

## Adam Procter, Ph.D.

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CONTACT INFORMATION	Department of Computer Science University of Missouri 201 Engineering Building West Columbia, MO 65211 USA	+1 573 819 2767 <a href="mailto:adamprocter@mail.missouri.edu">adamprocter@mail.missouri.edu</a> <a href="http://adamprocter.com">http://adamprocter.com</a>
RESEARCH INTERESTS	Functional programming, semantics of programming languages, hardware synthesis from functional languages, hardware and software verification (especially for security), language-based security, model-driven implementation techniques for secure systems, computer-assisted theorem proving.	
EDUCATION	<b>University of Missouri</b> , Columbia, Missouri USA  Ph.D., Computer Science, December 2014 <ul style="list-style-type: none"><li>• Dissertation: <i>Semantics-Driven Design and Implementation of High-Assurance Hardware</i></li><li>• Advisor: <a href="#">William L. Harrison</a></li></ul> B.A., Computer Science, May 2005 <ul style="list-style-type: none"><li>• Minor in <a href="#">Mathematics</a></li><li>• Graduated <i>summa cum laude</i></li></ul>	
CONFERENCE PUBLICATIONS	Adam Procter, William L. Harrison, Ian Graves, Michela Becchi, and Gerard Allwein. Semantics Driven Hardware Design, Implementation, and Verification with ReWire. <i>Proceedings of the 2015 ACM SIGPLAN/SIGBED Conference on Languages, Compilers, Tools and Theories for Embedded Systems (LCTES'15)</i> , Portland, June 2015. (To appear.)  Ian Graves, Adam Procter, William L. Harrison, Michela Becchi, and Gerard Allwein. Hardware Synthesis from Functional Embedded Domain-Specific Languages: A Case Study in Regular Expression Compilation. <i>Proceedings of the 11th International Symposium on Applied Reconfigurable Computing (ARC'15)</i> , Bochum, April 2015.  Adam Procter, William L. Harrison, Ian Graves, Michela Becchi, and Gerard Allwein. Semantics-directed Machine Architecture in ReWire. <i>Proceedings of the 2013 International Conference on Field-Programmable Technology (ICFPT'13)</i> , Kyoto, December 2013.  William L. Harrison, Adam Procter, and Gerard Allwein. The Confinement Problem in the Presence of Faults. <i>Proceedings of the 14th International Conference on Formal Engineering Methods (ICFEM'12)</i> , Kyoto, November 2012.  Chris Hathhorn, Michela Becchi, William L. Harrison and Adam Procter. Formal semantics of heterogeneous CUDA-C: A modular approach with applications. <i>Proceedings of the 2012 Systems Software Verification Conference (SSV'12)</i> , Sydney, November 2012.  Adam Procter, William L. Harrison, and Aaron Stump. The Design of a Practical Theorem Prover for a Lazy Functional Language. <i>Proceedings of the 2012 Symposium on Trends in Functional Programming (TFP'12)</i> , St Andrews, UK, June 2012.	

	<p>Michela Becchi, Kittisak Sajjapongse, Ian Graves, Adam Procter, Vignesh Ravi, and Srimat Chakradhar. A Virtual Memory Based Runtime to Support Multitenancy in Clusters with GPUs. <i>Proceedings of the 21st International Symposium on High-Performance Parallel and Distributed Computing (HPDC'12)</i>, Delft, June 2012. <b>(Best paper award!)</b></p> <p>William L. Harrison, Benjamin Schulz, Adam Procter, Andrew Lukefahr, and Gerard Allwein. Towards Semantics-directed System Design and Synthesis. Invited paper. <i>Proceedings of the 2011 International Conference on Engineering of Reconfigurable Systems and Algorithms (ERSA'11)</i>, Las Vegas, July 2011.</p> <p>William L. Harrison, Adam M. Procter, Jason Agron, Garrin Kimmell, and Gerard Allwein. Model-driven Engineering from Modular Monadic Semantics: Implementation Techniques Targeting Hardware and Software. <i>Proceedings of the IFIP Working Conference on Domain Specific Languages (DSLWC)</i>, Oxford, July 2009.</p> <p>Pericles S. Kariotis, Adam M. Procter, and William L. Harrison. Making Monads First-class with Template Haskell. <i>Proceedings of the ACM SIGPLAN 2008 Haskell Symposium (Haskell '08)</i>, Victoria, BC, Canada, September 2008.</p> <p>William L. Harrison, Gerard Allwein, Andy Gill, and Adam Procter. Asynchronous Exceptions as an Effect. <i>Proceedings of the Ninth International Conference on Mathematics of Program Construction (MPC'08)</i>, Marseille, July 2008.</p>
JOURNAL PUBLICATIONS	<p>William L. Harrison and Adam M. Procter. Cheap (But Functional) Threads. Accepted for publication in <i>Higher-Order and Symbolic Computation</i>, draft available by request.</p>
PROFESSIONAL SERVICE	<p>External reviewer for IFL'11.</p>
TEACHING EXPERIENCE	<p><b>Department of Computer Science, University of Missouri</b></p> <ul style="list-style-type: none"> <li>• Instructor, Principles of Programming Languages, Fall 2010 and Fall 2012</li> <li>• Teaching Assistant, Principles of Programming Languages, Fall 2009, Spring 2008, and Spring 2007</li> <li>• Teaching Assistant, Production Languages (Programming in C), Fall 2007 and Fall 2006</li> <li>• Instructor, Production Languages (Programming in C), Spring 2007</li> <li>• Instructor, Algorithm Design and Programming I, Spring 2006</li> <li>• Teaching Assistant, Algorithm Design and Programming I, Fall 2005</li> </ul> <p><b>Japanese Studies Program, University of Missouri</b></p> <ul style="list-style-type: none"> <li>• Instructor, Elementary Japanese II, Spring 2005</li> <li>• Teaching Assistant, Elementary Japanese I, Fall 2004</li> </ul> <p><b>The Learning Center, University of Missouri</b></p> <ul style="list-style-type: none"> <li>• Tutor, Summer 2002—Spring 2004</li> </ul>
EMPLOYMENT	<p><b>Center for High Assurance Computing, University of Missouri</b></p> <p><i>Postdoctoral Fellow</i> November 2014—</p> <ul style="list-style-type: none"> <li>• Postdoctoral researcher at the <a href="#">Center for High Assurance Computing</a>.</li> <li>• Supervisor: Professor William L. Harrison.</li> </ul> <p><b>Department of Computer Science, University of Missouri</b></p> <p><i>Graduate Research Assistant</i> June 2008—December 2010</p>

- Research assistant at the [High Assurance Security Kernel \(HASK\) Lab](#), under Professor William L. Harrison.

*Graduate Teaching Assistant*

August 2005—May 2008  
August 2009—December 2009  
August 2010—December 2010

- Served as instructor or teaching assistant for several different computer science courses.
- Duties ranged from grading and holding office hours to teaching a large lecture course and supervising four teaching assistants.

## **Department of Computer Science, University of Iowa**

*Short-Term Scientific Employee (Summer Visitor)*

June 2010—August 2010

- Developed a theorem-proving system for monadic programs in collaboration with Professor Aaron Stump.

## **Division of Biological Sciences, University of Missouri**

*Computer Programmer*

June 2006—May 2009

- Developed a LabVIEW-based application to play back aural stimuli to insects in support of behavioral and neurological experiments.

## **Japanese Studies Program, University of Missouri**

*Peer Learning Assistant*

August 2004—May 2005

- Served as co-instructor for Elementary Japanese II in Spring 2005.
- Conducted two weekly lab sessions for Elementary Japanese I in Fall 2004.

## **The Learning Center, University of Missouri**

*Tutor*

June 2002—May 2004

- Tutored individual students in computer science and elementary Japanese.
- Held group tutoring sessions in computer science.

## **HONORS AND AWARDS**

### **Fellowships and Scholarships**

- Graduate Assistance in Areas of National Need (GAANN) Fellowship, 2011—2014
- Gilliom Graduate Fellowship in Cyber Security, 2007—2009
- State of Missouri Bright Flight Scholarship, 2000—2005

### **Honors**

- Honorary student marshal, University of Missouri College of Arts and Science commencement ceremony, May 2005
- University of Missouri College of Arts and Science dean's list every semester, Fall 2000—Spring 2005
- Phi Beta Kappa (junior-year inductee, 2003)

## **TECHNICAL SKILLS Programming Languages**

- Haskell, ML, Coq, C, Java, Perl, UNIX shell scripting, Python, Ruby, PHP, JavaScript, Visual Basic, LabVIEW

### **Hardware Description Languages**

- VHDL

Operating Systems

- UNIX/Linux, Microsoft Windows, Mac OS X

Other

- HTML, CSS, SQL, MySQL and Oracle databases, Linux system administration

LANGUAGES

English (native speaker)

Japanese (read, write, and speak at a high intermediate to advanced level)

German (once intermediate, now quite rusty)

CITIZENSHIP

USA

REFERENCES

Available upon request.