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EDUCATIONAL BACKGROUND

Ph.D. in Computer Sciences, December 1999, **University of Texas at Austin**. (Advisor: Don S. Batory)

M.Sc. in Computer Sciences, May 1995, **University of Texas at Austin**.

B.Sc. in Computer Science, July 1993, **University of Crete, Heraklion**. Crete / Greece.

EMPLOYMENT HISTORY

Associate Professor, Department of Computer Science, **University of Massachusetts, Amherst**, Sep. 2008-present.

Associate Professor, Department of Computer and Information Science, **University of Oregon**, Sep. 2006-Aug.2008 (+ Research Affiliate 2008-2009).

Assistant Professor, College of Computing, **Georgia Institute of Technology**, Jan. 2000-2006 (+ on leave summer 2006-2008, adjunct 2008-present).

Research Assistant, Department of Computer Sciences, **University of Texas at Austin**, Sep. 1996-December 1999.

Researcher, **Microsoft Research**, Summer 1995, Summer 1996, Summer 1997.

Teaching Assistant, Department of Computer Sciences, **University of Texas at Austin**, September 1994-May 1995.

Network Administrator (part-time), **FORTH** (Foundation of Research and Technology, Hellas) and **University of Crete** Computer Center, November 1990-May 1992.

FIELDS OF INTEREST

Applied Programming Languages and Software Engineering.

- Language mechanisms for abstraction (program generators, domain-specific languages, modules and components, extensible languages, meta-programming, multi-paradigm programming).
- Languages and tools for systems (programming models for concurrency, language support for distributed computing, memory management and program locality).
- Program analysis and testing (automatic test generation, invariant inference, symbolic execution, pointer analysis).

I. DISTINCTIONS **[this section collects and summarizes items that may also appear later]**

A. Keynote Presentations

Keynote presentation at the *15th International SPIN workshop on Model Checking of Software*, Aug. 2008.

Keynote Presentation at *Tests and Proofs* conference, Feb. 2007.

Invited (keynote) presentation at multi-conference event: *Partial Evaluation and Program Manipulation (PEPM'04)*, *Principles and Practice of Declarative Programming (PPDP'04)*, *Static Analysis Symposium (SAS'04)* and *Logic-Based Program Synthesis and Transformation (LOPSTR'04)*.

B. Paper Awards and Distinctions

Best Paper Award (of 37 full papers accepted, of a total of 312 submissions) at the *Automated Software Engineering (ASE'07)* conference for "Scalable Automatic Test Data Generation from Modeling Diagrams" [C.33], Nov. 2007. The work also received an ACM SIGSOFT "Distinguished Paper" award.

Best Paper nomination (1 of 9 nominated, of 42 papers accepted, of a total of 175 submissions) at the 39th IEEE/ACM *International Symposium on Microarchitecture* (*MICRO 2006*) for "Adaptive Caches: Effective Shaping of Cache Behavior to Workloads" [C.29], December 2006.

Best Paper Award (1 of 2 given among 22 papers accepted, of a total of 84 submissions) in the *International Symposium on Software Testing and Analysis* (*ISSTA 2006*) for "DSD-Crasher: A Hybrid Analysis Tool for Bug Finding" [C.27], July 2006.

Best Paper Award (of 75 submitted, 25 accepted) in the *Generative Programming and Component Engineering conference* (*GPCE'04*) for "Generating AspectJ Programs with Meta-AspectJ" [C.18], October 2004.

Outstanding Paper Award (1 of 3 awarded) in the *USENIX Annual Technical Conference*, for "The Case for Compressed Caching in Virtual Memory Systems" [C.8], June 1999.

C. Teaching Distinctions

Faculty award (for teaching) in Spring 2006 by the "Minorities in CS" student group at Georgia Tech.

Among six academic faculty members named by students graduating with Honors (class of 2003) as "having had the most significant impact on them during their time at Georgia Tech." Interaction with students was entirely through classroom teaching.

Student-nominated for the 2003 Georgia Tech College of Computing Outstanding Faculty Teaching Award.

D. Other Distinctions

Member, IFIP Working Group 2.11 (Domain-Specific Program Generation), by invitation (since 2005).

Senior Membership, IEEE (since 2004).

2004 Georgia Tech College of Computing *Outstanding Junior Faculty Research Award*.

NSF CAREER award, January 2003.

MCD Fellowship, University of Texas at Austin, 1993 to 1995.

Graduation award (Drettakis fellowship) for highest GPA in graduating class of CS Department, U. Crete, 1993.

National Scholarship Foundation (IKY), Greece, annual scholarship for highest annual GPA in CS Department, University of Crete, 1990, 1991, 1992 (3 separate annual awards).

II. RESEARCH AND CREATIVE SCHOLARSHIP

A. Theses/Dissertations

[T.1] *Implementing Large-Scale Object-Oriented Components*, Ph.D. Dissertation, Department of Computer Sciences, University of Texas at Austin, 1999.

B. Refereed Publications

B.1. Journal Articles

[J. 15] Shan Shan Huang and Yannis Smaragdakis, "Morphing: Structurally Shaping a Class by Reflecting on Others", *ACM Transactions on Programming Languages and Systems*, accepted for publication.

[J. 14] Takayuki Usui, Reimer Behrends, Jacob Evans, and Yannis Smaragdakis, "Adaptive Locks: Combining Transactions and Locks for Efficient Concurrency", *Journal of Parallel and Distributed Computing*, accepted for publication.

[J.13] Yannis Smaragdakis, Christoph Csallner, and Ranjith Subramanian, "Scalable Satisfiability Checking and Test Data Generation from Modeling Diagrams", *Journal of Automated Software Engineering*, 16(1): 73-99, March 2009.

[J.12] Shan Shan Huang, David Zook, and Yannis Smaragdakis, "Statically Safe Program Generation with SafeGen", *Science of Computer Programming*, accepted for publication.

[J.11] Eli Tilevich and Yannis Smaragdakis, "J-Orchestra: Enhancing Java Programs with Distribution Capabil-

ities", *ACM Transactions on Software Engineering and Methodologies*, 19(1): 1-40, August 2009.

[J.10] Shan Shan Huang, David Zook, and Yannis Smaragdakis, "Domain-Specific Languages and Program Generation with Meta-AspectJ", *ACM Transactions on Software Engineering and Methodologies*, 18(2): 1-32, Nov. 2008.

[J.9] Christoph Csallner, Yannis Smaragdakis, and Tao Xie, "DSD-Crasher: A Hybrid Analysis Tool for Bug Finding", *ACM Transactions on Software Engineering and Methodologies*, 17(2): 1-37, April 2008.

[J.8] Eli Tilevich and Yannis Smaragdakis, "NRMI: Natural and Efficient Middleware", *IEEE Transactions on Parallel and Distributed Systems*, 19(2): 174-187, February 2008.

[J.7] Nikitas Liogkas, Blair MacIntyre, Elizabeth Mynatt, Yannis Smaragdakis, Eli Tilevich, and Stephen Voida, "Automatic Partitioning: A Promising Approach to Prototyping Ubiquitous Computing Applications", *IEEE Pervasive Computing*, 3(3): 40-47, July-September 2004.

[J.6] Christoph Csallner and Yannis Smaragdakis, "JCrasher: An Automatic Robustness Tester for Java", *Software: Practice & Experience*, 34(11): 1025-1050, September 2004.

[J.5] Scott Kaplan, Yannis Smaragdakis, and Paul Wilson, "Flexible Reference Trace Reduction for VM Simulations", *ACM Transactions on Modeling and Computer Simulation*, 13(1): 1-38, January 2003.

[J.4] Yannis Smaragdakis, Scott Kaplan, and Paul Wilson, "The EELRU Adaptive Replacement Algorithm", *Performance Evaluation*, 53(2): 93-123, July 2003.

[J.3] Brian McNamara and Yannis Smaragdakis, "Functional Programming with the FC++ Library", *Journal of Functional Programming (JFP)*, 14(4): 429-472, July 2004, Cambridge University Press.

[J.2] Yannis Smaragdakis and Brian McNamara, "FC++: Functional Tools for Object-Oriented Tasks", *Software: Practice & Experience*, 32(10): 1015-1033, August 2002.

[J.1] Yannis Smaragdakis and Don Batory, "Mixin Layers: An Object-Oriented Implementation Technique for Refinements and Collaboration-Based Designs", *ACM Transactions on Software Engineering and Methodologies*, 11(2): 215-255, April 2002.

B.2. Conference Papers

[C.39] Matthew Might, Yannis Smaragdakis, and David Van Horn, "Resolving and Exploiting the k-CFA Paradox: Illuminating Functional vs. Object-Oriented Program Analysis", *Programming Language Design and Implementation (PLDI)*, 2010. [**20%**]

[C.38] Martin Bravenboer and Yannis Smaragdakis, "Strictly Declarative Specification of Sophisticated Points-to Analyses", *Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, 2009, p. 243-262. [**17%**]

[C.37] Takayuki Usui, Reimer Behrends, Jacob Evans, and Yannis Smaragdakis, "Adaptive Locks: Combining Transactions and Locks for Efficient Concurrency", *Parallel Architectures and Compilation Techniques (PACT)*, 2009, p. 3-14. [**19%**]

[C.36] Martin Bravenboer and Yannis Smaragdakis, "Exception Analysis and Points-To Analysis: Better Together", *International Symposium on Software Testing and Analysis (ISSTA)*, 2009, p.1-12. [**27%**]

[C.35] Shan Shan Huang and Yannis Smaragdakis, "Expressive and Safe Static Reflection", *Programming Language Design and Implementation (PLDI)*, 2008, p. 79-89. [**18%**]

[C.34] Christoph Csallner, Nikolai Tillmann, and Yannis Smaragdakis, "DySy: Dynamic Symbolic Execution for Invariant Inference", *International Conference on Software Engineering (ICSE)*, 2008, p. 281-290.[**15%**]

[C.33] Yannis Smaragdakis, Christoph Csallner, and Ranjith Subramanian, "Scalable Automatic Test Data Generation from Modeling Diagrams", *Automated Software Engineering (ASE)*, 2007, p. 4-13. [**Best paper award. 12%**]

[C.32] Yannis Smaragdakis, Tony Kay, Reimer Behrends, Michal Young, "Transactions with Isolation and Cooperation", *Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, 2007, p. 191-210. [**21%**]

[C.31] Shan Shan Huang, David Zook, and Yannis Smaragdakis, "Morphing: Safely Shaping a Class in the Image of Others", *21st European Conference on Object-Oriented Programming (ECOOP)*, 2007, p. 399-424. [**18.5**%]

[C.30] Shan Shan Huang, David Zook, and Yannis Smaragdakis, "cJ: Enhancing Java with Safe Type Conditions", *Aspect-Oriented Software Development conference (AOSD)*, 2007, p.185-198. [**18**%]

[C.29] Ranjith Subramanian, Yannis Smaragdakis and Gabriel Loh, "Adaptive Caches: Effective Shaping of Cache Behavior to Workloads", *39th IEEE/ACM International Symposium on Microarchitecture* (*MICRO 2006*), p.385-396. [**24**%. **Best paper nominee (9 nominees of 42 total accepted papers)**]

[C.28] Eli Tilevich and Yannis Smaragdakis, "Transparent Program Transformations in the Presence of Opaque Code", *Generative Programming and Component Engineering conference (GPCE)*, 2006, p.89-94. [**34**%]

[C.27] Christoph Csallner and Yannis Smaragdakis, "DSD-Crasher: A Hybrid Analysis Tool for Bug Finding", *International Symposium on Software Testing and Analysis (ISSTA 2006)*, p.245-254. [**Best paper award**. **26**%]

[C.26] Shan Shan Huang and Yannis Smaragdakis, "Easy Language Extension with Meta-AspectJ", *2006 International Conference on Software Engineering (ICSE 2006), Emerging Results track*, p.865-868. [**33**%]

[C.25] Christoph Csallner and Yannis Smaragdakis, "Dynamically Discovering Likely Interface Invariants", *2006 International Conference on Software Engineering (ICSE 2006), Emerging Results track*, p.861-864. [**33**%]

[C.24] Eli Tilevich, Yannis Smaragdakis, and Marcus Handte, "Appletizing: Running Legacy Java Code Remotely From a Web Browser", *2005 International Conference on Software Maintenance (ICSM 2005)*, p.91-100. [**29**%]

[C.23] Shan Shan Huang, David Zook and Yannis Smaragdakis, "Statically Safe Program Generation with Safegen", *Generative Programming and Component Engineering (GPCE) 2005* Conference, p. 309-326. [**29**%]

[C.22] Christoph Csallner and Yannis Smaragdakis, "Check 'n Crash: Combining Static Checking and Testing", *2005 International Conference on Software Engineering (ICSE 2005)*, p. 422-431. [**14**%]

[C.21] Eli Tilevich and Yannis Smaragdakis, "Binary Refactoring: Improving Code Behind the Scenes", *2005 International Conference on Software Engineering (ICSE 2005)*, p. 264-273. [**14**%]

[C.20] Yannis Smaragdakis, "General Adaptive Replacement Policies", *2004 International Symposium on Memory Management (ISMM 2004)*, p. 108-119. [**34**%]

[C.19] Eli Tilevich and Yannis Smaragdakis, "Portable and Efficient Distributed Threads for Java", *2004 ACM Middleware* Conference, p. 478-492. [**14**%]

[C.18] David Zook, Shan Shan Huang, and Yannis Smaragdakis, "Generating AspectJ Programs with Meta-AspectJ", *Generative Programming and Component Engineering (GPCE) 2004* Conference, p. 1-18. [**Best Paper Award. 33% (25 accepted/75 submissions)**]

[C.17] Eli Tilevich, Stephan Urbanski, Yannis Smaragdakis and Marc Fleury, "Aspectizing Server-Side Distribution", *2003 Automated Software Engineering conference (ASE'03)*, p. 130-141. [**13**%]

[C.16] Eli Tilevich and Yannis Smaragdakis, "NRMI: Natural and Efficient Middleware", *International Conference on Distributed Computer Systems (ICDCS)* 2003, p. 252-261. [**17.5**%]

[C.15] Eli Tilevich and Yannis Smaragdakis, "J-Orchestra: Automatic Java Application Partitioning", *16th European Conference on Object-Oriented Programming (ECOOP '02)*. In Lecture Notes in Computer Science (LNCS) 2374, Springer-Verlag, p. 178-204. [**25**%]

[C.14] Yannis Smaragdakis, "Layered Development with (Unix) Dynamic Libraries", *7th International Conference on Software Reuse* (ICSR '02), April 2002. In Lecture Notes in Computer Science (LNCS) 2319, Springer-Verlag, p. 33-45. [**33**%]

[C.13] Yannis Smaragdakis and Don Batory, "Mixin-Based Programming in C++", in the *Generative and Component-Based Software Engineering Symposium (GCSE)*, Erfurt, Germany, October 2000. In Lecture Notes in Computer Science (LNCS) 2177, Springer-Verlag, p. 163-177. [**40%**]

[C.12] Brian McNamara and Yannis Smaragdakis, "Functional Programming in C++", *International Conference on Functional Programming (ICFP), 2000*, Montreal, Canada, September 2000, p.118-129. [**22**%]

[C.11] Yannis Smaragdakis, and Paul Wilson, "Performing Replacement in Modem Pools", *2000 USENIX Annual Technical Conference (USENIX '00)*, San Diego, California, June 2000, p.277-292. [**30**%]

[C.10] Don Batory, Richard Cardone, and Yannis Smaragdakis, "Object-Oriented Frameworks and Product Lines", *1st Software Product-Lines Conference (SPLC1), 2000*. [**46.5%**]

[C.9] Yannis Smaragdakis and Don Batory, "Scoping Constructs for Program Generators", *First Symposium on Generative and Component-Based Software Engineering (GCSE)*, October 1999. In Lecture Notes in Computer Science (LNCS) 1799, Springer-Verlag, p. 65-78. [**38%**]

[C.8] Paul Wilson, Scott Kaplan, and Yannis Smaragdakis, "The Case for Compressed Caching in Virtual Memory Systems", *1999 USENIX Annual Technical Conference (USENIX '99)*, Monterey, CA, June 1999, p.101-116. [**36.5%. 1 of 3 "Outstanding Papers"**]

[C.7] Scott Kaplan, Yannis Smaragdakis, and Paul Wilson, "Trace Reduction for Virtual Memory Simulations", *1999 ACM SIGMETRICS Annual Conference (SIGMETRICS '99*), Atlanta, Georgia, May 1999, p. 47-58. [**19.5**%]

[C.6] Yannis Smaragdakis, Scott Kaplan, and Paul Wilson, "EELRU: Simple and Effective Adaptive Page Replacement", *1999 ACM SIGMETRICS Annual Conference (SIGMETRICS '99)*, Atlanta, Georgia, May 1999, p. 122-133. [**19.5**%]

[C.5] Don Batory, Yannis Smaragdakis, and Lou Coglianese, "Architectural Styles As Adaptors", *First Working Conference on Software Architecture* (1999), San Antonio, Texas, February 1999. [**30**%]

[C.4] Yannis Smaragdakis and Don Batory, "Implementing Layered Designs with Mixin Layers", *12th European Conference on Object-Oriented Programming (ECOOP '98)*, Brussels, Belgium, July 1998. In Lecture Notes in Computer Science (LNCS) 1445, Springer-Verlag, p. 550-570. [**19**%]

[C.3] Yannis Smaragdakis and Don Batory, "Implementing Reusable Object-Oriented Components", *5th International Conference on Software Reuse* (ICSR '98), Victoria, British Columbia, June 1998, p. 36-45. [**32**%]

[C.2] Don Batory, Bernie Lofaso, and Yannis Smaragdakis, "JTS: Tools for Implementing Domain-Specific Languages", *5th International Conference on Software Reuse* (ICSR '98), Victoria, British Columbia, Jun. 1998, p.143-155. [**32**%]

[C.1] Yannis Smaragdakis and Don Batory, "DiSTiL: a Transformation Library for Data Structures", *Conference on Domain-Specific Languages* (DSL '97), p. 257-271, Santa Barbara, California, October 1997, p. 257-270. [**42%**]

B.3. Invited Keynote addresses

[K.3] Yannis Smaragdakis, "Combining Static and Dynamic Analysis for Program Understanding", invited presentation at the *15th International SPIN workshop on Model Checking of Software*, Aug. 2008.

[K.2] Yannis Smaragdakis, "Combining Static and Dynamic Reasoning for Bug Detection", keynote presentation at the *Tests and Proofs (TAP)* conference, February 2007, Zurich.

[K.1] Yannis Smaragdakis, "Program Generators and the Tools to Make Them", invited (keynote) presentation for the 2004 ACM symposium on *Partial Evaluation and Program Manipulation (PEPM'04)*, the 2004 international conference on the *Principles and Practice of Declarative Programming (PPDP'04)*, the 2004 *Static Analysis Symposium (SAS'04)* and the 2004 international symposium on *Logic-Based Program Synthesis and Transformation (LOPSTR'04)*.

B.4. Books and Parts of Books

[B.4] Yannis Smaragdakis and Scott Kaplan, "Adaptive Replacement Algorithm Templates and EELRU", in *The Handbook of Research on Advanced Operating Systems and Kernel Applications: Techniques and Technologies*, 2009.

[B.3] Yannis Smaragdakis and Shan Shan Huang, "Application Generators", survey article, in *Encyclopedia of Electrical and Electronics Engineering*, John Wiley and Sons, 2007. (Updated version of [B.1].)

[B.2] Yannis Smaragdakis, "A Personal Outlook on Generator Research", in C. Lengauer, D. Batory, C. Consel, and M. Odersky (eds.), *Domain-Specific Program Generation*, Lecture Notes in Computer Science (LNCS) 3016, Springer-Verlag, 2004.

[B.1] Yannis Smaragdakis and Don Batory, "Application Generators", survey article, in J.G. Webster (ed.), *Encyclopedia of Electrical and Electronics Engineering*, John Wiley and Sons, 2000.

B.5. Refereed Workshop Papers (with proceedings)

[W.10] Takayuki Usui, Yannis Smaragdakis, and Reimer Behrends, "Adaptive Locks: Combining Transactions and Locks for Efficient Concurrency", 4th ACM SIGPLAN Workshop on *Transactional Computing (TRANSACT)*, 2009.

[W.9] Yannis Smaragdakis, Tony Kay, Reimer Behrends, and Michal Young, "General and Efficient Locking without Blocking", ACM SIGPLAN workshop on *Memory Systems Performance and Correctness (MSPC)*, 2008.

[W.8] Shan Shan Huang and Yannis Smaragdakis, "Morphing Software for Easier Evolution", *Reflection, AOP and Meta-Data for Software Evolution (RAM-SE)* workshop, 2007.

[W.7] Shan Shan Huang and Yannis Smaragdakis, "Building Scalable Libraries with cJ", *2007 International Conference on Software Engineering (ICSE 2007), Companion Proceedings—Demo track*.

[W.6] Brian McNamara and Yannis Smaragdakis, "Syntax Sugar for FC++: lambda, infix, monads, and more", *Declarative Programming in the Context of OO Languages (DPCOOL'03)* at PLI'03.

[W.5] Eli Tilevich and Yannis Smaragdakis, "Automatic Application Partitioning: The J-Orchestra Approach", *ECOOP 2002 Workshop on Mobile Object Systems*.

[W.4] Brian McNamara and Yannis Smaragdakis, "Functional Programming with the FC++ Library", *2001 Workshop on C++ Template Programming*.

[W.3] Yannis Smaragdakis, "Interfaces for Nested Classes", 8th *Foundations of Object-Oriented Languages* workshop, London, England, January 2001.

[W.2] Brian McNamara and Yannis Smaragdakis, "Static Interfaces in C++", in the *C++ Template Programming Workshop*, Erfurt, Germany, October 2000.

[W.1] Yannis Smaragdakis and Don Batory, "Building Product-Lines with Mixin-Layers", *ECOOP '99 Workshop on Product-Line Architectures*.

C. Edited Proceedings

[E.4] Yannis Smaragdakis and Jeremy G. Siek (eds.), *Generative Programming and Component Engineering*, proceedings of GPCE'08, ACM 2008, ISBN 978-1-60558-267-2.

[E.3] Frank Pfenning and Yannis Smaragdakis (eds.), *Generative Programming and Component Engineering*, proceedings of GPCE'03, Lecture Notes in Computer Science (LNCS) 2830, Springer-Verlag.
[62 submissions, 21 selected: **34%**]

[E.2] Joerg Striegnitz, Kei Davis, and Yannis Smaragdakis (eds.), *Multiparadigm Programming with Object-Oriented Languages (MPOOL)*, John Von Neumann Institute for Computing (NIC), 2002. ISBN 3-00-009099-1.

[E.1] Kei Davis, Yannis Smaragdakis, and Joerg Striegnitz (eds.), *Multiparadigm Programming with Object-Oriented Languages (MPOOL)*, John Von Neumann Institute for Computing (NIC), 2001. ISBN 3-00-007968-8.

D. Patents

(Microsoft-owned) "Extensible Compiler Architecture." (With co-inventors Paul Kwiatkowski, David Richter, William Aitken, Brian Dickens, Charles Simonyi, M. Paramasivam, and Steve Eisner.)

E. Non-Refereed Publications

E.1. Invited Journal Articles (editor-reviewed but not refereed)

[JnR.1] Brian McNamara and Yannis Smaragdakis, "Functional Programming in C++ Using the FC++ Library", *ACM SIGPLAN Notices*, 36(4): 25-30, April 2001.

E.2. Invited Conference Papers

[CnR.2] Yannis Smaragdakis and Christoph Csallner, "Combining Static and Dynamic Reasoning for Bug Finding", invited paper in the *Tests and Proofs* conference (2007).

[CnR.1] Yannis Smaragdakis, Shan Shan Huang, and David Zook, "Program Generators and the Tools to Make Them", invited paper in the 2004 ACM symposium on *Partial Evaluation and Program Manipulation (PEPM'04)*.

E.3. Books and Parts of Books

[BnR.2] Kei Davis, Yannis Smaragdakis, and Joerg Striegnitz, "Multiparadigm Programming in Object-Oriented Languages", in *ECOOP 2002 workshop reader*, Lecture Notes in Computer Science (LNCS) 2548, Springer-Verlag, p. 154-159.

[BnR.1] Kei Davis, Yannis Smaragdakis, and Joerg Striegnitz, "Multiparadigm Programming in Object-Oriented

Languages", in *ECOOP 2001 workshop reader*, Lecture Notes in Computer Science (LNCS) 2323, Springer-Verlag, p. 131-134.

E.4. Workshop Presentations with Proceedings (non-refereed)

[WnR.2] Yannis Smaragdakis, "Reusable Object-Oriented Components", *Workshop on Institutionalizing Softw. Reuse (WISR '99)*.

[WnR.1] Yannis Smaragdakis, "Implementing Layered Designs with Mixin Layers", *European Conf. on Object-Oriented Programming (ECOOP '98) Doctoral Workshop*.

F. Panels and Lectures

NSF Proposal Panelist Invitations: 3 accepted (2002, 2003, 2008), 3 declined (2006, 2007, 2008).

Panelist, "Beyond AspectJ: AOP languages in 2017", main conference panel at *AOSD* 2007.

Lectures at ACM SIGPLAN Programming Languages Summer School, 2007 ("Programming Languages in the External World").

G. Research Proposals and Grants (Principal Investigator)

15. Dynamic Invariant Inference, Enhanced
Yannis Smaragdakis (PI), collaborative research with Michal Young (PI)
National Science Foundation
Amount awarded $334,000, for two years, expected Sep. 2009. (UMass portion: $167,000.)

14. Summer School: Theory and Practice of Language Implementation
Yannis Smaragdakis and Matthew Fluet
NSF, ACM SIGPLAN, Microsoft
Amount awarded: $22,000 ($15,000 NSF + $5,000 ACM SIGPLAN + $2,000 Microsoft), Spring 2009.

13. Concurrent Computing
Yannis Smaragdakis
Sun Equipment Grant
Sun Enterprise T5120 machine donated, est. value $25K, Oct. 2009

12. Programming Models for Transactional Memory
Yannis Smaragdakis (PI), Michal Young (co-PI)
National Science Foundation
Amount awarded: $330,291, for three years, beginning August 2008. (UMass portion: $234,362.)

11. Summer School: Logic and Theorem Proving in Programming Languages
Yannis Smaragdakis and Matthew Fluet
NSF, ACM SIGPLAN, Microsoft
Amount awarded: $23,000 ($12,000 NSF + $5,000 ACM SIGPLAN + $6,000 Microsoft), Spring 2008.

10. Program Analysis with Declarative Recursive Specifications
Yannis Smaragdakis
LogicBlox Inc.
Amount awarded: $85,000 as unrestricted gift, Dec.'07.

9. Memory Management in Logic Programming Languages
Yannis Smaragdakis
LogicBlox Inc.
Amount awarded: $110,000 as unrestricted gift, Sep.'06.

8. Parallelism in a Logic Programming Language
Yannis Smaragdakis
Optimi Co.
Amount awarded: $40,000 as unrestricted gift, Jan.'05, Aug.'05.

7. J-Orchestra: an Automatic Distribution System for Java Applications (continuation grant)
   Yannis Smaragdakis
   Georgia Electronic Design Center
   Amount awarded: $35,500. November 2003.

6. CAREER: Infrastructure for Software Generators and Components
   Yannis Smaragdakis
   National Science Foundation
   Amount awarded: $400,000 for five years, beginning August 2003.

5. ITR: Application Partitioning without Programming
   Yannis Smaragdakis
   National Science Foundation
   Amount awarded: $300,000 for three years, beginning October 2002.

4. J-Orchestra: an Automatic Distribution System for Java Applications (continuation grant)
   Yannis Smaragdakis
   Yamacraw Foundation / Georgia Electronic Design Center
   Amount awarded: $80,000. July 2002.

3. Automatic Partitioning of Java Applications
   Yannis Smaragdakis and Ken Mackenzie
   Sun AEG (Academic Equipment Grant)
   Value of equipment awarded: $40,000. April 2002.

2. J-Orchestra: an Automatic Distribution System for Java Applications
   Yannis Smaragdakis
   Yamacraw Foundation Grant
   Amount awarded: $80,000. July 2001.

1. Language Tools for Exploratory Programming of Highly Interactive Distributed Applications
   Blair McIntyre and Yannis Smaragdakis.
   Raytheon Faculty Fellowship
   Amount awarded: $20,000 for one year, beginning September 2000.

H. Research Proposals and Grants (Contributor)

1. I/O Intensive Embedded Systems: the Infopipe Approach
   Calton Pu (PI), Karsten Schwan, Ling Liu, Jonathan Walpole (co-PIs), Mustaque Ahamad, Yannis Smaragdakis, Charles Consel (contributors).
   DARPA grant (BAA 00-23: Program Composition for Embedded Systems)
   Amount awarded: ~$2,000,000 over four years, beginning September 2000.

III. TEACHING

A. Courses Taught

Term, Year	Course	# Students	Effectiveness[1]
Spring 2000	CS 4210 *Advanced Operating Systems*	28	4.8 / 5
Fall 2000	CS 8803 *Memory Management and Program Locality*	6	4.8 / 5
Spring 2001	CS 4210 *Advanced Operating Systems*	36	4.7 / 5
Fall 2001	CS 8803 *Object-Oriented Systems and Languages*	13	4.9 / 5
Spring 2002	CS 4210 *Advanced Operating Systems*	45	4.8 / 5
Fall 2002	CS 8803 *Object-Oriented Systems and Languages*	23	4.9 / 5
Spring 2003	CS 4210 *Advanced Operating Systems*	39	4.8 / 5
Fall 2003	CS 6246 *Object-Oriented Systems and Languages*	40	4.6 / 5
Spring 2004	CS 4210 *Advanced Operating Systems*	37	4.7 / 5

Term, Year	Course	# Students	Effectiveness[1]
Fall 2004	CS 6246 *Object-Oriented Systems and Languages*	37	4.7 / 5
Spring 2005	CS 1322 *Object-Oriented Programming*	256 (60 CS)	3.5 / 5
Fall 2005	CS 1322 *Object-Oriented Programming*	166 (17 CS)	3.5 / 5
Fall 2005	CS 6246 *Object-Oriented Systems and Languages*	30	5.0 / 5
Fall 2006	CIS 630 *Distributed Systems*	8	N/A[2]
Spring 2007	CIS 410/510 *Object-Oriented Languages*	13	9.3 / 10
Fall 2007	CIS 630 *Distributed Systems*	15	9.1 / 10
Spring 2008	CIS 423 *Software Methodologies II*	5	4.25 / 5
Spring 2008	CIS 410/510 *Object-Oriented Languages*	8	4.8 / 5
Spring 2009	CS 320 *Software Engineering*	35	4.0 / 5
Spring 2009	CS 591OO *Object-Oriented Languages*	18	4.4 / 5
Fall 2009	CS 491OO/691OO *Object-Oriented Languages*	22	4.7 / 5

[1.] Score for main single instructor metric in respective institutions. For Georgia Tech courses, reported score on question 10, "Instructor was an effective teacher", on student evaluations. For UOregon courses prior to Spring'08, reported score on question 21 ("In comparison to other UO courses this size and level, how do you evaluate this instructor?"). For UOregon courses in Spring'08 (online evaluation), reported score on "What was the quality of the instructor's teaching?" For UMass courses, reported score on "Overall rating of this instructor's teaching".

[2.] Before Spring 2008, UO had only hand-written (no numeric range) evaluations for classes with size <10.

B. Individual Guidance

B.1. Postdoctoral Associates Supervised

Christoph Reichenbach, Dec. 2009-present.

Martin Bravenboer, Mar. 2008-July 2009. Work has resulted in publications [C.36][C.38].

Reimer Behrends, Jan. 2007-July 2008. Work has resulted in publications [C.32][W.9][W.10][J.14][C.37].

B.2. Ph.D. Students Supervised

Kaituo Li, since Fall 2009.

Shan Shan Huang, since Fall 2003, graduated Aug. 2009, joined LogicBlox Inc. Working on application generators. Recipient of the Intel fellowship and the NSF graduate fellowship. Work has resulted in publications [C.18][CnR.1][C.23][C.26][C.30][C.31][W.7][W.8][J.10] [J.12][J.15].

Christoph Csallner, since Fall 2003, graduated Aug. 2008, joined UTexas Arlington as Assistant Professor. Working on automatic testing. Work has resulted in publications [J.6][J.9][C.22][C.25][C.27][C.33][C.34][J.13].

Dave Zook, since January 2002. Working on domain-specific languages and language syntax tools. Work has resulted in publications [C.18][CnR.1][C.23][C.30][C.31][J.10][J.12].

Brian McNamara, since April 2000, graduated Aug. 2004, joined Microsoft. Thesis title: "Multi-paradigm programming: novel devices for implementing functional and logic programming constructs in C++". Work has resulted in publications [C.12][JnR.1][W.2][W.4][J.2][J.3][W.6].

Eli Tilevich, since September 2000, graduated Dec. 2005, joined Virginia Tech as Assistant Professor. Working on language support for distributed computing. Thesis title: "Software Tools for Separating Distribution Concerns". Work has resulted in publications [C.15][W.5][C.16][C.17][J.7][C.19][C.21][C.24][C.28][J.8][J.11].

B.3. Service on Ph.D. Dissertation Commmittees (as member)

Donglin Liang (Dec. 2002); Rodric Rabbah (Mar. 2003); Zachary Alan Kurmas (Feb. 2004); Lex Spoon (Aug. 2005); Matt Might (Aug. 2007); Zebin Chen (May 2008); Gene Novark (proposal Spring 2009); Hannah Blau (proposal Spring 2010).

B.4. Other Ph.D. Independent Study students

Lex Spoon (Spring 2001). Tony Hannan (Spring 2006). Anthony Kay (Winter 2007-Winter 2008—work has resulted in publications [C.32][W.9]).

B.5. M.S. Thesis/Project students.

Marcus Handte (Summer 2002—work has resulted in publication [C.24]); Christoph Csallner (Summer 2002); Nikitas Liogkas (Spring 2003—work has resulted in publication [J.7]); Stephan Urbanski (Summer 2003—work has resulted in publication [C.17]); Takayuki Usui (Winter-Spring 2008—work has resulted in publications [W.10][C.37][J.14]), Divya Krishnan (Summer 2009—M.Sc. thesis second reader).

B.6. M.S. Independent Study students

Dean Pu Mao (Summer, Fall 2001); Marcus Handte (Spring 2002); Christoph Csallner (Spring 2002); Stephan Urbanski (Spring 2003); Zack Ross (Summer, Fall 2003); Daniel Popescu (Spring 2005); Ranjith Subramanian (Spring 2006—work has resulted in publications [C.29][C.33][J.13]); Jacob Evans (Fall 2008-Spring 2010—work resulted in publications [C.37][J.14]).

B.7. Undergraduate Independent Study students.

Austin Chau (Spring, Summer, Fall 2001); Kane See (Spring, Summer, Fall 2001); Hailemelekot Seifu (Summer, Fall 2001); Zach Haehn (Summer 2002); Shakti Chauhan (Fall 2005); Muhammad Ahsan Hussain (Spring 2006); Eli Gottlieb (Fall 2008, Spring 2009).

IV. SERVICE

A. Conference Committee service

A.1. Program Chair / Organizer / Steering Committee Service

Track Chair, *ICSE'09 Research Demonstrations.*

General Chair, *Generative Programming and Component Engineering (GPCE) conference*, 2008.

Organizer, *Oregon Programming Languages Summer School* (sponsored by the NSF and ACM SIGPLAN: a long-running event, probably the best known PL summer school in the US), 2008, 2009.

Steering Committee member, *Generative Programming and Component Engineering (GPCE)*, 2003-2008.

Program co-Chair (with Frank Pfenning of CMU), *Generative Programming and Component Engineering (GPCE) conference*, 2003. [62 submissions, 21 accepted: **34%**]

Organizer, *Multiparadigm Programming in OO Languages Workshop* in ECOOP 2002.

Organizer, *Multiparadigm Programming in OO Languages Workshop* in ECOOP 2001.

Program Chair, *C++ Template Programming Workshop*, 2001.

A.2. Program Committee Member

SIGSOFT Foundations of Software Engineering (FSE), **2010**, **2008**, **2006**.

International Conference on Software Engineering (ICSE), **2010**.

Automated Software Engineering (ASE), **2009**, **2010**.

Programming Language Design and Implementation (PLDI), **2009**.

Compiler Construction (CC), **2009**, **2007**.

Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), **2008**, **2007**.

International Symposium on Software Testing and Analysis (ISSTA), **2008**.

ICSE Research Demonstrations track, **2008**.

Principles of Programming Languages (POPL), **2008**.

ICOOOLPS (Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems) Workshop at ECOOP **2009**, **2008**.

Partial Evaluation and Semantics-Based Program Manipulation (PEPM), **2007**, **2003**.

Tests and Proofs (TAP), **2007**, **2010**.

Generative Programming and Component Engineering (GPCE) conference, **2006**, **2005**, **2002**.

International Symposium on Memory Management (ISMM), **2006** (+ expert review committee member **2009**).

ICSE Emerging Results track, **2006**.

Language Descriptions, Tools and Applications (LDTA), **2006**, **2004**.

Object-Oriented Programming track (OOPS) at SAC, **2006**, **2005**.

Aspect-Oriented Software Development conference (AOSD), **2006**.

2nd Meta O'Caml Workshop, **2005**.

Generative Programming Workshop at OOPSLA **2001**.

C++ Template Programming Workshop, **2000**.

ECOOP Doctoral Workshop, **1999**.

A.3. Conference Reviewing Activities

External reviewer for *ICSR*'5 (1998), *SIGMETRICS*'99, *IPDPS* 2001, *ISCA* 2004, *ECOOP* 2004, *ICSE*'06, *POPL*'07, *FSE'07*, *ASE'07*.

B. Editorial and Reviewer Work for Technical Journals

Reviewer for
ACM Transactions on Software Engineering and Methodologies (TOSEM)
ACM Transactions on Programming Languages and Systems (TOPLAS)
Journal of Functional Programming (Cambridge University Press)
IEEE Transactions on Computers
IEEE Transactions on Software Engineering
IEEE Transactions on Parallel and Distributed Systems
Software Practice and Experience (John Wiley and Sons)
Higher-Order and Symbolic Computation (Kluwer Academic Publishers)
Performance Evaluation (Elsevier)
Journal of Parallel and Distributed Computing (Elsevier)
International Journal of Parallel and Distributed Systems and Networks
Science of Computer Programming

C. Professional Activities

C.1. Memberships and Activities in Professional Societies

Senior Member, IEEE

Member, IFIP Working Group 2.11 (Domain-Specific Program Generation), by invitation

Member of the ACM

D. On-Campus Committees

D.1. University of Massachusetts

Graduate Admissions Committee, 2010.

Annual Faculty Review Committee, 2009-2010.

Graduate Program Committee, 2008-2009.

D.2. University of Oregon

Personnel Committee, 2007-2008.

Computing Lab re-design committee, 2006-2007.

D.3. Georgia Institute of Technology

College of Computing Undergraduate Curriculum Committee, 2005-2006.

College of Computing Graduate Committee, area coordinator for the Programming Languages and Compilers area, Sep. 2000-Aug.2005.

College of Computing, Dean Search Committee, 2002.

College of Computing Graduate Committee, area coordinator for the Software Engineering area, Sep. 2001-Sep. 2002.

E. Consulting

Curriculum consultant for Software Engineering B.S. degree, State University of New York, Oswego, August 2006.

LogicBlox Inc., June '06-present (language design and implementation consulting, 1-day/wk continuing engagement).

F. Invited Presentations

A large number of invited presentations at several institutions including:
Brown University, Dagstuhl seminar center, Microsoft Research, MIT, New York University, Northeastern University, Ohio State University, Oxford University, University of Athens, University of California/Berkeley, University of California/Davis, University of California/Santa Barbara, University of Chicago, University of Crete, University of Pittsburgh.