

# PETER DILLINGER

peterd@cc.gatech.edu

974 Simpson St NW

Atlanta GA 30314

404-509-4879

## Research Interest

I am interested in developing tools and techniques that aid in the development of correct, reliable software systems. With a breadth of knowledge in analysis, verification, languages, and compilers, I have focused on improving formal verification algorithms and tools—so that these might become equally as capable as they are essential to the production of complex, reliable software.

## Education

All: Georgia Institute of Technology, Atlanta, GA

8/2003 – Present      *Doctor of Philosophy in Computer Science (in progress)*  
Research: Algorithms and data structures for explicit-state model checking

8/2002 – 8/2003      *Master of Science in Computer Science*  
Areas of focus: Compilers, Languages, Program Analysis and Verification, and Formal Methods

8/1999 – 8/2002      *Bachelor of Science in Computer Science*  
Specialization areas: Compilers, Operating Systems, Artificial Intelligence, Theory

## Work Experience

*Research assistant* · Georgia Tech College of Computing

1/2005 – Present      Research with Prof. Manolios on an NSF project to make the ACL2 theorem proving system more accessible to beginners, so that it could be introduced in undergraduate courses. I am building a rich, intuitive interface to the theorem prover as an Eclipse plug-in.

8/2004 – 12/2004      Research with Boeing and Prof. Manolios on software architecture description languages (ADLs) for next-generation avionics software systems.

5/2003 – 5/2004      Research with Prof. Manolios on algorithms and data structures for explicit-state model checking.

5/2001 – 8/2001      Research with Prof. Harrold on Java security and automated analysis of Java programs.

*Instructor* · Georgia Governor's Honors Program

6/2005 – 7/2005      Math instructor for the six week program, which gives enrichment in mathematics to about a hundred of the state's most talented, most interested high school juniors and seniors.

- Developed my own curricula for courses based on Math that is not offered in high schools.
- Gave daily lectures and supervised student research projects.
- Taught courses on Cryptography, Logic, Functional Programming, and Introductory Programming.

*Industry Research Intern* · NASA/Caltech Jet Propulsion Laboratory

5/2004 – Summer intern at the Laboratory for Reliable Software, working with Gerard

7/2004 Holzmann and Rajeev Joshi.

- Integrated some of my enhancements to the SPIN model checker into an official release.
- Worked on specification and implementation of automaton-based static checkers.
- Developed a unique preprocessor for C that supports program analysis.

*Teaching assistant* · Georgia Tech College of Computing

8/2002 – Graduate assistant for the senior-level introductory Artificial Intelligence course.  
5/2003

- Graded assignments and exams.
- Assisted in assignment and exam development.
- Give one-on-one and one-on-many help to students.

5/2000 – Undergraduate assistant for the second semester computer science course, covering  
5/2002 data structures and object-oriented programming in Java.

- Gave recitations and individual help.
- Developed and graded assignments and exams.
- Aided in course administration and policy development.

## **Publications**

- Peter C. Dillinger and Panagiotis Manolios.  
Enhanced Probabilistic Verification with 3Spin and 3Murphi.  
Tool paper in proc. of 12th International SPIN Workshop (2005).  
Volume 3639 of Springer LNCS.
- Peter C. Dillinger and Panagiotis Manolios.  
Bloom Filters in Probabilistic Verification.  
In Proc. of Formal Methods in Computer-Aided Design (FMCAD), 2004.  
Volume 3312 of Springer LNCS.
- Peter C. Dillinger and Panagiotis Manolios.  
Fast and Accurate Bitstate Verification for SPIN.  
In Proc. of 11th International SPIN Workshop (2004).  
Volume 2989 of Springer LNCS.

## **Honors**

- *Highest Honors* designation on undergraduate degree (3.70 / 4.00 GPA).
- *Honorable Mention* for 2004 NSF Graduate Research Fellowship competition.

## **References**

- Panagiotis (Pete) Manolios, Assistant Professor  
manolios@cc.gatech.edu  
404-894-9219
- Mary Jean Harrold, Professor  
harrold@cc.gatech.edu  
404-385-0612
- *More references available upon request.*