

Stefan Muller

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Current Position

Gladwin Development Chair Assistant Professor
Illinois Institute of Technology

2020 - Present

Previous Position

Postdoctoral Fellow
Carnegie Mellon University
Supervisor: Jan Hoffmann

2018 - 2020

Education

PhD Computer Science - Carnegie Mellon University 2018
Thesis title: *Responsive Parallel Computation*
Advisor: Umut A. Acar

MS Computer Science - Carnegie Mellon University 2015

AB Computer Science, *summa cum laude* - Harvard University 2012
Thesis title: *SX10: A Language for Parallel Programming with Information Security*
Advisor: Stephen Chong

Publications

Conference Papers

- “Modeling and Analyzing Evaluation Cost of CUDA kernels” POPL 2021
Stefan K. Muller and Jan Hoffmann
- “Priority Scheduling for Interactive Applications” SPAA 2020
Kyle Singer, Noah Goldstein, Stefan K. Muller, Kunal Agrawal,
I-Ting Lee and Umut A. Acar
- “Responsive Parallelism with Futures and State” PLDI 2020
Stefan K. Muller*, Kyle Singer*, Noah Goldstein, Umut A. Acar,
Kunal Agrawal and I-Ting Angelina Lee
- “Fairness in Responsive Parallelism” ICFP 2019
Stefan K. Muller, Sam Westrick and Umut A. Acar

Publications (cont'd)

- “Competitive Parallelism: Getting Your Priorities Right” ICFP 2018
Stefan K. Muller, Umut A. Acar and Robert Harper
- “Responsive Parallel Computation: Bridging Competitive and PLDI 2017
Cooperative Threading”
Stefan K. Muller, Umut A. Acar and Robert Harper
- “Hierarchical Memory Management for Parallel Programs” ICFP 2016
Ram Raghunathan, Stefan K. Muller, Umut A. Acar and Guy Blelloch
- “Latency-Hiding Work Stealing” SPAA 2016
Stefan K. Muller and Umut A. Acar
- “Coupling Memory and Computation for Locality Management” SNAPL 2015
Umut A. Acar, Guy Blelloch, Matthew Fluet, Stefan K. Muller and Ram Raghunathan
- “Towards a Practical Secure Concurrent Language” OOPSLA 2012
Stefan Muller and Stephen Chong

Technical Reports

- Practical and Safe Abstractions for Interactive Computation via Linearity*
Stefan K. Muller, William A. Duff and Umut A. Acar
Technical Report CMU-CS-15-130

- Practical Abstractions for Concurrent Interactive Programs*
Stefan K. Muller, William A. Duff and Umut A. Acar
Technical Report CMU-CS-15-131

- Atomic Read-Modify-Write Operations are Unnecessary for Shared-Memory Work Stealing*
Umut Acar, Arthur Charguéraud, Stefan Muller and Mike Rainey
Inria Technical Report hal-00910130

Workshop Papers and Short Presentations

- “A Rhetorical Framework for Programming Language Evaluation” Onward! 2020
Stefan K. Muller and Hannah Ringler
Onward! Essays, SPLASH 2020
- “Bridging Theory and Practice in Interaction” SNAPL 2015
Stefan K. Muller and Umut A. Acar
Short Presentation

Working Drafts

- “Combining Source and Target Level Cost Analyses for OCaml Programs”
Stefan K. Muller and Jan Hoffmann

Talks

“Making Parallelism Abstractions More Practical”		
New Jersey Institute of Technology	Feb. 2020	
Northwestern University	Feb. 2020	
Illinois Institute of Technology	Feb. 2020	
Worcester Polytechnic Institute	Feb. 2020	
University of Rhode Island	Feb. 2020	
Simon Fraser University	Feb. 2020	
“Cost Models for Parallel Programs”		
Junior PL Day / Northwestern University	Nov. 2019	
CS Department Colloquium / Washington University in St. Louis	Sep. 2018	
PL Seminar / Harvard University	Mar. 2018	
PL Group Lunch / Carnegie Mellon University	Feb. 2018	
Various		
NSF Parlay Project Meeting / Massachusetts Institute of Technology	Sep. 2017	
Principles of Programming Retreat / Carnegie Mellon University	Oct. 2015	
Principles of Programming Seminar / Carnegie Mellon University	Apr. 2014	

Teaching

Illinois Institute of Technology		
CS 440 Programming Languages and Translators	Spring 2021	
Carnegie Mellon (as lead instructor)		
15-150 Principles of Functional Programming	Summer 2018	
Carnegie Mellon (as Teaching Assistant)		
15-897 Parallel Computing: Theory and Practice Prof. Umut Acar	Spring 2016	
15-814 Types and Programming Languages Prof. Robert Harper	Fall 2014	
15-210 Parallel and Sequential Algorithms and Data Structures Profs. Umut Acar and Danny Sleator	Fall 2013	
Harvard (as Teaching Fellow)		
CS61 Systems Programming and Machine Organization Prof. Stephen Chong	Fall 2010 Fall 2011	
CS51 Introduction to Computer Science II Prof. Greg Morrisett	Spring 2010 Spring 2011	

Spring 2012

Awards

NSF Graduate Research Fellowship / Honorable Mention	2014
NSF Graduate Research Fellowship / Honorable Mention	2013
CRA Outstanding Undergraduate Researcher Award / Honorable Mention	2012
Harvard University Certificate of Distinction in Teaching	Spring 2011
Intel (now Regeneron) Science Talent Search / Finalist (Top 40)	2008

Department Service

Illinois Tech - Undergraduate Studies Committee	2020 - Present
Illinois Tech - College of Computing Strategic Working Group	2021
CMU - PhD Admissions Committee	2015 - 2017
CMU - Speakers Club (evaluate talks for PhD speaking requirement)	2015 - 2020
CMU - PhD Open House Organizing Committee	2014, 2018

Professional Service

Program Committee

- PPoPP 2022 (Principles and Practice of Parallel Programming)
ICFP 2021 (International Conference on Functional Programming)

External Reviewing Committee

- ICFP 2020
OOPSLA 2021 (Object-Oriented Systems, Languages and Applications)

Artifact Evaluation Committee

- POPL 2020 (Principles of Programming Languages)

External Reviewing

- Transactions on Pattern Analysis and Machine Intelligence
ICFP 2019
Transactions on Parallel Computing
Theory and Practice of Logic Programming
SPAA 2018 (Symposium on Parallelism in Algorithms and Architectures)