

Ian Alistair Mason

Education:

1981 – 1986: Stanford University, Stanford, California. Ph.D in the Special Program in Logic, Philosophy of Language and the Philosophy of Science under the supervision of Professor Solomon Feferman.

1976 – 1980: The Australian National University, Canberra, Australia. Bachelor of Arts with First Class Honours in Pure Mathematics under the supervision of Professor John Hutchinson.

Experience:

August 2007 – present: Consulting Engineer, SRI International, Menlo Park, California, U.S.A.

August 2005 – present: Senior Application Engineer at Loyalty Ventures Inc. Palo Alto, California, U.S.A.

U.S. Summer 2005: International Fellow, SRI International, Menlo Park, California, U.S.A.

U.S. Summer 2004: International Fellow, SRI International, Menlo Park, California, U.S.A.

U.S. Summer & Fall 2003: International Fellow, SRI International, Menlo Park, California, U.S.A.

2001 – July 2005: Consulting Software Engineer, Loyalty Ventures Inc. Palo Alto, California, U.S.A.

2000 – July 2006: Senior Lecturer, School of Mathematical & Computer Sciences, Division of Computer Science, University of New England, (Resigned 31/7/2006).

1996 – 2000: Lecturer, School of Mathematical & Computer Sciences, Division of Computer Science, University of New England, (Tenured 1999).

U.S. Summer & Fall 1999: Java Course Designer, Education Program for Gifted Youth, Ventura Hall, Stanford University.

1995 – 1996: Lecturer, Department of Applied Computing and Mathematics, University of Tasmania @ Launceston.

1988 – 1994: Research Associate, Computer Science Department, Stanford University, California, U.S.A.

1991: Acting Assistant Professor of Philosophy. Philosophy Department, Stanford University, California, U.S.A.

- 1986 – 1988:** Research Associate, Laboratory for Foundations of Computer Science, Computer Science Department, Edinburgh University, Scotland, U.K.
- August 1986:** Instructor, Proving Properties of Programs, Western Institute in Computer Science, Stanford University, California, U.S.A.
- 1985 – 1986:** Research Assistant to Professor John McCarthy, Computer Science Department, Stanford University.
- 1983 – 1985:** Consultant Programmer to Richard Weyhrauch, Perseus Inc. Los Altos, California, U.S.A.
- Summer 1984:** Research Assistant to Professor John McCarthy, Computer Science Department, Stanford University, California, U.S.A.
- Summer 1983:** Research Assistant to Professor John Perry, Center for the Study of Language and Information. Stanford University.
- 1982 – 1984:** Teaching Assistant, Philosophy Department, Stanford University, California, U.S.A.
- 1982 – 1984:** Teaching Assistant for computer assisted instruction in Logic, Institute for Mathematical Study in the Social Sciences, Stanford University, California, U.S.A.

Ian A. Mason's Publications:

Books:

- [1] AGHA, G., MASON, I. A., SMITH, S., AND TALCOTT, C. L. *Foundations of Open Distributed Systems*. MIT press, Boston, 200? in preparation.
- [2] MASON, I. A. *The Semantics of Destructive Lisp*. No. 5 in CSLI Lecture Notes, Center for the Study of Language and Information, Stanford University. University of Chicago Press, 1986.
- [3] MASON, I. A., AND ODERSKY, M., Eds. *Special issue on State in Programming Languages (Part A)*, vol. 8(4) of *Lisp and Symbolic Computation*. Kluwer Academic Publishers, 1995.
- [4] MASON, I. A., AND ODERSKY, M., Eds. *Special issue on State in Programming Languages (Part B)*, vol. 9(1) of *Lisp and Symbolic Computation*. Kluwer Academic Publishers, 1996.

Book Chapters:

- [1] A.AVRON, F.HONSELL, AND MASON, I. An Overview of the Edinburgh Logical Framework. In *Current Trends in Hardware Verifications and Automated Theorem Proving.*, G.Birtwistle and P.A.Subramanyam, Eds. Springer-Verlag, 1989. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/89banff.ps>.
- [2] MASON, I. A., AND TALCOTT, C. L. Program Transformation via Contextual Assertions. In *Logic, Language and Computation. Festschrift in Honor of Satoru Takasu (1994)*, vol. 792 of *Lecture Notes in Computer Science*, Springer, Berlin, pp. 225–254. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/94takasu.ps>.
- [3] MASON, I. A., AND TALCOTT, C. L. Feferman–Landin Logic. In *Reflections on the Foundations of Mathematics: Essays in honor of Solomon Feferman*, vol. 15 of *Lecture Notes in Logic*. Association of Symbolic Logic, 2001, pp. 299–334. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/00sf.ps>.

Journal Articles:

- [1] A.AVRON, F.HONSELL, MASON, I., AND POLLACK, R. Using Typed Lambda Calculus to Implement Formal Systems on a Machine. *Journal of Automated Reasoning* 9 (1992), 309–354. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/92jar.ps>.
- [2] AGHA, G., MASON, I. A., SMITH, S., AND TALCOTT, C. L. A Foundation for Actor Computation. *Journal of Functional Programming* 7 (1997), 1–72. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/96jfp.ps>.
- [3] BUVAČ, S., BUVAČ, V., AND MASON, I. A. Metamathematics of Contexts. *Fundamenta Informaticae* 23, 3 (1995). Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/95fi.ps>.

- [4] CARSON, B., MURISON, R., AND MASON, I. A. Computational gains using RPVM on a Beowulf Cluster. *R News* 3 (June 2003), 21–26.
- [5] FORD, J., AND MASON, I. A. Formal Foundations of Operational Semantics. *Higher-Order and Symbolic Computation* 16 (2003), 161–202.
- [6] HONSELL, F., MASON, I. A., SMITH, S. F., AND TALCOTT, C. L. A Variable Typed Logic of Effects. *Information and Computation* 119, 1 (May 1995), 55–90. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/93ic.ps>.
- [7] MASON, I. Computing with Contexts. *Higher-Order and Symbolic Computation* 12 (1999), 171–201. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/99hosc.ps>.
- [8] MASON, I., AND TALCOTT, C. Reasoning about Object Systems in VTLoE. *International Journal of Foundations on Computer Science* 6, 3 (1995), 265–298. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/94ijfcs.ps>.
- [9] MASON, I. A. The Metatheory of the Classical Propositional Calculus is not Axiomatizable. *Journal of Symbolic Logic*. 50, 2 (June 1985), 451–457. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/85jsl.ps>.
- [10] MASON, I. A. Verification of Programs that Destructively Manipulate Data. *Science of Computer Programming* 10 (1988), 177–210.
- [11] MASON, I. A. A First Order Logic of Effects. *Theoretical Computer Science* (1997), 277 – 318. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/96loe.ps>.
- [12] MASON, I. A., SMITH, S., AND TALCOTT, C. L. From Operational Semantics to Domain Theory. *Information and Computation* 128, 1 (10 1996), 26–47. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/94opdom.ps>.
- [13] MASON, I. A., AND TALCOTT, C. L. Equivalence in Functional Languages with Effects. *Journal of Functional Programming* 1 (1991), 287–327. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/91fp.ps>.
- [14] MASON, I. A., AND TALCOTT, C. L. Inferring the Equivalence of Functional Programs that Mutate Data. *Theoretical Computer Science* 105, 2 (1992), 167–215. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/92tcs.ps>.
- [15] MASON, I. A., AND TALCOTT, C. L. Actor Languages – Their Syntax, Semantics, Translation & Equivalence. *Theoretical Computer Science* 220 (1999), 409–467. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/99tcs.ps>.
- [16] MASON, I. A., AND TALCOTT, C. L. Interaction & Interoperability. *Higher-Order and Symbolic Computation* ?? ((accepted for publication)), ??

Refereed Conference Articles:

- [1] AGHA, G., MASON, I. A., SMITH, S., AND TALCOTT, C. L. Towards a theory of Actor Computation. In *Concur '92* (1992), vol. 630 of *Lecture Notes in Computer Science*, Springer-Verlag, pp. 565–579. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/92concur.ps>.
- [2] BUVAČ, S., BUVAČ, V., AND MASON, I. A. The Semantics of Propositional Contexts. In *Proceedings of the Eight International Symposium on Methodologies for Intelligent Systems* (1994), vol. 869 of *Lecture Notes in Artificial Intelligence*, Springer Verlag. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/94ismis.ps>.
- [3] BUVAČ, S., AND MASON, I. A. Propositional Logic of Context. In *Proceedings of Eleventh Annual National Conference on Artificial Intelligence AAAI'93* (1993), AAAI Press/ MIT Press, pp. 412–419. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/93aaai.ps>.
- [4] CARSON, B., AND MASON, I. A. ClusterGrind: Valgrinding LAM/MPI Applications. In *Proceedings of the European PVM MPI Conference, PVMMPI'05* (2005), ??, Ed., p. ??
- [5] FORD, J., AND MASON, I. A. Establishing a General Context Lemma in PVS. In *Proceedings of the 2nd Australasian Workshop on Computational Logic, AWCL'01* (2001), G. Antoniou and G. Governatori, Eds., pp. 75–91. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/01awcl.ps>.
- [6] FORD, J., AND MASON, I. A. Operational Techniques in PVS – A Preliminary Evaluation. In *Proceedings of the Australasian Theory Symposium, CATS '01* (2001), C. J. Fidge, Ed., vol. 42 of *Electronic Notes in Theoretical Computer Science*, Elsevier Science, pp. 124–142. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/01cats.ps>.
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- [9] MASON, I. A. Equivalence of First Order Lisp Programs: Proving Properties of Destructive Programs via Transformation. In *First Annual Symposium on Logic in Computer Science* (1986), IEEE, pp. 105–117.

- [10] MASON, I. A. Parametric Computation. In *Proceedings of the Australasian Theory Symposium, CATS '97* (1997), J. Harland, Ed., pp. 103 – 112. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/97cats.ps> complete proofs of all claims are also available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/97cats-proofs.ps>.
- [11] MASON, I. A., AND TALCOTT, C. L. Axiomatizing Operational Equivalence in the Presence of Side Effects. In *Fourth Annual Symposium on Logic in Computer Science* (1989), IEEE, pp. 284–293. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/89lics.ps>.
- [12] MASON, I. A., AND TALCOTT, C. L. Programming, Transforming, and Proving with Function Abstractions and Memories. In *Proceedings of the 16th EATCS Colloquium on Automata, Languages, and Programming, Stresa* (1989), vol. 372 of *Lecture Notes in Computer Science*, Springer-Verlag, pp. 574–588. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/89icalp.ps>.
- [13] MASON, I. A., AND TALCOTT, C. L. Reasoning About Programs with Effects. In *Programming Language Implementation and Logic Programming, PLILP'90* (1990), vol. 456 of *Lecture Notes in Computer Science*, Springer-Verlag, pp. 189–203. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/90plip.ps>.
- [14] MASON, I. A., AND TALCOTT, C. L. Program Transformation for Configuring Components. In *Proceedings of the ACM/IFIP Symposium on Partial Evaluation and Semantics Based Program Manipulation*. (1991), pp. 297–308. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/91pepm.ps>.
- [15] MASON, I. A., AND TALCOTT, C. L. References, Local Variables and Operational Reasoning. In *Sixth Annual Symposium on Logic in Computer Science* (1991), IEEE, pp. 186–197. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/92ics.ps>.
- [16] MASON, I. A., AND TALCOTT, C. L. A Semantics Preserving Actor Translation. In *Proceedings of the 24th International Colloquium on Automata, Languages and Programming, ICALP 97*. (1997), Lecture Notes in Computer Science, Springer Verlag, pp. 369–378.
- [17] MASON, I. A., AND TALCOTT, C. L. Simple Network Protocol Simulation within Maude. In *International Workshop on Rewriting Logic and its Applications (WRLA2000)* (2000), S. Iida, Ed., Electronic Notes in Theoretical Computer Science, Elsevier Science. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/00wrla.ps>.
- [18] MASON, I. A., AND TALCOTT, C. L. IOP: The InterOperability Platform & IMAude: An Interactive Extension of Maude. In *International Workshop on Rewriting Logic and its Applications (WRLA 2004)* (2004), Electronic Notes in Theoretical Computer Science, Elsevier Science.

- [19] MASON, I. A., AND TALCOTT, C. L. Towards a Logical Analysis of Interactive Systems. In *Foundations OF Interactive Computation (FInCo 2005, Edinburgh, Scotland)* (2005), Electronic Notes in Theoretical Computer Science, Elsevier Science.

Technical Reports:

- [1] A.AVRON, F.HONSELL, AND MASON, I. Using Typed Lambda Calculus to Implement Formal Systems on a Machine. Tech. Rep. ECS-LFCS-87-31, Laboratory for Foundations of Computer Science, University of Edinburgh, 1987.
- [2] A.AVRON, R.HARPER, F.HONSELL, MASON, I., AND G.PLOTKIN. Workshop on General Logics. Tech. Rep. ECS-LFCS-88-52, Laboratory for Foundations of Computer Science, University of Edinburgh, 1988.
- [3] BRETT CARSON, AND IAN A. MASON, AND ROBERT MURISON. Estimating breeding values on a Beowulf cluster. Tech. Rep. 05-235, MSCS, University of New England, June 2005.
- [4] IAN A. MASON, AND DAVID PORTER, AND CAROLYN TALCOTT. The JLambda Language. Tech. Rep. 05-232, MSCS, University of New England, January 2005. Available at <http://mcs.une.edu.au/~iop/Data/Papers/>.
- [5] MASON, I. Hoare's Logic in the LF. Tech. Rep. ECS-LFCS-87-32, Laboratory for Foundations of Computer Science, University of Edinburgh, 1987. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/87hoare.ps>.
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- [7] MASON, I. A., AND TALCOTT, C. L. Memories of S-expressions: Proving Properties of Lisp-Like Programs that Destructively Alter Memory. Tech. Rep. STAN-CS-85-1057, Department of Computer Science, Stanford University, 1985.
- [8] MASON, I. A., AND TALCOTT, C. L. A Sound and Complete Axiomatization of Operational Equivalence Between Programs with Memory. Tech. Rep. STAN-CS-89-1250, Department of Computer Science, Stanford University, 1989. Available as postscript from <http://mcs.une.edu.au/~iam/Data/Papers/89cm-tr.ps>.

Miscellaneous

- [1] FORD, J., MASON, I. A., AND SHANKAR, N. Lessons Learned from Formal Developments in PVS., 2002. presented at LICS'02 (within FLoC'02), Copenhagen.
- [2] MASON, I. A. The Undecidability of the Metatheories of Propositional Calculii. *Abstracts of the American Mathematical Society*. 5, 1 (1984), 130.

- [3] MASON, I. A. Memories of Lisp. *Journal of Symbolic Logic*. 51, 3 (September 1986). Abstract.
- [4] MASON, I. A. *The Semantics of Destructive Lisp*. PhD thesis, Stanford University, 1986. Also available as [2].
- [5] MASON, I. A., AND TALCOTT, C. L. The InterOperability Platform Manual IOP version 0.14, February 2005. Available at <http://mcs.une.edu.au/~iop/Data/Manual/>.