

Amy P. Felty

Curriculum Vitae

School of Information Technology and Engineering
University of Ottawa
800 King Edward Ave. Ottawa, Ontario K1N 6N5 Canada
afelty@site.uottawa.ca, www.site.uottawa.ca/~afelty/

Employment

- May 2007–. Professor, University of Ottawa, School of Information Technology and Engineering.
- January–April 2007. Visiting Researcher, McGill University, School of Computer Science.
- January 2000–April 2007. Associate Professor, University of Ottawa, School of Information Technology and Engineering.
- October 1991–December 1999. Research Scientist, Bell Labs, Lucent Technologies, Software Principles Research Department.
- Spring 1999. Adjunct Professor, Stevens Institute of Technology. Graduate Course in AI.
- September 1989–September 1991. Visiting Researcher, INRIA (National Institute for Research in Computer Science and Control), Rocquencourt and Sophia-Antipolis, France.

Education

- Ph.D. in Computer Science. University of Pennsylvania, August 1989. Advisor: Dale Miller.
- M.S.E. in Computer Science. University of Pennsylvania, December 1986. Advisor: Dale Miller.
- B.A. Colgate University, Hamilton, NY, May 1984. Major: Computer Science. Minor: Mathematics.

Honors and Awards

- Rubinoff Award for outstanding dissertation, University of Pennsylvania, May 1990.
- Faculty Nomination for AT&T Foundation Scholarship Program and IBM Research Fellowship, University of Pennsylvania.
- Colgate University: Phi Beta Kappa Honor Society; Charles A. Dana Scholar Award for academic achievement and leadership; First Place, Freshmen Math Prize Exam.

Invited Talks

Conferences Talks

- Conference of the European Union Types Program. Invited Talk, May 3, 2007.
- Federated Conference on Rewriting, Deduction, and Programming (RDP), Nara Japan. Keynote Lecture of joint meetings of International Conference on Typed Lambda Calculi and Applications (TLCA) and International Conference on Rewriting Techniques and Applications (RTA), April 21, 2005.
- 1997 Mexican Conference on Computer Science, Querétaro City, Mexico. Keynote Lecture in Logic and Computer Science Track, September 13, 1997.

Workshop Talks

- ACM SIGPLAN Workshop on Mathematically Structured Functional Programming, Baltimore, Maryland, September 25, 2010.
- ACM SIGPLAN Workshop on Mechanizing Metatheory, Baltimore, Maryland, September 25, 2010.
- Workshop on Declassification and Dynamic Security Policies, Dublin, Ireland, June 6, 2007.
- Dagstuhl Seminar on Mobility, Ubiquity, and Security, Dagstuhl, Germany, February 27, 2007.
- Construction and Analysis of Safe, Secure, and Interoperable Smart Cards (CASSIS), Marseille, France, March 11, 2004.
- Dagstuhl Seminar on Deduction and Infinite-State Model Checking, Dagstuhl, Germany, April 24, 2003.
- Annual Meeting of the Association for Symbolic Logic, Las Vegas, NV, USA. Special Session on Logic in Computer Science, June 3, 2002.
- Dagstuhl Seminar, Dependent Type Theory meets Practical Programming, Dagstuhl, Germany, August 20 and 24, 2001.
- Workshop on Proof-Carrying Code, Santa Barbara, CA, USA, June 29, 2000.
- Canadian Mathematical Society 1999 Winter Meeting, Montreal, Quebec, Canada, December 11, 1999.
- Dagstuhl Seminar on Deduction, Dagstuhl, Germany, March 23, 1995.
- Workshop on Proving Properties of Programming Languages, Sophia-Antipolis, France, September 21, 1993.
- Workshop on Formal Methods in Software Engineering: Automated Reasoning, Philadelphia, PA, USA, May 11, 1993.
- Workshop on Logic meets Computing: Specifications, Synthesis and Verification of Software, at INRIA 25th Anniversary Conference on Computer Science and Control, Paris, France, December 9, 1992.
- Metaprogramming Workshop, Bell Labs, Murray Hill, NJ, USA, June 3, 1992.
- Third International Workshop on Extensions to Logic Programming, Bologna, Italy, February 28, 1992.

- Second Annual Esprit Workshop on Logical Frameworks, Edinburgh, Scotland, May 24, 1991.
- Deductive Systems, Mathematisches Forschungsinstitut Oberwolfach, Germany, April 29, 1991.
- Second Workshop on Extensions of Logic Programming, Stockholm, Sweden, January 27, 1991.
- First Annual Esprit Workshop on Logical Frameworks, Sophia-Antipolis, France, May 10, 1990.
- First Workshop on Extensions of Logic Programming, University of Tübingen, Germany, December 9, 1989.
- Workshop on Proof, Cambridge, England, July 14, 1988.
- Metalanguage and Tools for Mechanizing Formal Deductive Theories, Pittsburgh, PA, USA, November 13, 1987.

Invited Tutorials

- Conference on Mathematical Foundations of Programming Semantics, Ottawa, Canada. One hour tutorial, May 9, 2010.
- Proofs-as-Programs Paradigm, Summer School, Eugene, OR, USA. Three hours of lecture. June 25 and 27, 2002.
- 1997 Mexican Conference on Computer Science, Querétaro City, Mexico. Six hour tutorial. September 11, 1997.
- Tenth Conference on Automated Deduction, Kaiserslautern, Germany. One hour tutorial. July 24, 1990.

Invited Colloquia and Seminar Talks

- McGill University, Computer Science Colloquium, March 9, 2007.
- McGill University, Logic and Computation Seminars, January 25 & April 20, 2007.
- Clarkson University, Computer Science Colloquium, April 13, 2006.
- University of Montreal, Keynote Talk, First Quebec Programming Languages Seminar, April 26, 2004.
- Wayne State University, Computer Science Seminar, December 11, 2001.
- University of Virginia, “Top Gun” Distinguished Lecture Series in Computer Science, October 8, 2001.
- Cornell University, Programming Languages Seminar, November 12, 1999.
- Colgate University, Science Division Colloquium, February 13, 1998.
- University of Iowa, November 21, 1997.
- INRIA, Sophia-Antipolis, France, November 2, 1995.
- University of Pennsylvania, Logic and Computation Seminar, January 23, 1995.
- Wesleyan University, May 4, 1993.
- Pennsylvania State University, February 25, 1993.

- Technical University of Munich, December 17, 1992.
- University of Cambridge, England, December 15, 1992.
- Carnegie Mellon University, Principles of Programming Seminar, January 10, 1992.
- INRIA, Rocquencourt, France, January 11, 1991.
- LISAN, Sophia-Antipolis, France, Seminar in Mathematics and Computer Science, June 1, 1990.
- IRISA, Rennes, France, February 9, 1990.
- INRIA, Rocquencourt, France, January 26, 1990.
- INRIA, Sophia-Antipolis, France, Seminar in Programming Languages and Semantics, October 12, 1989.
- Carnegie Mellon University, August 25, 1989.
- INRIA, Sophia-Antipolis, France, July 18, 1988.
- University of Edinburgh, July 11, 1988.
- University of Texas at Austin, March 2, 1988.

Conference and Workshop Committees

Program Chair

- Program Co-Chair, 3rd International Conference on Interactive Theorem Proving (ITP'12), Princeton, New Jersey, USA, August 2012.
- Program Co-Chair, 4th International Workshop on Logical Frameworks and Meta-languages: Theory and Practice (LFMTP'09), Montréal, Canada, August 2009.
- Program Chair, 7th International Symposium on Principles and Practice of Declarative Programming (PPDP'05), Lisbon, Portugal, July 2005.
- Program Chair, 1st International Workshop on Logical Frameworks and Meta-languages (LFM'99), Paris, France, September 1999.

Program Committee Member

- ACM Symposium on Applied Computing, Software Verification and Testing Track (SAC-SVT'12), Riva del Garda (Trento), Italy, March 2012.
- 2nd International Conference on Interactive Theorem Proving (ITP'11), Nijmegen, The Netherlands, August 2011.
- Workshop on Proof eXchange for Theorem Proving (PxTP'11), August, 2011.
- Workshop on Proof Search in Axiomatic Theories and Type Theories (PSATTT'11), August, 2011.
- 13th International Conference on Principles and Practice of Declarative Programming (PPDP'11), Odense, Denmark, July 2011.
- ACM Symposium on Applied Computing, Software Verification and Testing Track (SAC-SVT'11), TaiChung, Taiwan, March 2011.
- 25th International IEEE Symposium on Logic in Computer Science (LICS'10), Edinburgh, Scotland, July 2010.

- 4th International Workshop on Logical Frameworks and Meta-languages: Theory and Practice (LFMTP'10), Edinburgh, Scotland, July 2010.
- ACM Symposium on Applied Computing, Software Verification and Testing Track (SAC-SVT'09), Waikiki Beach, Hawaii, USA, March 2009.
- 17th EACSL Annual Conference on Computer Science Logic (CSL'08), Bertinoro, Italy, September 2008.
- International Workshop on Security Issues in Concurrency (SecCo'08), Toronto, Canada, August 2008.
- International Workshop on Formal Techniques for Java-like Programs (FTfJP'08), Paphos, Cyprus, July 2008.
- 5th ACM Workshop on Formal Methods in Security Engineering: From Specifications to Code (FMSE'07), George Mason University, USA, November 2007.
- 20th International Conference on Theorem Proving in Higher Order Logics (TPHOLs'07), Kaiserslautern, Germany, September 2007.
- 21st International IEEE Symposium on Logic in Computer Science (LICS'06), Seattle, Washington, USA, August, 2006.
- 3rd International Joint Conference on Automated Reasoning (IJCAR'06), Seattle, Washington, USA, August, 2006.
- International Workshop on Proof-Carrying Code (PCC 2006), Seattle, Washington, USA, August, 2006.
- 3rd International Workshop on MEchanized Reasoning about Languages with variable bINDing (MERLIN'05), Tallinn, Estonia, September, 2005.
- 18th International Conference on Theorem Proving in Higher Order Logics (TPHOLs'05), Oxford, UK, August 2005.
- 20th International Conference on Automated Deduction (CADE'05), Tallinn, Estonia, July 2005.
- 14th International Conference on Compiler Construction (CC'05), Edinburgh, Scotland, April 2005.
- 17th International Conference on Theorem Proving in Higher Order Logics (TPHOLs'04), Park City, UT, USA, September 2004.
- 2nd International Joint Conference on Automated Reasoning (IJCAR'04), Cork, Ireland, July 2004.
- 4th International Workshop on Logical Frameworks and Meta-languages (LFM'04), Cork, Ireland, July 2004.
- 5th International Workshop on Strategies in Automated Deduction (STRATEGIES'04), Cork, Ireland, July 2004.
- 10th International Conference on Logic for Programming Artificial Intelligence and Reasoning (LPAR'03), Almaty, Kazakhstan, September 2003.
- 16th International Conference on Theorem Proving in Higher Order Logics (TPHOLs'03), Rome, Italy, September 2003.
- 2003 ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI'03), San Diego, CA, USA, June 2003.

- 30th ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL'03), January 2003.
- 4th International Conference on Principles and Practice of Declarative Programming (PPDP'02), Pittsburgh, PA, USA, October 2002.
- 3rd International Workshop on Logical Frameworks and Meta-languages (LFM'02), Copenhagen, Denmark, July 2002.
- 1st International Workshop on MEchanized Reasoning about Languages with variable bINDing (MERLIN'01), Siena, Italy, June 2001.
- 1st International Conference on Computational Logic (CL'00), Theory and Extensions stream, London, England, July 2000.
- 2nd International Workshop on Logical Frameworks and Meta-languages (LFM'00), Santa Barbara, CA, USA, June 2000.
- 9th International Conference on Analytic Tableaux and Related Methods (TABLEAUX'00), St. Andrews, Scotland, July 2000.
- 8th International Conference on Analytic Tableaux and Related Methods (TABLEAUX'99), Saratoga Springs, NY, USA, June 1999.
- 11th International Conference on Theorem Proving in Higher Order Logics (TPHOLs'98), Canberra, Australia, September 1998.
- 3rd International Workshop on Higher-Order Algebra (HOA'97), Southampton, UK, September 1997.
- 10th International Conference on Theorem Proving in Higher Order Logics (TPHOLs'97), Murray Hill, NJ, USA, August 1997.
- 12th International IEEE Symposium on Logic in Computer Science (LICS'97), Warsaw, Poland, June 1997.
- 13th International Conference on Automated Deduction (CADE'96), New Brunswick, NJ, USA, July 1996.
- 5th International Workshop on Extensions of Logic Programming (ELP'96), Leipzig, Germany, March 1996.

Conference Organization

- Member, Committee on Logic in North America, Association for Symbolic Logic (ASL), January 2008–
- International Conference on Automated Deduction (CADE), Trustee and Secretary: May 2004–May 2007, Elected Trustee: October 2007–
- Conference Co-Chair, International IEEE Symposium on Logic in Computer Science (LICS'03), Ottawa, Canada, June 2003.
- Organizing Committee Member, International IEEE Symposium on Logic in Computer Science (LICS), 1993–1997 and 2003–2006.
- Workshop Chair, Colloquium on Principles, Logics, and Implementations of High-Level Programming Languages (PLI'00), Montreal, Quebec, Canada, September 2000.
- Organizing Committee Member, 10th International Conference on Theorem Proving in Higher-Order Logics (TPHOLs'97), Murray Hill, NJ, USA, August 1997.

- Conference Chair, 13th International Conference on Automated Deduction (CADE'96), New Brunswick, NJ, USA, July 1996.
- Organizing Committee Member, First International Federated Logic Conference (FLoC'96), New Brunswick, NJ, USA, July 1996.
- Publicity Co-Chair, International IEEE Symposium on Logic in Computer Science (LICS), 1993–1996.

Editorial Duties

- Editorial Board, *Journal of Applied Logic*, Elsevier, 2005–
- Editor, *Journal of Automated Reasoning*, Kluwer Academic Publishers, Special Issue on Proof-Carrying Code, appeared 2004.
- Co-Editor, *Journal of Automated Reasoning*, Kluwer Academic Publishers, Special Issue on Logical Frameworks and Metalanguages, appeared July 2001.
- Area Editor, Theorem Proving area, *Association of Logic Programming Newsletter*, January 2001–May 2005.

Other Professional Activities

- Member, Natural Sciences and Engineering Research Council of Canada (NSERC) Computer Science Evaluation Committee, 2010–
- Co-founder, Devera Logic Inc., www.deveralogic.com, 2007–
- Member of Scientific Advisory Board, Mobius (Mobility, Ubiquity, and Security) Project, European Commission Project, September 2005–January 2010.
- Secretary-Treasurer of the Association of Automated Reasoning, May 2004–May 2007.
- Consultant, Communications Security Establishment, Ottawa, Canada, December 2002–May 2003.
- Invited Participant, US Infosec Research Council's Malicious Code Science and Technology Study Group, to develop a national research agenda to address the malicious code problem, January 2000.
- Member, Industry Advisory Board for Monmouth University's Software Engineering Department. February 1998–December 1999.
- Coordinator, Bell Labs Technical Women's Group 1994–1996.
- Co-Coordinator, Bell Labs Seminar on Interactive Theorem Proving, 1991 – 1992.
- National Science Foundation (NSF) Review Panels, Washington, DC, USA. April 2004, February 1999, December 1997, and April 1996. Referee for numerous other proposals.
- Journal Referee: *Comptes Rendus de l'Académie des Sciences (France)*, *Computer Journal*, *Computer Languages*, *Formal Methods in System Design*, *Information and Computation*, *Journal of the ACM*, *Journal of Automated Reasoning*, *Journal of Functional Programming*, *Journal of Logic and Computation*, *Journal of Logic Programming*, *New Generation Computing*, *Theoretical Computer Science*, *ACM Transactions on Programming Languages and Systems*.

- Referee for Numerous Conferences and Workshops in theorem proving, automated deduction, computer-aided verification, logic programming, logical foundations of computer science, and programming languages.

Student and Post-doc Supervision

Post-doc Supervision

- Michael Warren, Ph.D. from Carnegie Mellon University. Co-supervised with Pieter Hofstra and Philip Scott, September 2008–August 2009.
- Joachim de Lataillade, Ph.D. from Université Paris 7. Co-supervised with Pieter Hofstra and Philip Scott, September 2007–August 2008.
- Guillaume Dufay, Ph.D. from Université de Nice Sophia Antipolis. Research on formal program verification applied to privacy-oriented data-mining, co-supervised with Stan Matwin, June 2004–August 2005.
- Venanzio Capretta, Ph.D. from Katholieke Universiteit Nijmegen. Co-supervised with Philip Scott and Peter Selinger, November 2003–August 2006.
- Eun-Young Lee, Ph.D. from Princeton University. Research on requirements-driven development of distributed applications, January – December 2004.
- Laurent Théry, Post-doc at Bell Labs. Ph.D. from Université Paris 7, France. Research on temporal logic theorem proving, September 1993 – September 1994.

Ph.D. Student Supervision

- Bahman Sistany, Ottawa-Carleton Institute for Computer Science, *Code Obfuscation as Abstract Interpretation*, September 2006–
- Alan Martin, Ottawa-Carleton Institute of Mathematics and Statistics, *Reasoning Using Higher-Order Abstract Syntax in a Higher-Order Logic Proof Environment: Improvements to Hybrid and a Case Study*, November 2010.
- Franck Binard, Ottawa-Carleton Institute for Computer Science, *Abstraction-Based Genetic Programming*, April 2009.

Master's Student Supervision

- Jiangong Weng, Ottawa-Carleton Institute for Computer Science, *Automating Proofs for Proof-Carrying Code*, expected December 2011.
- Margi Fumtiwala, Ottawa-Carleton Institute for Computer Science, master's project on analysis of policy specification languages, expected December 2011.
- Ian Sharkey, Ottawa-Carleton Institute for Computer Science, *Probabilistic Proof-Carrying Code*, co-supervised with Philip Scott, expected September 2011.
- Michel St.-Martin, Ottawa-Carleton Institute of Mathematics and Statistics, *Analysis and Formal Verification of Security Policies*, expected September 2011.
- Riley August, Ottawa-Carleton Institute for Computer Science, *Applying Genetic Programming to Scripted Mobile Robotics*, December 2009.

- Zhiping Duan, M.C.S., Ottawa-Carleton Institute for Computer Science, *Proof Search Algorithms for Detecting Interactions in Telecommunication Features*, August 2003.
- Franck Binard, M.C.S., Ottawa-Carleton Institute for Computer Science, *Proving Properties of Programs Using Automatically Generated Models*, June 2002.
- Jamil Hreich, M.C.S., Ottawa-Carleton Institute for Computer Science, master's project on temporal logic theorem proving and its application to the feature interaction problem, December 2001.

External Ph.D. Thesis Committee Member

- Andrei Popescu, University of Illinois at Urbana-Champaign, USA. *A Framework for the Specification and Analysis of Systems Featuring Variable Bindings and Concurrent Behavior*, expected 2010.
- Perry R. James, Concordia University, Canada. *Enhancements to JML and its Extended Static Checking Technology*, July 2009.
- Shoham Ben-David, University of Waterloo, Canada. *Applications of Description Logic and Causality in Model Checking*, June 2009.
- Jian Xu, McMaster University, Canada. *Mei—a Module System for Mechanized Mathematics Systems*, December 2007.
- Kedar Swadi, Princeton University, USA. *Typed Machine Language*, July 2003.
- Alberto Ciaffaglione, Institut National Polytechnique de Lorraine, France. *Raisonnement certifié sur les nombres réels et les objets en théorie des types co-inductifs*, May 2003.
- Delphine Terrasse, rapporteur, L'École Nationale des Ponts et Chaussées, Paris, France. *Vers un Environnement d'Aide au Développement de Preuves en Sémantique Naturelle*, October 1995.
- Chuck Liang, University of Pennsylvania. *Object-Level Substitution, Unification, and Generalization in Meta-Logic*, September 1995.
- Laurent Théry, examinateur, Université Paris 7, France. *Une Méthode Distribuée de Création d'Interfaces et ses Applications aux Démonstrateurs de Théorèmes*, February 1993.

Bell Labs Summer Project Supervision

- Abhik Roychoudhury, Bell Labs Summer Intern, Ph.D. Student from SUNY Stonybrook. June–August 1998.
- Hoa-Chi Wong, Bell Labs Summer Intern, Ph.D. Student from Carnegie Mellon University. June–August 1993.
- Jill Seaman, Bell Labs Summer Intern, Ph.D. Student from Pennsylvania State University. June–August 1992.
- 2 undergraduate students, Bell Labs Summer Program for Minorities and Women, summers 1993 and 1998.

Teaching

Graduate Courses

- CSI 5110 (95.577) Principles of Formal Software Development, Fall 2011, Fall 2010, Fall 2009, Fall 2008, Fall 2007, Fall 2006, Fall 2005, Winter 2005, Fall 2002, Winter 2002, Winter 2001.

Undergraduate Courses

- CSI 4125 Theory of Programming Languages, Winter 2008, Winter 2006, Winter 2005.
- CSI 3104 Introduction to Formal Languages, Winter 2012, Winter 2003.
- CSI 3504 Introduction aux langages formels, Hiver 2003, Hiver 2000.
- CSI 2120 Programming Paradigms, Winter 2011.
- CSI 2520 Paradigmes de programmation, Hiver 2012.
- SEG 2105 Introduction to Software Engineering, Winter 2010, Winter 2009, Fall 2007, Fall 2006.
- ITI 1120 Introduction to Computing I, Winter 2008.
- CSI 1100 Introduction to Computer Science I, Fall 2002, Fall 2001 (3 sections), Fall 2000 (2 sections).

Combined Undergraduate/Graduate Courses

- Foundations of AI Theory with Applications, Stevens Institute of Technology, Hoboken, NJ, USA, Spring 1999.

Research Funding

- Co-Investigator on “Policy Definition and Analysis Software—Software Development and GUI,” FedDev Ontario Applied Research and Commercialization Initiative, Co-Investigators: Stan Matwin (Co-Principal), Ed Strange (Co-Principal), Bernard Stepien, \$50,000, May–August 2011.
- Co-Principal Investigator on “Access Management and Control Technology,” OTTN (Ontario Technology Transfer Network) Proof of Principle Program, Co-Investigator: Stan Matwin, \$35,000, January–March 2010.
- Principal Investigator on “Machine-Assisted Theorem Proving: Proof Techniques and Applications,” NSERC (Natural Sciences and Engineering Research Council of Canada) Discovery Grants—Individual, \$35,000 yearly for 5 years, April 2009–March 2014.
- Co-Investigator on “Correct Logic Inc. Market Readiness,” (Ontario Centres of Excellence) Market Readiness Program, Co-Investigator: Stan Matwin (Principal), \$38,000, July–September 2007.
- Co-Investigator on “Enterprise Solutions for Verification of Policy Compliance,” CITO (Communications and Information Technology Ontario) Tech Readiness Program, Co-Investigator: Stan Matwin (Principal), \$25,500, October 2005–January 2006.

- Co-Investigator on “Application-Centric Checkable Enablement of Privacy and Trust,” NSERC (Natural Sciences and Engineering Research Council of Canada) Idea to Innovation (I2I) Grant, Co-Investigator: Stan Matwin (Principal), \$62,500 yearly for 2 years, November 2004–March 2006.
- Principal Investigator on “Proving Safety and Privacy Properties of Software,” NSERC (Natural Sciences and Engineering Research Council of Canada) Discovery Grants—Individual, \$39,700 yearly for 5 years, April 2004–March 2009.
- Principal Investigator on “Software Correctness and Safety,” CFI (Canada Foundation for Innovation) Infrastructure Operating Fund, \$4,800 yearly for 5 years, April 2004–March 2009.
- Co-Investigator on “Contracts and Conflicts in Electronic Commerce,” ORNEC (Ontario Research Network for Electronic Commerce), Co-Investigators: Stan Matwin (Principal), Gregory Kersten, Luigi Logrippo, \$39,000, January 2004–January 2005.
- Co-Investigator on “Privacy-Oriented Data Mining,” CITO (Communications and Information Technology Ontario) Tech Readiness Program, Co-Investigator: Stan Matwin (Principal), \$25,000, January 2004–April 2004.
- Co-Investigator on “A Requirements-Driven Development of Distributed Applications,” NSERC (Natural Sciences and Engineering Research Council of Canada) Strategic Project, Co-Investigators: Daniel Amyot, Gregor Boehmann (Principal), Luigi Logrippo, Robert Probert, Stéphane Somé, \$180,590 yearly for 3 years, October 2002–September 2005.
- Principal Investigator on “Software Correctness and Safety,” CFI (Canada Foundation for Innovation) New Opportunities Fund, \$200,499 total over four years, January 2002–June 2005.
- Principal Investigator on “A Proof Development Environment for Proof-Carrying Code,” NSERC (Natural Sciences and Engineering Research Council of Canada) Research Grants—Individual, \$28,000 yearly for 4 years, April 2000–March 2004.
- Principal Investigator, CITO (Communications and Information Technology Ontario) Human Resources Development Fund, \$10,000 for one term, January 2000–March 2000.
- Principal Investigator on “An Application of Theorem Proving to Proof-Carrying Code,” University Research Fund, \$10,000, January–December 2000.
- Principal Investigator on “An Application of Theorem Proving to Proof-Carrying Code,” Faculty of Engineering Fund, \$10,000, January – December 2000.
- Principal Investigator on “Lemma Support for Proof-Carrying Code,” SITE Development Fund, \$5,000, January–December 2000.

Academic Service Activities

- Member, Faculty Teaching Personnel Committee, Faculty of Engineering, July 2010–.
- Coordinator, Computer Science Fourth-Year Undergraduate Project, July 2007–.
- Search Committee, Department of Mathematics and Statistics Chair, Fall 2006, Fall 2001.
- Ottawa-Carleton Institute for Computer Science (OCICS) Graduate Admissions Committee, January 2005–December 2006.
- SITE Teaching Personnel Committee, January–June 2003.

- SITE Appointments Committee, July 2001–June 2002, January–June 2003.
- CSI Curriculum Committee, January–June 2000, January 2001–June 2003, (Committee Chair, July 2001–June 2003).
- Faculty Curriculum Committee, July 2001–June 2003.
- SITE Library Committee, July 2000–June 2003.
- Faculty Council, January–June 2001.
- Served on Ph.D. thesis committees for 8 Computer Science students.
- Served on Master’s thesis committees for 9 Computer Science students.
- Supervised undergraduate projects for 10 Computer Science students.

Publications

Papers in Refereed Journals and Reviewed Book Chapters

- Amy Felty and Alberto Momigliano. Hybrid: A Definitional Two Level Approach to Reasoning with Higher-Order Abstract Syntax. *Journal of Automated Reasoning*, 63 pp., to appear. Online version available at Springer Online First (<http://www.springerlink.com/content/92q14113413462t0/>), August 2010.
- Amy P. Felty. Tutorial Examples of the Semantic Approach to Foundational Proof-Carrying Code. *Fundamenta Informaticae*, 7(4):303–330, 2007.
- Andrew W. Appel and Amy P. Felty. Polymorphic Lemmas and Definitions in λ Prolog and Twelf. *Theory and Practice of Logic Programming*, 4(1&2):1–39, January & March 2004.
- Andrew W. Appel and Amy P. Felty. Dependent Types Ensure Partial Correctness of Theorem Provers. *Journal of Functional Programming*, 14(1):3–19, January 2004.
- Amy P. Felty and Kedar S. Namjoshi. Feature Specification and Automated Conflict Detection. *ACM Transactions on Software Engineering and Methodology*, 12(1):3–27, January 2003.
- Amy P. Felty. The Calculus of Constructions as a Framework for Proof Search with Set Variable Instantiation. *Theoretical Computer Science*, 232(1–2):187–229, February 2000.
- Amy Felty and Frank Stomp. Cache Coherency in SCI: Specification and a Sketch of Correctness. *Formal Aspects of Computing*, 11(5):475–497, 1999.
- Amy Felty and Frank Stomp. Specification and Correctness of Cache Coherency in SCI. *Formal Aspects of Computing, Electronic Supplement*, 3:1–31, 1999.
- Amy Felty and Laurent Théry. Interactive Theorem Proving with Temporal Logic. *Journal of Symbolic Computation*, 23(4):367–397, April 1997.
- Amy Felty. Implementing Tactics and Tacticals in a Higher-Order Logic Programming Language. *Journal of Automated Reasoning*, 11(1):43–81, August 1993.
- Amy Felty. Encoding Dependent Types in an Intuitionistic Logic. In Gérard Huet and Gordon Plotkin, editors, *Logical Frameworks*, pages 215–251. Cambridge University Press, 1991.

Papers in Refereed Conference Proceedings

- Alan J. Martin, and Amy P. Felty. An Improved Implementation and Abstract Interface for Hybrid. To appear in *Proceedings of the Sixth International Workshop on Logical Frameworks and Meta-Languages: Theory and Practice (LFMTP)*, 15 pp., August 2011.
- Bernard Stepien, Stan Matwin, and Amy Felty. Advantages of a Non-Technical XACML Notation in Role-Based Models. In *9th Annual Conference on Privacy, Security, and Trust*, 8 pp., IEEE, July 2011,
- Jiangong Weng and Amy Felty. An Implementation of a Verification Condition Generator for Foundational Proof-Carrying Code. In *9th Annual Conference on Privacy, Security, and Trust*, 8 pp., IEEE, July 2011,
- Amy Felty and Brigitte Pientka. Reasoning with Higher-Order Abstract Syntax and Contexts: A Comparison. In *International Conference on Interactive Theorem Proving*, pp. 227–242. Springer Lecture Notes in Computer Science, July 2010.
- Bernard Stepien, Stan Matwin, and Amy Felty. Strategies for Reducing Risks of Inconsistencies in Access Control Policies. In *5th International Conference on Availability, Reliability, and Security*, pp. 140–147. IEEE Computer Society, February 2010.
- Venanzio Capretta and Amy P. Felty. Higher-Order Abstract Syntax in Type Theory. In *Logic Colloquium '06*, ASL Lecture Notes in Logic, 32, pp. 83–92. Cambridge University Press, October 2009.
- Amy Felty and Alberto Momigliano. Reasoning with Hypothetical Judgments and Open Terms in Hybrid. In *11th International ACM SIGPLAN Symposium on Principles and Practice of Declarative Programming*, pp. 83–92. ACM Press, September 2009.
- Bernard Stepien, Amy Felty, and Stan Matwin. A Non-technical User-Oriented Display Notation for XACML Conditions. In *E-Technologies: Innovation in an Open World, Proceedings of the 4th International MCETECH Conference*, pp. 53–64. Springer Lecture Notes in Business Information Processing, May 2009.
- Franck Binard and Amy Felty. Genetic Programming with Polymorphic Types and Higher-Order Functions. In *Proceedings of the Tenth Genetic and Evolutionary Computation Conference*, pp. 1187–1194. ACM Press, July 2008.
- Alberto Momigliano, Alan J. Martin, and Amy P. Felty. Two-level Hybrid: A System for Reasoning Using Higher-Order Abstract Syntax. In *Proceedings of the Second International Workshop on Logical Frameworks and Meta-Languages: Theory and Practice (LFMTP 2007)*, in *Electronic Notes in Theoretical Computer Science*, 196:85–93, January 2008.
- Venanzio Capretta, Bernard Stepien, Amy Felty, and Stan Matwin. Formal Correctness of Conflict Detection for Firewalls. In *ACM Workshop on Formal Methods in Security Engineering*, pages 22–30, November 2007.
- Venanzio Capretta and Amy Felty. Combining de Bruijn Indices and Higher-Order Abstract Syntax in Coq. In *Types for Proofs and Programs, International Workshop, TYPES 2006, Revised Selected Papers*, pages 63–77. Springer Lecture Notes in Computer Science, 2007.
- Guillaume Dufay, Amy Felty, and Stan Matwin. Privacy-Sensitive Information Flow with JML. In *Twentieth International Conference on Automated Deduction*, pages 116–130. Springer Lecture Notes in Computer Science, July 2005.

- Stan Matwin, Amy Felty, István Hernádvölgyi, and Venanzio Capretta’. Privacy in Data Mining Using Formal Methods. In *Seventh International Conference on Typed Lambda Calculi and Applications*, pages 278–292. Springer Lecture Notes in Computer Science, April 2005.
- Amy Felty and Stan Matwin. Privacy-Oriented Data Mining by Proof Checking, In *Sixth European Conference on Principles and Practice of Knowledge Discovery in Databases*, pages 138–149. Springer Lecture Notes in Computer Science, August 2002.
- Amy P. Felty. Two-Level Meta-Reasoning in Coq. In *Fifteenth International Conference on Theorem Proving in Higher Order Logics*, pages 198–213. Springer Lecture Notes in Computer Science, August 2002.
- Amy P. Felty and Kedar S. Namjoshi. Feature Specification and Automatic Conflict Detection. In M. Calder and E. Magill, editors, *Feature Interactions in Telecommunications and Software Systems VI*, pages 179–192. IOS Press, 2000.
- Andrew W. Appel and Amy P. Felty. A Semantic Model of Types and Machine Instructions for Proof-Carrying Code. In *The 27th Annual ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages*, pages 243–253, January 2000.
- Andrew W. Appel and Amy P. Felty. Lightweight Lemmas in λ Prolog. In *International Conference on Logic Programming*, pages 411–425, November 1999.
- Amy P. Felty, Douglas J. Howe, and Abhik Roychoudhury. Formal Metatheory using Implicit Syntax, and an Application to Data Abstraction for Asynchronous Systems. In *Sixteenth International Conference on Automated Deduction*, pages 237–251. Springer Lecture Notes in Computer Science, July 1999.
- Amy P. Felty, Douglas J. Howe, and Frank A. Stomp. Protocol Verification in Nuprl. In *Tenth International Conference on Computer Aided Verification*, pages 428–439. Springer Lecture Notes in Computer Science, June 1998.
- Amy P. Felty and Douglas J. Howe. Hybrid Interactive Theorem Proving using Nuprl and HOL. In *Fourteenth International Conference on Automated Deduction*, pages 351–365. Springer Lecture Notes in Computer Science, July 1997.
- Amy Felty. Proof Search with Set Variable Instantiation in the Calculus of Constructions. In *Thirteenth International Conference on Automated Deduction*, pages 658–672. Springer Lecture Notes in Computer Science, July 1996.
- Amy Felty and Frank Stomp. A Correctness Proof of a Cache Coherence Protocol. In *Eleventh Annual Conference on Computer Assurance*, pages 128–141, June 1996.
- Ramesh Bharadwaj, Amy Felty, and Frank Stomp. Formalizing Inductive Proofs of Network Algorithms. In *International Asian Computing Conference*. Springer Lecture Notes in Computer Science, December 1995.
- Joëlle Despeyroux, Amy Felty, and André Hirschowitz. Higher-Order Abstract Syntax in Coq. In *Second International Conference on Typed Lambda Calculi and Applications*, pages 124–138. Springer Lecture Notes in Computer Science, April 1995.
- Amy Felty and Douglas Howe. Generalization and Reuse of Tactic Proofs. In *Fifth International Conference on Logic Programming and Automated Reasoning*, pages 1–15. Springer Lecture Notes in Computer Science, July 1994.
- Amy Felty and Douglas Howe. Tactic Theorem Proving with Refinement-Tree Proofs and Metavariables. In *Twelfth International Conference on Automated Deduction*, pages 605–619. Springer Lecture Notes in Computer Science, June 1994.

- Amy Felty. Encoding the Calculus of Constructions in a Higher-Order Logic. In *Eighth Annual IEEE Symposium on Logic in Computer Science*, pages 233–244, June 1993.
- Amy Felty. A Logic Programming Approach to Implementing Higher-Order Term Rewriting. In *Second International Workshop on Extensions of Logic Programming*, pages 135–161. Springer Lecture Notes in Computer Science, 1992.
- Amy Felty. A Logic Program for Transforming Sequent Proofs to Natural Deduction Proofs. In *First International Workshop on Extensions of Logic Programming*, pages 157–178. Springer Lecture Notes in Computer Science, 1991.
- Amy Felty and Dale Miller. Encoding a Dependent-Type λ -Calculus in a Logic Programming Language. In *Tenth International Conference on Automated Deduction*, pages 221–235. Springer Lecture Notes in Computer Science, July 1990.
- Amy Felty and Greg Hager. Explaining Modal Logic Proofs. In *IEEE International Conference on Systems, Man, and Cybernetics*, pages 177–180, August 1988.
- Amy Felty and Dale Miller. Specifying Theorem Provers in a Higher-Order Logic Programming Language. In *Ninth International Conference on Automated Deduction*, pages 61–80. Springer Lecture Notes in Computer Science, May 1988.
- Amy Felty, Elsa Gunter, John Hannan, Dale Miller, Gopalan Nadathur, and Andre Scedrov. Lambda Prolog: An Extended Logic Programming Language. In *Ninth International Conference on Automated Deduction*, pages 754–755. Springer Lecture Notes in Computer Science, May 1988.
- Dale Miller and Amy Felty. An Integration of Resolution and Natural Deduction Theorem Proving. In *Fifth National Conference on Artificial Intelligence*, pages 198–202. Morgan Kaufmann, August 1986.

Invited Contributions

- Amy P. Felty. A Tutorial Example of the Semantic Approach to Foundational Proof-Carrying Code. In *Sixteenth International Conference on Rewriting Techniques and Applications*, pages 394–406. Springer Lecture Notes in Computer Science, April 2005.

Volumes Edited

- James Cheney and Amy Felty, editors. *4th International Workshop on Logical Frameworks and Metalanguages: Theory and Practice*. ACM International Conference Proceeding Series, August 2009.
- Amy Felty, editor. *Seventh ACM SIGPLAN Symposium on Principles and Practice of Declarative Programming*. ACM Press, July 2005.
- Amy Felty. Preface, Special Issue of *Journal of Automated Reasoning* on Proof-Carrying Code and Other Applications to Software Safety and Reliability, 31(1):3–4, 2003.
- David Basin and Amy Felty. Current Trends in Logical Frameworks and Metalanguages. *Journal of Automated Reasoning*, 27(1):1–2, July 2001. Special Issue Introduction.
- Elsa L. Gunter and Amy Felty, editors. *Tenth International Conference on Theorem Proving in Higher Order Logics*. Springer Lecture Notes in Computer Science, August 1997.

Papers in Refereed Workshop Proceedings

- Franck Binard and Amy Felty, An Abstraction-Based Genetic Programming System. In *Genetic and Evolutionary Computation Conference: Late Breaking Papers*, July 2007.
- Amy Felty. Temporal Logic Theorem Proving and its Application to the Feature Interaction Problem. In Enrico Giunchiglia and Fabio Massacci, editors, *Issues in the Design and Experimental Evaluation of Systems for Modal and Temporal Logics*, pages 19–28, University of Siena, Technical Report DII 14/01, June 2001.
- Amy Felty. Defining Object-Level Parsers in λ Prolog. In Dale Miller, editor, *Proceedings of the Workshop on the λ Prolog Programming Language*, University of Pennsylvania, Technical Report MS-CIS-92-86, November 1992.
- Amy Felty. Higher-Order Conditional Rewriting in the L_λ Logic Programming Language. In Evelina Lamma and Paola Mello, editors, *Third International Workshop on Extensions to Logic Programming: Preprints of the Proceedings*, February 1992.
- Amy Felty and Dale Miller. A Meta Language for Type Checking and Inference. Presented at the 1989 Workshop on Programming Logic, Bålstad, Sweden, May 1989.

Informal Proceedings Edited

- Adriana Compagnoni and Amy Felty, editors, Proceedings of PCC 2006: International Workshop on Proof-Carrying Code, 2006, 17 pp.
- David Basin and Amy Felty, editors, Proceedings of the Workshop on Logical Frameworks and Meta-languages, 1999, 115 pp.

Other Papers

- Amy Felty. Program Verification, Non-Interference, and Declassification Applied to Privacy in Data Mining, abstract of invited workshop presentation. In *Dagstuhl Seminar 07091: Mobility, Ubiquity and Security*, pages 5–6, February 2007. (<http://drops.dagstuhl.de/opus/volltexte/2007/1102>).
- Amy P. Felty. A Tutorial Example of the Semantic Approach to Foundational Proof-Carrying Code: Abstract of Invited Talk. In *Seventh International Conference on Typed Lambda Calculi and Applications*, page 10. Springer Lecture Notes in Computer Science, April 2005.
- Zhiping Duan and Amy Felty. Proof Search Algorithms for Detecting Interactions in Telecommunications Features. Presented at *Seventh International Workshop on Feature Interactions in Telecommunications and Software Systems*, June 2003.
- Amy Felty. A Proof Search Procedure for Detecting Interactions in Telecommunications Features, abstract of invited workshop presentation. In *Dagstuhl Seminar 03171: Deduction and Infinite-State Model Checking*, April 2003.
- Amy Felty. An Introduction to Proof-Carrying Code, abstract of invited workshop presentation. In *The Bulletin of Symbolic Logic*, 9(1):57, March 2003.
- Amy Felty. Interactive Theorem Proving in Twelf. In *The Association of Logic Programming Newsletter*, 15(3), August 2002.

- Amy Felty. Polymorphic Lemmas and Definitions in λ Prolog and Twelf, abstract of invited workshop presentation. In *Dagstuhl Seminar 01341: Dependent Type Theory Meets Practical Programming*, August 2001.
- Amy Felty. A Semantic Model of Types for Proof-Carrying Code, abstract of invited presentation. In *Canadian Mathematical Society 1999 Winter Meeting*, page 77, December 1999.
- Andrew W. Appel and Amy P. Felty. Lightweight Lemmas in λ Prolog: Extended version. Technical Report CS-TR-607-99, Princeton University, October 1999.
- Jill Seaman and Amy Felty. Proving Properties about a Lazy Functional Language with the Coq Proof Development System. Technical Report, January 1994.
- Gilles Dowek, Amy Felty, Hugo Herbelin, Gérard Huet, Chet Murthy, Christine Parent, Christine Paulin-Mohring, and Benjamin Werner. The Coq Proof Assistant User's Guide. Technical Report RT 0154, INRIA, December 1993.
- Amy Felty. Definite Clause Grammars for Parsing Higher-Order Syntax. Poster abstract in *International Symposium on Logic Programming*, page 668, October 1993. Extended Version available as Technical Report, November 1993.
- Jill Seaman and Amy Felty. Formal Verification of Properties of an Operational Semantics. Technical Report, April 1993.
- Amy Felty, Elsa Gunter, Dale Miller, and Frank Pfenning. Tutorial on λ -prolog. In *Tenth International Conference on Automated Deduction*, page 682. Springer Lecture Notes in Computer Science, July 1990.
- Amy Felty. *Specifying and Implementing Theorem Provers in a Higher-Order Logic Programming Language*. Ph.D. thesis, University of Pennsylvania, Technical Report MS-CIS-89-53, August 1989.
- Amy Felty and Dale Miller. Proof Explanation and Revision. Technical Report MS-CIS-88-17, University of Pennsylvania, March 1987.
- Amy Felty. Using Extended Tactics to do Proof Transformations. Master's thesis, University of Pennsylvania, Technical Report MS-CIS-86-89, December 1986.

Patents

- Amy Felty, Douglas Howe, and Abhik Roychoudhury. Method and Apparatus for Generating a Verified Algorithm for Transforming a Program from a First Form to a Second Form, United States Patent No. 6,343,372, January 2002.

Patents Submitted

- Amy Felty, Venanzio Capretta, Bernard Stepien, and Stan Matwin. Control Access Rule Conflict Detection, October 2008.