

## Kamal Aboul-Hosn

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### TECHNICAL SKILLS

- **Programming Languages:** C, Lua, Java, Javascript, C++, C#, SML, PHP
- **Operating Systems:** Windows, Mac OS X, unix

### RESEARCH INTERESTS

- **Formal methods for software verification:** I have done work in the use of Kleene algebra with tests for representing and reasoning about programs.
- **Mathematical knowledge management:** I have worked in the formal representation of theorems, proofs, and their relationships.

### EDUCATION

**August 2002-January 2007**

**Cornell University**

Ph.D. in Computer Science completed January 2007  
Masters in Computer Science completed August 2005  
Minor in Economics  
Advisor: Dexter Kozen  
GPA: 3.89

**August 1998-December 2001**

**The Pennsylvania State University**

Honors B.S. in Computer Science  
Minor in Mathematics  
GPA: 3.87

### PROFESSIONAL EXPERIENCE

**February 2007-Present**

**Bloomberg, LP**

Team Leader for UI Core Widgets Team (May 2009 – Present)

- Oversee the work of 8 developers programming in C, C++, C#, and Lua
- Directed team's widget development on Launchpad 2010, one of Bloomberg's largest functional enhancements in 7 years
- Helped direct major programming and UI initiatives that affect entire company's development process
- Actively involved in all interviewing for UI Infrastructure

Programmer in UI Framework Group (Feb. 2007 – May 2009)

- Headed SVG-based charting effort
- Owned input widgets used by 2000 application developers
- Developed several new widgets for use in Bloomberg functions
- Recruited for Western New York region (Syracuse, Rochester, Cornell, and Buffalo)

## Intel

Research intern in Programming Systems Lab

- Helped design a language for specifying instruction set architectures
- Specified much of Intel's IA ISA in the language
- Designed a translation from specification language to a functional simulator in C

May 2003-December 2006

## Cornell University

Research assistant for Dexter Kozen

- Implemented KAT-ML, an interactive theorem prover for Kleene algebra with tests
- Oversaw development of tactics for KAT-ML by undergraduate assistant
- Developed formal methods for representing relationships between theorems, proofs, and proof tactics

January 2002-August 2002

## The Pennsylvania State University

$\lambda$ Prolog programmer and research assistant for Dale Miller

- Implemented parser generator
- Created strings package
- Created Emacs module

## PUBLICATIONS

- Kamal Aboul-Hosn and Dexter Kozen. . *Local variable scoping and Kleene algebra with tests*. Journal of Logic and Algebraic Programming. To appear.
- Kamal Aboul-Hosn. *An Axiomatization of Arrays for Kleene Algebra with Tests*. In R. A. Schmidt, editor, Proc. 9th Int. Conf. Relational Methods in Computer Science and 4th Int. Workshop Applications of Kleene Algebra (RelMiCS/AKA'06), volume 4136 of Lecture Notes in Computer Science, pages 63-77. Springer, August 2006.
- Kamal Aboul-Hosn and Dexter Kozen. *Local variable scoping and Kleene algebra with tests*. In R. A. Schmidt, editor, Proc. 9th Int. Conf. Relational Methods in Computer Science and 4th Int. Workshop Applications of Kleene Algebra (RelMiCS/AKA'06), volume 4136 of Lecture Notes in Computer Science, pages 78-90. Springer, August 2006.
- Kamal Aboul-Hosn. *A Proof-Theoretic Approach to Tactics*. In Borwein, Jonathan M.; Farmer, William M., editors, Proc. 5th Int. Conf. Mathematical Knowledge Management (MKM'06), volume 4108 of Lecture Notes in Computer Science, pages 54-66. Springer, August 2006.
- Kamal Aboul-Hosn and Dexter Kozen. *Relational semantics for higher-order programs*. In Tarmo Uustalu, editor, Proc. 8th Int. Conf. Mathematics of Program Construction (MPC'06), volume 4014 of Lecture Notes in Computer Science, pages 29-48. Springer, July 2006.
- Kamal Aboul-Hosn and Dexter Kozen. *KAT-ML: An Interactive Theorem Prover for Kleene Algebra with Tests*. Journal of Applied Non-Classical Logics, 2006(1). 2006.
- Kamal Aboul-Hosn and Terese Damhøj Andersen. *A Proof-Theoretic Approach to Hierarchical Math Library Organization*. In Proc. 4th Int. Mathematical Knowledge Management Conference, pages 1-16. International University of Bremen, October 2005.
- Kamal Aboul-Hosn and Dexter Kozen. *KAT-ML: An Interactive Theorem Prover for Kleene Algebra with Tests*. In Proc. 4th Int. Workshop on the Implementation of Logics, pages 2-12. University of Manchester, September 2003.
- Kamal Aboul-Hosn. *Programming with Private State*. Honors Thesis, The Pennsylvania State University, December 2001.

## CONFERENCE PRESENTATIONS

- *Local Variable Scoping and Kleene Algebra with Tests*. RelMiCS 06, Manchester, UK.
- *An Axiomatization of Arrays for Kleene Algebra with Tests*. RelMiCS 06, Manchester, UK.
- *A Proof-Theoretic Approach to Tactics*. MKM 06, Wokingham, UK.
- *Relational Semantics for Higher-Order Programs*. MPC 06, Kuressaare, Estonia.
- *A Proof-Theoretic Approach to Hierarchical Math Library Organization*. MKM 05, Bremen, Germany.
- *KAT-ML: An Interactive Theorem Prover for Kleene Algebra with Tests*. WIL 03, Almaty, Kazakhstan.

## TEACHING ASSISTANT EXPERIENCE

- CS 100J: Introduction to Computer Programming, Fall and Spring 2005
- CS 472/473: Foundations of Artificial Intelligence, Fall 2004
- CS 130: Introduction to Web Documents, Summer 2003
- CS 312: Data Structures and Functional Programming, Spring 2003
- CS 481: Automata and Computability, Fall 2002

## PROJECTS

- **“Can Computers Think?”**: An eight-session course aimed at high school students regarding artificial intelligence and its future. <http://www.cs.cornell.edu/~kamal/cct>
- **Radar In Motion**: A weather map application for Mac OS X Dashboard and iPhone. Downloaded over 1,000,000 times from <http://www.dividedsoul.net/RadarInMotion>.