

# Alley Stoughton

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## Education

University of Edinburgh

*PhD Computer Science, January 1987*

University of California, Los Angeles

*MS Computer Science, December 1981*

*BS Mathematics/Computer Science, June 1979*

## Employment

Hariri Institute for Computing and Computational Science & Engineering, Boston  
University

*Visiting Fellow, March 2017–present*

IMDEA Software Institute

*Researcher, October 2015–August 2016*

MIT Lincoln Laboratory

*Technical Staff, September 2012–April 2015*

Department of Computer Science, Tufts University

*Lecturer, January–May 2012*

Department of Computing and Information Sciences, Kansas State University

*Associate Professor, August 1993–May 2010*

School of Cognitive and Computing Sciences, University of Sussex

*Lecturer in Computer Science, April 1988–July 1993*

*Research Fellow, September 1986–March 1988*

Department of Computer Sciences, Chalmers University of Technology

*Visiting Research Fellow, January–July 1986*

Information Sciences Institute, Los Angeles

*Research Assistant, 1981–82*

Computer Science Department, University of California, Los Angeles

*Programmer, 1980–81 and 1976–79*

*Teaching Assistant, 1979–80*

## Publications

- A. Stoughton and M. Varia. Mechanizing the Proof of Adaptive, Information-theoretic Security of Cryptographic Protocols in the Random Oracle Model. *Proceedings of the 30th IEEE Computer Security Foundations Symposium (CSF '17)*. IEEE Computer Society, 2017.
- J. Hughes, C. Sparks, A. Stoughton, R. Parikh, A. Reuther and S. Jagannathan. Building Resource Adaptive Software Systems (BRASS): Objectives and System Evaluation. *SIGSOFT Softw. Eng. Notes*, vol. 41, no. 1. ACM, 2016.
- A. Stoughton, A. Johnson, S. Beller, D. Chen, K. Chadha, K. Foner and M. Zhivich. You Shot My Battleship! A Case Study in Secure Programming. *Proceedings of the Ninth Workshop on Programming Languages and Analysis for Security (PLAS '14)*, pp. 2–14. ACM, 2014.
- A. Stoughton. Experimenting with Formal Languages Using Forlan. *FDPE '08: Proceedings of the 2008 International Workshop on Functional and Declarative Programming in Education*, pp. 41–50. ACM, 2008.
- A. Stoughton. A Functional Model-View-Controller Software Architecture for Command-oriented Programs. *WGP '08: Proceedings of the ACM SIGPLAN Workshop on Generic Programming*, pp. 1–12. ACM, 2008.
- A. Stoughton. Experimenting with Formal Languages. *36th SIGCSE Technical Symposium on Computer Science Education*, workshop abstract, p. 566. ACM, 2005.
- C. Haack, B. Howard, A. Stoughton and J. Wells. Fully Automatic Adaptation of Software Components Based on Semantic Specifications. *9th International Conference on Algebraic Methodology and Software Technology (AMAST)*, Lecture Notes in Computer Science, vol. 2422, pp. 83–98. Springer-Verlag, 2002.
- A. Stoughton. Infinite Pretty-printing in eXene. *Trends in Functional Programming*, vol. 3, pp. 13–24. Intellect, 2002.
- A. Stoughton. An Operational Semantics Framework Supporting the Incremental Construction of Derivation Trees. *Second Workshop on Higher-Order Operational Techniques in Semantics (HOOTS II)*, Electronic Notes in Theoretical Computer

- Science, vol. 10, 12 pp. Elsevier Science B. V., 1998.
- A. Stoughton. Porgi: a Proof-Or-Refutation Generator for Intuitionistic propositional logic. *CADE-13 Workshop on Proof Search in Type-Theoretic Languages*, Rutgers University, pp. 109–116, 1996.
- A. Stoughton. Mechanizing logical relations. *Ninth International Conference on the Mathematical Foundations of Programming Semantics*, Lecture Notes in Computer Science, vol. 802, pp. 359–377. Springer-Verlag, 1994.
- A. Jung and A. Stoughton. Studying the fully abstract model of PCF within its continuous function model. *International Conference on Typed Lambda Calculi and Applications*, Lecture Notes in Computer Science, vol. 664, pp. 230–244. Springer-Verlag, 1993.
- A. Stoughton. Parallel PCF has a unique extensional model. *Sixth Annual IEEE Symposium on Logic in Computer Science*, pp. 146–151. IEEE, 1991.
- A. Stoughton. Interdefinability of parallel operations in PCF. *Theoretical Computer Science*, 79:357–358, 1991.
- A. Stoughton. Equationally fully abstract models of PCF. *Fifth International Conference on the Mathematical Foundations of Programming Semantics*, Lecture Notes in Computer Science, vol. 442, pp. 271–283. Springer-Verlag, 1990.
- A. Stoughton. *Fully Abstract Models of Programming Languages*. Research Notes in Theoretical Computer Science, 123 pp. Pitman/Wiley, 1988. A revision with additions of the University of Edinburgh PhD thesis of the same name, Technical Report CST–40–86, Computer Science Department, University of Edinburgh, 1986.
- A. Stoughton. Substitution revisited. *Theoretical Computer Science*, 59:317–325, 1988. Previously appeared as Technical Report 1/87, Computer Science Subject Group, University of Sussex, 1987.
- D. Parker, G. Popek, G. Rudisin, A. Stoughton, B. Walker, E. Walton, J. Chow, D. Edwards, S. Kiser and C. Kline. Detection of mutual inconsistency in distributed systems. *IEEE Transactions on Software Engineering*, SE–9(3):240–247, 1983.
- V. Kini, D. Martin and A. Stoughton. Tools for testing denotational semantic definitions of programming languages. Technical Report ISI/RR–83–112, 77 pp., Information Sciences Institute, 1983.
- V. Kini, D. Martin and A. Stoughton. Testing the INRIA Ada formal definition: The USC-ISI formal semantics project. *ADATec Conference on Ada*, pp. 120–128. ACM, 1982.
- A. Stoughton. Access Flow: A protection model which integrates access control and

information flow. *1981 Symposium on Security and Privacy*, pp. 9–18. IEEE, 1981.

G. Popek, M. Kampe, C. Kline, A. Stoughton, M. Urban and E. Walton. UCLA Secure Unix. *National Computer Conference*, pp. 355–364, 1979.

## Workshops

A. Stoughton. Experimenting with Formal Languages. Workshop given at the *36th SIGCSE Technical Symposium on Computer Science Education*, February 23, 2005.

## Grants

Co-principal investigator with D. Schmidt, B. Howard and M. Dwyer of NSF/DARPA grant CCR-9633388, *Logical Support for High-Assurance Software Evolution*, 1996–98, \$200,000.

Co-principal investigator with D. Schmidt of NSF grant CCR-9302962, *Analysis and Classification of Programming Languages*, 1993–96, \$221,000.

Co-principal investigator with D. Schmidt and B. Howard of ONR grant N 00014-94-1-0866, *Type Theories in ML*, 1994–96, \$190,000.

Co-principal investigator with E. Robinson of ESPRIT grant BRA 6811, *Categorical Logic in Computer Science* (Sussex University was an associate site), 1992–95, 31,000 ECU.