papers for the many journals and conferences
- Journal Editor, Special Issue of Logical Methods in Computer Science.
- Reviewer, Stiftung Sudtiroler Sparkasse Award, Austria: 2010.
- Reviewed Computer Science program for Wilkes University, Wilkes-Barre, Pennsylvania: 2011.
- PhD advisor for Barbara Morawska, Yuefeng Tang, Hai Lin, Ralph Eric McGregor, Zhiqiang Liu.
- Served on PhD thesis committee for students in Computer Science, Math, Computer Engineering and Electrical Engineering at Clarkson University. Also for:
  - Andrew Marshall, SUNY Albany, Albany, NY
  - Hicham Bensaid, University of Grenoble, Grenoble, France
  - Mounira Kourjieh, University of Toulouse, Toulouse, France
  - Duc-Khanh Tran, University Henri Poincare, Nancy France
  - Richard Bonichon, University Paris VI, Paris, France
  - Stephanie Delaune, Ecole Normale Superieure of Cachan, Cachan, France
  - Miquel Bofill, Technical University of Catalonia, Barcelona, Spain
  - Juergen Stuber, University of the Saarlandes, Saabreucken Germany
  - Ashish Tiwari, Stony Brook University, Stony Brook, NY
  - Christelle Scharff, Henri Poincare University, Nancy France
  - Polina Strogova, Henri Poincare University, Nancy France

Grant Activities

1. Supporting investigator on research grant of $422,134 by USAF for "Mission Security", 2010–2012.

2. Awarded research grant of $480,000 by National Science Foundation for "Unification Laboratory: Increasing the Power of Cryptographic Protocol Analysis Tools", 2009–2012.
3. Awarded research grant of $125,000 by National Science Foundation for "Unification Laboratory for Cryptographic Protocol Analysis", 2008–2009.
4. Awarded research grant of $175,000 by National Science Foundation for "Infer! A Foundation for Inferential Analysis", 2003–2007.
5. Awarded grant from ASEE for sabbatical at Naval Research Laboratory, 2003–2004.
6. Awarded research grant of $10,000 by ITT for "Cryptographic Protocol Analysis", 2002–2003.
7. Awarded research grant of $103,147 from National Science Foundation for "Semantic Unification", 2001–4004.
8. Awarded research grant of $45,838 from Office of Naval Research, "Cryptographic Protocol Verification", 2001.
9. Awarded research grant of $142,602 from National Science Foundation , "Equality Reasoning: Word and Unification Problems", 1997–2000.
10. Grant from region of Lorraine (France) for postdoc position at INRIA, 1994–1996.
11. NSF travel grant to Fifth Annual Conference on Rewriting Techniques and Applications, 1993.
12. Research Fellowship on NSF Grant No. CCR–88–14339, PI: Steve Homer, 1991.
13. Research Fellowship on NSF Grant No. CCR–89–01647, PI: Assaf Kfoury, 1990–1991.

Awards

- Million Dollar Club, Clarkson University, 2010.
- Graham Faculty Research Award, Clarkson University, 2002.

Courses Taught at Clarkson University (most courses taught many times)

CS141, Introduction to Computer Science I

CS142, Introduction to Computer Science II

CS250, Symbolic Computation

CS350, Software Design and Development

CS408, Automated Reasoning

CS447, Computer Algorithms

CS451, Artificial Intelligence

CS458, Formal Methods for Program Verification

CS511, Foundations of Computer Science

CS547, Computer Algorithms

CS550, Software Design and Development

CS551, Artificial Intelligence

CS558, Formal Methods for Program Verification

CS653, Automated Reasoning

CS657, Advanced Topics in Computer Security

CS661, Symbolic Logic

EE565, Artificial Intelligence

EE667, Computer Algorithms

IT501, Software Systems

MA211, Foundations of Mathematics

MA314 Number Theory

Courses Taught at Northeastern University

COM3390, Analysis of Algorithms

COM1105, Computer Science and Applications

COM1390, Analysis of Algorithms

COM1100, Fundamentals of Computer Science

Courses Taught at Boston University

CS112, Computer Science II

CS111, Introduction to Computer Science

CS330, Analysis of Algorithms

CS547, Expert Systems

Teaching Fellow (taught discussion sections)

CS111, Introduction to Computer Science

CS113, Advanced Introduction to Computer Science and C

CS101, Introduction to Computers

Department Committees at Clarkson

Graduate Committee (Chair)

Computer Science Graduate Committee

Computer Science Undergraduate Committee

Math Graduate Committee

Math Undergraduate Committee

Student Liaison Committee

Colloquium Committee

Hiring Committee for Computer Science Faculty Position (Chair, many times)

Hiring Committee for Math Faculty (Chair, many times)

Hiring Committee for Statistics Faculty (Chair, many times)

Hiring Committee for Secretary of MCS (Chair)

Committee to Establish PhD program in Computer Science (Chair, many times)

Calculus Textbook and Syllabus Committee (Chair)

University Committees at Clarkson

Faculty Advisor East Meets West club

Common Book Committee (Chair)

Committee to Establish Remote Learning Program

Hiring Committee for Dean of School of Business

IBM Watson Challenge Event Committee

Arts and Science Graduate Committee

Honors Thesis Subcommittee

Honors Admissions Committee

Honors Council

Faculty Senate (served as secretary)

Curriculum and Policy Committee

University Graduate Committee

Computer Science Interdisciplinary Masters Program Committee (Chair)

Hiring Committee for CIS Satellite Positions

Hiring Committee for ECE Faculty Position

Hiring Committee for Digital Arts and Sciences Position

Committee to hire a new Assistant Director of Honors Program

Committee to Establish multidisciplinary Software Engineering Program

Committee to interview Dean of Admissions candidates