# Mooly (Shmuel) Sagiv

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Birthdate: 11 April, 1959
Birthplace: Ramat-Hasharon, Israel
Marital Status: Single

## Areas of Interest

Programming languages, compiler principles and tools, programming environments, abstract interpretation, attribute grammars, program understanding, program slicing, code porting.

## Education

**1991** Ph.D, Computer Science Technion-Israel Institute of Technology, Haifa, Israel
Thesis Topic – High Level Formalisms for Program Flow Analysis and their use in Compiling
Advisors – Dr. Michael Rodeh and Professor Nissim Francez

**1985** B.A, Computer Science, cum laude, Technion-Israel Institute of Technology, Haifa, Israel

## Positions

**1994-present** Visiting Associate Research Scientist, Computer Science Department, University of Madison-Wisconsin

**1993-1994** Visiting Professor, Datalogisk Institut, University of Copenhagen, Copenhagen

**1991-present** (On leave since June 1993) Research Staff Member, IBM Israel Scientific Center

**1988-1991** Instructor, Computer Science Department, Technion- Israel Institute of Technology

**Summer 1988** Visitor, IBM Yorktown

**Summer 1987** Visiting research assistant, New York University

**1985-1987** Student Employee, IBM Israel Scientific Center

**1985-1987** Teaching Assistant, Computer Science Department

## Awards

**1993** IBM Outstanding Technical Achievement Award

**1989** Wolf Foundation Fellowship

**1985** Miriam and Aharon Gotwirth Fellowship

## Publications

### Journals

- Horwitz, S., Reps, T., and Sagiv, M.: "Demand interprocedural dataflow analysis", submitted to *ACM Transactions on Software Engineering and Methodology* (invited paper).

  Also available as Technical Report, TR-1283, Computer Sciences Department, University of Wisconsin-Madison, August 1995. "http://www.cs.wisc.edu/trs.html"

- Sagiv, M., Reps, T., and Horwitz, S.: "Precise interprocedural dataflow analysis with applications to constant propagation", submitted to *Theoretical Computer Science, a special issue on TAPSOFT-95* (invited paper).

  Also available as Technical Report, TR-1284, Computer Sciences Department, University of Wisconsin-Madison, August 1995. "http://www.cs.wisc.edu/trs.html"

- Sagiv, S., Francez, N., Rodeh, M., Wilhelm, R.: "A Logic Based Approach to Data Flow Analysis Problems", To appear in *ACTA Informatica.*

- Makowsky, J., Gregoire, J., and Sagiv, M.: The Expressive Power of Side Effects in Prolog", *J. Logic Programming 1992:12*, 1992.

### Refereed Conferences

- Sagiv, M., Reps, T., and Wilhelm, R.: "Solving shape-analysis problems in languages with destructive updating", To appear in *Conference Record of the Twenty-Third ACM Symposium on Principles of Programming Languages* (St. Petersburg, FL, Jan. 22-24, 1996), ACM, New York, NY, 1996. "http://www.cs.wisc.edu/wpis/papers/popl96.ps"

- Horwitz, S., Reps, T., and Sagiv, M.: "Demand Interprocedural Dataflow analysis", *SIGSOFT '95: Proceedings of the Third ACM SIGSOFT Symposium on the Foundations of Software Engineering*, (Washington, DC, October 10-13, 1995), *ACM SIGSOFT Software Engineering Notes 20*, 4 (1995), pp. 104-115. "http://www.cs.wisc.edu/wpis/papers/fse95a.ps"

  Chosen as one of the five best papers invited for special submission to ACM Transactions on Software Engineering and Methodology.

- Sagiv, M., Reps, T., and Horwitz, S.: "Precise Interprocedural Dataflow analysis with applications to constant propagation", *Proceedings of FASE '95: Colloquium on Formal Approaches in Software Engineering*, (Aarhus, Denmark, May 22-26, 1995), *Lecture Notes in Computer Science*, Vol. 915, P.D. Mosses, M. Nielsen, and M.I. Schwartzbach (eds.), Springer-Verlag, New York, NY, 1995, pp. 651-665.
"http://www.cs.wisc.edu/wpis/papers/tapsoft95.ps"

  Chosen as one of the two best papers invited for special submission to Theoretical Computer Science, a special issue on TAPSOFT-95.

- Reps, T., Horwitz, S., and Sagiv, M.: "Precise Interprocedural Dataflow Analysis via Graph Reachability" *Conference Record of the Twenty-Second ACM Symposium on Principles of Programming Languages*, (San Francisco, CA, Jan. 23-25, 1995), pp. 49-61. "http://www.cs.wisc.edu/wpis/papers/popl95.ps"

- Horwitz, S., Reps, T., Sagiv, M., and Rosay, G.: "Speeding up slicing", *SIGSOFT '94: Proceedings of the Second ACM SIGSOFT Symposium on the Foundations of Software Engineering*, (New Orleans, LA, December 7-9, 1994), *ACM SIGSOFT Software Engineering Notes 19*, 5 (December 1994), pp. 11-20. "http://www.cs.wisc.edu/wpis/papers/fse94.ps"

- Bernstein, D., Rodeh, M., and Sagiv, M,: "Proving Safety of Speculative Instructions at Compile Time", *LNCS 582, 4th European Symposium on Programming*, 1992.

- Sagiv, S., Francez, N., Rodeh, M., Wilhelm, R.: "A Logic Based Approach to Data Flow Analysis Problems" *LNCS 456, 2nd Workshop on Programming Language Implementation and Logic Programming*, 1990.

- Sagiv, S., Edelstein, O., Francez, N., Rodeh, M.: "Resolving Circularity in Attribute Grammars with Applications to Data Flow Analysis", *Conference Record of the Sixteenth ACM Symposium on Principles of Programming Languages*, pp. 36-48, 1989.

## Technical Reports

- Sagiv, M., Reps, T., and Wilhelm, R.: "Solving shape-analysis problems in languages with destructive updating", Technical Report, TR-1276, Computer Sciences Department, University of Wisconsin-Madison, July 1995. "http://www.cs.wisc.edu/trs.html"

  A journal version is in preparation.

- Reps, T., Sagiv, M., and Horwitz, S.: "Interprocedural Dataflow Analysis via Graph Reachability", Datalogisk Institut, University of Copenhagen, Technical Report, TR 94-14, 1994. "http://www.cs.wisc.edu/wpis/papers/diku-tr94-14.ps"

- Nelson, L., Ricard, G., and Sagiv, M.: "Walleye: A Tool for PL/MP Migration: Technical Issues", IBM Israel Scientific Center, TR 88-343, December 1993.

- Bernstein, D., Rodeh, M., and Sagiv, M.: "Proving Safety of Speculative Instructions at Compile Time", IBM Israel Scientific Center, Technical Report 88.334, May 1993.
- Sagiv, S., Edelstein, O., Francez, N., Rodeh, M.: "Resolving Circularity in Attribute Grammars with Applications to Data Flow Analysis", IBM Israel Scientific Center, Technical Report 88.306, May 1991.

  A journal version is in preparation.
- Rodeh, M., Sagiv, S.: "Finding the Circular Attributes in Attribute Grammars", IBM Israel Scientific Center, Technical Report 88.299, December 1990.

  Submitted to *JACM*.
- Rodeh, M., Sagiv, S.: "Analyzing Interprocedural Aliases Through Pointer Equalities", IBM Israel Scientific Center, Technical Report 88.298, December 1990.
- Edelstein, O., Sagiv, S.: "Machine Independent Optimizations via Attribute Grammars", IBM Israel Scientific Center, Technical Report 88.187, June 1986.

## Patents

- Efficient and Flexible Aliasing Method and Apparatus using Alias Lists for Code Generation