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HEATHER MILLER

Research Programming language and library design; language support for concurrency and distribution; Interests type systems; reactive programming EPFL, Lausanne, Switzerland Education 2009 -Ph.D. in Computer Science Advisor: Martin Odersky 2011 -University of Miami, Coral Gables, FL 2006 - 2009 BSEE in Electrical Engineering, Audio Engineering, with honors, May 2009 **Publications** Functional Programming For All! Scaling a MOOC for Students and Professionals Alike ICSE 2014 Heather Miller, Philipp Haller, Lukas Rytz, Martin Odersky ACM SIGSOFT International Conference on Software Engineering RAY: Integrating Rx and Async for Direct-Style Reactive Streams REM 2013 Philipp Haller, Heather Miller Workshop on Reactivity, Events and Modularity Instant Pickles: Generating Object-Oriented Pickler Combinators for Fast OOPSLA 2013 and Extensible Serialization Heather Miller, Philipp Haller, Eugene Burmako, Martin Odersky ACM SIGPLAN Conference on Object Oriented Programming, Systems, Languages and Applications FlowPools: A Lock-Free Deterministic Concurrent Dataflow Abstraction LCPC 2012 Aleksandar Prokopec, Heather Miller, Tobias Schlatter, Philipp Haller, Martin Odersky International Workshop on Languages and Compilers for Parallel Computing Tools and Frameworks for Big Learning in Scala: Leveraging the Language BigLearn 2011 for High Productivity and Performance Heather Miller, Philipp Haller, Martin Odersky NIPS Workshop on Parallel and Large-Scale Machine Learning

Academic Service Committees: Scala 2014 (organizer & co-chair), Scala 2013 (organizer & co-chair) Reviewer for: ECOOP 2013, Scala 2013

Parallelizing Machine Learning - Functionally: A Framework and Abstractions

Selected Broader Service

EPFL Computer Science Faculty Council, PhD Student Representative

Members include the dean of the college as well as representatives from every branch of the college, administrative, PhD, faculty, etc Quarterly meetings to steer the college and introduce new initiatives.

EPFL CS Graduate Student Association, President

Volunteer student organization with a mission to foster a sense of community and collaboration between different research groups in the college. Initiatives led/introduced:

- Research Day: college-wide showcase of labs' research activities
- PhD Student Open House: main recruiting event for CS doctoral program
- Social Events: aperós, ski trips, outings

EPFL CS Graduate Student Mentor

for Parallel Graph Processing Philipp Haller, Heather Miller

Scala Workshop

2010 - 2012

Scala 2011

2012 -

2009 - 2011

One-on-one mentoring of incoming doctoral students, aided students in integrating into EPFL's research environment and Switzerland as a whole.

Teaching Experience	Lead Teaching Assistant, Functional Programming Principles in Scala Popular Coursera MOOC on functional programming in Scala, with >100,000 participants to date	2012 - 2014
	 Lead TA organizing a team of graduate students, editing lecture videos, managing content production, designed course exercises with cloud-hosted grading, etc 	
	• Created extensive course evaluations with interactive visualizations; led to ICSE'14 paper	
	Instructor, Scala as a Research Tool ECOOP Tutorial	2013
	Lead Teaching Assistant, <i>Programming Principles</i> EPFL Undergraduate course on functional and logic programming	2012
	Teaching Assistant, <i>Programming Principles</i> EPFL Undergraduate course on functional and logic programming	2011
Open Source	Scala Programming Language, member of the Scala team	2011 -
	• Scala Spores (Scala Improvement Proposal SIP-21), project lead novel type-based abstraction for using closures safely in concurrent and distributed settings	
	• Scala Pickling, <i>project lead</i> novel framework for fast, boilerplate-free, extensible serialization	
	• Scala Futures and Promises (Scala Improvement Proposal SIP-14), team member unified non-blocking concurrency substrate for Scala, Akka, Play, and others	
	• Scala Documentation, <i>creator</i> , <i>writer</i> , <i>lead maintainer</i> a central website for community-driven documentation for the Scala project	
	• Scaladoc, co-maintainer documentation tool for Scala's official API documentation	
Awards	US National Science Foundation Graduate Research Fellowship EPFL Outstanding Teaching Award EPFL Computer Science Fellowship Most Outstanding Audio Engineering Student, University of Miami Most Outstanding Eta Kappa Nu Student, University of Miami Information Technology Scholarship, University of Miami John Farina Family Scholarship, University of Miami Eta Kappa Nu Tau Beta Pi	2011 - 2014 2012 2009 - 2010 2009 2009 2006 - 2009 2006 - 2009 2008 2008
	SMART US Department of Defense Scholarship Alternate Cooper Union Full Tuition Scholarship	2007 2004 - 2006
Selected Talks	Academese to English: Scala's Type System, Dependent Types and What It Means To You New York, NY, USA. March 1, 2014	NEScala 2014
	Instant Pickles: Generating Object-Oriented Pickler Combinators for Fast and Extensible Serialization Indianapolis, IN, USA. October 30, 2013	OOPSLA 2013
	PL Abstractions for Distributed Programming: Pickle Your Spores! Bloomington, IN, USA. October 25, 2013	Indiana University (invited)
	Spores: Distributable Functions in Scala St. Louis, MO, USA. September 19, 2013	Strange Loop 2013
	Open Issues in Dataflow Programming Montpellier, France. July 1, 2013	LaME 2013 (invited)
	On Pickles & Spores: Improving Scala's Support for Distributed Programming New York, NY, USA. June 12, 2013	ScalaDays 2013
	Futures & Promises in Scala 2.10 Philadelphia, PA, USA. April 2, 2013	PhillyETE 2013 (invited)