Lukasz Ziarek

Contact Information

338E Davis Hall
Buffalo NY, 14260-2500
USA

Fax: (716) 645-3464
Phone: (716) 645-1596
E-mail: lziarek@buffalo.edu

Education

Purdue University, West Lafayette, Indiana USA

Ph.D. Computer Science, May 2011.

University of Chicago, Chicago, Illinois USA

B.S., Computer Science, December 2003.

Academics

SUNY Buffalo, Buffalo, New York USA

Assistant Professor **August 2012 - Present**

Journal Publications

[J1] Yin Yan*, Shaun Gerard Cosgrove*, Varun Anand*, Amit Kulkarni*, Sree Harsha Konduri*, Steven Y. Ko, **Lukasz Ziarek**. Transactions on Mobile Computing. (to appear, 30 pages)

[J2] KC Sivaramakrishnan, **Lukasz Ziarek**, and Suresh Jagannathan. MultiMLton: A Multicore-Aware Runtime for Standard ML. Journal of Functional Programming. DOI:10.1017/S0956796814000161, 2015. (62 pages)

[J3] Ethan Blanton, Puneet Aurora*, Demian Lessa*, **Lukasz Ziarek**, and Bharat Jayaraman. Ji.Fi: Visual Test and Debug Queries for Hard Real-Time. Concurrency and Computation: Practice and Experience. DOI: 10.1002/cpe.3156, 2013. (34 pages)

[J4] KC Sivaramakrishnan, Mohammad Qudeisat, **Lukasz Ziarek**, Karthik Nagaraj, and Patrick Eugster. Efficient Sessions. Science of Computer Programming, Volume 78 Issue 2, 2013. (20 pages)

[J5] Adrian Holzer, **Lukasz Ziarek**, K.R. Jayaram, and Patrick Eugster. Abstracting Context in Event-based Software. Special Issue for Transactions on Aspect-Oriented Software Development: Modularity in Systems Software, Volume 7271, 2012. (44 pages)

[J6] **Lukasz Ziarek** and Suresh Jagannathan. Lightweight Checkpointing for Concurrent ML. Journal of Functional Programming, Volume 20, Issue 02, 2010. (36 pages)

[J7] **Lukasz Ziarek**, Stephen Weeks, and Suresh Jagannathan. Flattening Tuples in an SSA Intermediate Representation. Higher Order and Symbolic Computation, Volume 23, Number 3, 2008. (26 pages)

[J8] **Lukasz Ziarek**, Phil Schatz, and Suresh Jagannathan. Modular Checkpointing for Atomicity. Electronic Notes in Theoretical Computer Science, Volume 174, Issue 9, 2007. (30 pages)

Conference Publications

[C1] Justin Del Vecchio*, Feng Shen*, Kenny Yee*, Boyu Wang*, Steven Ko, **Lukasz Ziarek** String Analysis for Android Apps. International Conference on Automated Software Engineering — ASE 2014. (6 pages) [AR 23.6%]

[C2] Oliver Kennedy, Geoffrey Challen, **Lukasz Ziarek** and Jerry Antony Ajay*. PocketData: The Need for TPC-MOBILE. Seventh TPC Technology Conference on Performance Evaluation & Benchmarking — TPCTC 2015 (16 pages) [AR not available]

[C3] Oliver Kennedy and **Lukasz Ziarek**. Just-In-Time Data Structures. The biennial Conference on Innovative Data Systems Research — CIDR 2015. (10 pages) [AR not available]

[C4] Feng Shen*, Namita Vishnubhotla*, Chirag Todarka*, Mohit Arora*, Babu Prasad*, Eric Lehner*, Steve Ko, and **Lukasz Ziarek**. Information Flows as a Permission Mechanism. International Conference on Automated Software Engineering — ASE 2014. (12 pages) [AR 16.3%]

[C5] Yin Yan*, Shaun Gerard Cosgrove*, Varun Anand*, Amit Kulkarni*, Sree Harsha Konduri*, Steven Y. Ko, **Lukasz Ziarek**. Real-Time Android with RTDroid. International Conference on Mobile Systems, Applications, and Services — MobiSys 2014. (14 pages) [AR 13.5%]

[C6] KC Sivaramakrishnan, **Lukasz Ziarek**, Suresh Jagannathan. Rx-CML: A Prescription for Safely Relaxing Synchrony. Practical Aspects of Declarative Languages — PADL 2014. (16 pages) [AR 40%]

[C7] Shashank Holavanalli*, Don Manuel*, Vishwas Nanjundaswamy*, Brian Rosenberg*, Feng Shen*, Steven Y. Ko, **Lukasz Ziarek**. Flow Permissions for Android. International Conference on Automated Software Engineering — ASE 2013. (6 pages) [AR 17.0%]

[C8] KC Sivaramakrishnan, **Lukasz Ziarek**, Suresh Jagannathan. A Coherent and Managed Runtime for ML on the SCC. Many-core Applications Research Community Symposium — MARC 2012. **Best Paper** (6 pages) [AR 40%]

[C9] KC Sivaramakrishnan, **Lukasz Ziarek**, and Suresh Jagannathan. Eliminating read barriers through procrastination and cleanliness. International Symposium on Memory Management — ISMM 2012. (12 pages) [AR 40%]

[C10] **Lukasz Ziarek**, Siddharth Tiwary, and Suresh Jagannathan. Isolating Determinism in Multi-Threaded Programs. Runtime Verification — RV 2011. (15 pages) [AR 33.8%]

[C11] **Lukasz Ziarek**, KC Sivaramakrishnan, and Suresh Jagannathan. Composable Asynchronous Events. Programming Language Design and Implementation — PLDI 2011. (12 pages) [AR 23.3%]

[C12] Adrian Holzer, **Lukasz Ziarek**, K. R. Jayaram and Patrick Eugster. Putting Events in Context: Aspects for Event-based Distributed Programming. International Conference on Aspect Oriented Software Development — AOSD 2011. (12 pages) [AR 21.0%]

[C13] KC Sivaramakrishnan, Karthik Nagaraj, **Lukasz Ziarek**, and Patrick Eugster. Efficient Session Type Guided Distributed Interaction. International Conference on Coordination Models and Languages — COORD 2010. (16 pages) [AR 42.8%]

[C14] Filip Pizlo, **Lukasz Ziarek**, Petr Maj, Anthony Hosking, Ethan Blanton, and Jan Vitek. Schism: Fragmentation-Tolerant Real-Time Garbage Collection. Programming Language Design and Implementation — PLDI 2010. (14 pages) [AR 19.9%]

[C15] Filip Pizlo, **Lukasz Ziarek**, Ethan Blanton, Petr Maj and Jan Vitek. High-level Programming of Embedded Hard Real-Time Devices. EuroSys 2010. (14 pages) [AR 19.1%]

[C16] **Lukasz Ziarek**, KC Sivaramakrishnan, and Suresh Jagannathan. Partial Memoization of Concurrency and Communication. International Conference on Functional Programming — ICFP 2009. (12 pages) [AR 30.5%]

[C17] **Lukasz Ziarek**, Adam Welc, Ali-Reza Adl-Tabatabai, Vijay Menon, Tatiana Shpeisman, and Suresh Jagannathan. A Uniform Transactional Execution Environment for Java. European Conference on Object-Oriented Programming — ECOOP 2008. (26 pages) [AR 19.0%]

[C18] **Lukasz Ziarek**, Phil Schatz, and Suresh Jagannathan. Stabilizers: A Modular Checkpointing Abstraction for Concurrent Functional Programs. International Conference on Functional Programming — ICFP 2006. (12 pages) [AR 32.4%]

Workshop Publications

[W1] Muyuan Li*, Daniel E McArdle*, Jeffrey C Murphy*, Bhargav Shivkumar*, **Lukasz Ziarek** Adding Real-time Capabilities to a SML Compiler. The First IEEE Workshop on Declarative Programming for Real-Time and Cyber-Physical Systems — DPRTCPS 2015. (6 pages)

[W2] Geoffrey Challen, Jerry Antony Ajay*, Nick DiRienzo*, Oliver Kennedy, Anudipa Maiti*, Anandatirtha Nandugudi*, Guru Prasad*, Sriram Shantharam*, Jinghao Shi* and **Lukasz Ziarek** maybe We Should Enable More Uncertain Mobile App Programming. The 16th International Workshop on Mobile Computing Systems and Applications — HOT Mobile 2015. (6 pages)

[W3] Yin Yan*, Shaun Cosgrove*, Ethan Blanton, Steve Ko, **Lukasz Ziarek**. Real-Time Sensing on Android. International Workshop on Java Technologies for Real-Time and Embedded Systems — JTRES 2014. (10 pages)

[W4] Ethan Blanton and **Lukasz Ziarek**. Non-Blocking Inter-Partition Communication with Wait-Free Pair Transactions. International Workshop on Java Technologies for Real-Time and Embedded Systems — JTRES 2013. (10 pages)

[W5] Yin Yan*, Sree Harsha Konduri*, Amit Kulkarni*, Varun Anand*, Steve Ko, and **Lukasz Ziarek**. RTDroid: A Design for Real-Time Android. International Workshop on Java Technologies for Real-Time and Embedded Systems — JTRES 2013. (10 pages)

[W6] Sumit Agarwal*, Daniel Bellinger*, Oliver Kennedy, Ankur Upadhyay*, and **Lukasz Ziarek**. Monadic Logs for Collaborative Web Applications. International Workshop on the Web and Databases — WebDB 2013 (6 pages).

[W7] Ethan Blanton, Demian Lessa*, **Lukasz Ziarek**, and Bharat Jayaraman. JI.FI : Visual Test and Debug Queries for Hard Real-Time. International Workshop on Java Technologies for Real-Time and Embedded Systems — JTRES 2012. (10 pages)

[W8] **Lukasz Ziarek**. PRP: priority rollback protocol – a PIP extension for mixed criticality systems. International Workshop on Java Technologies for Real-Time and Embedded Systems — JTRES 2010. (6 pages)

[W9] KC Sivaramakrishnan, **Lukasz Ziarek**, Raghavendra Prasad, and Suresh Jagannathan. Lightweight Asynchrony using Parasitic Threads. Workshop on Declarative Aspects of Multi-Core Programming — DAMP 2010. (10 pages)

[W10] Filip Pizlo, **Lukasz Ziarek**, and Jan Vitek. Toward Java on Bare Metal with the Fiji VM. Java Technologies for Real-time and Embedded Systems — JTRES 2009. (10 pages)

[W11] **Lukasz Ziarek**, Suresh Jagannathan, Matthew Fluet, and Umut A. Acar. Speculative N-Way Barriers. Workshop on Declarative Aspects of Multi-Core Programming — DAMP 2009. (12 pages)

[W12] **Lukasz Ziarek** and Suresh Jagannathan. Memoizing Multi-Threaded Transactions. Workshop on Declarative Aspects of Multi-Core Programming — DAMP 2008. (15 pages)

[W13] **Lukasz Ziarek**, Phil Schatz, and Suresh Jagannathan. Modular Checkpointing for Atomicity. Multithreading in Hardware and Software: Formal Approaches to Design and Verification 2006. (14 pages)

FUNDING

Current Grants (2)

Title:	II-EN: Collaborative Research: Positioning MLton for Next-Generation Programming Languages Research
Agency:	NSF
Role:	PI
Effective Dates:	08/2014–07/2017
Total Amount:	$605,970
Other PIs/co-PIs:	Matthew Fluet (RIT)
UB Amount:	$381,640
Credit:	100%

Title:	II-NEW: Collaborative Research: An Extensible Software Infrastructure for Unmanned Aerial Vehicles
Agency:	NSF
Role:	PI
Effective Dates:	08/2015–07/2016
Total Amount:	$85,000
Other PIs/co-PIs:	David Liu (SUNY Binghamton)
UB Amount:	$42,268
Credit:	100%

Gifts (1)

Title:	Expressing Uncertainty Using the Maybe System
Agency:	Google
Role:	co-PI
Effective Dates:	08/2015–07/2016
Total Amount:	$38,656
UB Amount:	$38,656
Credit:	33.33%

Professional Service

Program Committee International Symposium on Practical Aspects of Declarative Languages 2016
Organization Committee Workshop on Reactive and Event-based Languages and Systems 2015
Program Committee IEEE Workshop on Declarative Programming for Real-Time and Cyber-Physical Systems 2015
Program Committee Workshop on Java Technologies for Real-time and Embedded Systems 2015
Program Chair Java Technologies for Real-time and Embedded Systems, 2015.
Organization Committee Workshop on Reactive and Event-based Languages and Systems 2014
Program Committee High Integrity Language Technology Conference, 2014.
Program Chair Splash Doctoral Symposium, 2014.
General Chair Java Technologies for Real-time and Embedded Systems, 2014.
Program Committee Java Technologies for Real-time and Embedded Systems, 2014.
Organization Committee Reactivity, Events and Modularity, 2013.
Program Chair Splash Doctoral Symposium, 2013.
Program Committee Declarative Aspects for Multi-Core Programming, 2012.
Program Committee Java Technologies for Real-time and Embedded Systems, 2011.
Program Committee Java Technologies for Real-time and Embedded Systems, 2010.
Graduate Student Board Representative, 2005 - 2008.

Journal Refereeing Concurrency and Computation Practice and Experience; Software: Practice and Experience; IEEE Software; ACM Transactions on Computing Education;Computer Languages, Systems & Structures.

NSF Panel Refereeing 2013,2014.

Guest Editor Transactions on Aspect-Oriented Software Development: Special Issue on Events, Aspects, and Modularity.
co-Editor The JTRES 2014 Special Issue of Concurrency and Computation: Practice and Experience

Invited Workshop High-Level Programming Models for Parallelism. NSF. 2013.

Invited Workshop Using Python in the Classroom. CS4HS, Buffalo State. 2013.
Invited Workshop Using Python in the Classroom. CSTA, Buffalo State. 2012.

Mentor Google Summer of Code. MLton.org. 2013.