

# Samuel McCauley

## EDUCATION

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STONY BROOK UNIVERSITY  
Stony Brook, NY, USA  
Ph.D. Computer Science, 2016  
Advised by Prof. Michael Bender

TUFTS UNIVERSITY  
Medford, MA, USA  
B.S. Computer Science and Mathematics, 2010  
Advised by Prof. Lenore Cowen

## RESEARCH EXPERIENCE

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Zuckerman Postdoctoral Fellow, Bar-Ilan University 2018-2019  
*Worked with Professors Tsvi Kopelowitz and Ely Porat on fundamental data structures.*

Postdoctoral Fellow, Wellesley College 2018  
*Performed independent research and teaching.*

Post Doc, IT University of Copenhagen 2016-2018  
*Worked with Professor Rasmus Pagh on scalable similarity search and locality-sensitive hashing.*

Chateaubriand Fellowship, École Normale Supérieure, Lyon 2015-2016  
*Worked with Professor Frédéric Vivien on scheduling malleable task graphs.*

Research Assistant, City University of Hong Kong 2015  
*Worked with Professor Minming Li on online scheduling with calibrations.*

NSF EAPSI Fellowship, National University Singapore 2014  
*Worked with Professor Seth Gilbert on range queries, dynamic distance oracles, and VLSI.*

Graduate Student Intern, Sandia National Laboratories 2012-2014  
*Worked with Dr. Vitus Leung on the scheduler component for the Structural Simulation Toolkit.*

Research Assistant, Stony Brook University 2011-2016  
*Worked with Professor Michael Bender on external memory and scheduling algorithms.*

Research Assistant, Tufts University 2009  
*Worked with Professors Lenore Cowen and Benjamin Hescott on discrete mathematics and coin sets.*

## TEACHING EXPERIENCE

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### Wellesley College:

CS115: Computing for the Socio-Technic Web Fall 2018

### IT University of Copenhagen:

Algorithm Design Project Spring 2017, Spring 2018  
Applied Algorithms Fall 2016, Fall 2017

### École Normale Supérieure, Lyon:

ER01: Data Structures for Big Data <i>With Professors Martin Farach-Colton and Michael Bender</i>	Winter 2015
<b>SUNY Old Westbury:</b>	
Computer Programming 1	Spring 2014
<b>Stony Brook University Teaching Assistantships:</b>	
Graduate Algorithms ( <b>TA of the year 2010</b> )	Fall 2012, Fall 2010
Theory of Computation	Summer 2011
Technical Writing	Spring 2011
<b>Tufts University Teaching Assistantships:</b>	
Discrete Mathematics	Fall 2009, Spring 2010

## ADVISING

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Irina Alina Gabriela Luca	MS, IT University of Copenhagen	Fall 2017
Viktor Joenson	MS, IT University of Copenhagen	Spring 2017

## AWARDS AND FELLOWSHIPS

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Zuckermann STEM Leadership Fellowship	2018-2019
Chateaubriand Fellowship	2015-2016
IPDPS Best Paper	2015
NSF EAPSI Fellowship	2014
Stony Brook Computer Science TA of the year	2010
Enhanced CS Department Chair Fellowship	2010

## PUBLICATIONS IN CONFERENCE PROCEEDINGS

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FOCS	<b>Bloom Filters, Adaptivity, and the Dictionary Problem</b> M. A. Bender, M. Farach-Colton, M. Goswami, R. Johnson, S. McCauley, and S. Singh	2018
SAGT	<b>Efficient Rational Proofs with Strong Utility-Gap Guarantees</b> J. Chen, S. McCauley, and S. Singh	2018
PODS	<b>Set Similarity Search for Skewed Data</b> S. McCauley, J. W. Mikkelsen, and R. Pagh	2018
BEYONDMR	<b>Adaptive MapReduce Similarity Joins (extended abstract)</b> S. McCauley and F. Silvestri	2018
SPAA	<b>Minimizing Total Weighted Flow Time With Calibrations</b> V. Chau, M. Li, S. McCauley, and K. Wang	2017
APDCM	<b>Minimizing I/Os in Out-of-Core Task Tree Scheduling</b> L. Marchal, S. McCauley, B. Simon, and F. Vivien	2017
SPAA	<b>Cache-Adaptive Analysis</b> M. A. Bender, E. D. Demaine, R. Ebrahimi, J. T. Fineman, R. Johnson, A. Lincoln, J. Lynch, and S. McCauley	2016

FUN	<b>Resource Optimization for Program Committee Members: A Subreview Article</b> M. A. Bender, S. McCauley, B. Simon, S. Singh, and F. Vivien	2016
PODS	<b>Anti-Persistence on Persistent Storage: History-Independent Sparse Arrays and Dictionaries</b> M. A. Bender, J. Berry, R. Johnson, T. M. Kroger, S. McCauley, C. A. Phillips, B. Simon, S. Singh, and D. Zage	2016
LATIN	<b>The I/O Complexity of Computing Prime Tables</b> M. A. Bender, R. Chowdhury, A. Conway, M. Farach-Colton, P. Ganapathi, R. Johnson, S. McCauley, B. Simon, and S. Singh	2016
ITCS	<b>Rational Proofs with Multiple Provers</b> J. Chen, S. McCauley, and S. Singh	2016
ISAAC	<b>Run Generation Revisited: What Goes Up May or May Not Come Down</b> M. A. Bender, S. McCauley, A. McGregor, S. Singh, and H. Vu	2015
WAOA	<b>Scheduling Parallel Jobs Online with Convex and Concave Parallelizability</b> R. Ebrahimi, S. McCauley, and B. Moseley	2015
IPDPS	<b>Two-Level Main Memory Co-Design: Multi-Threaded Algorithmic Primitives, Analysis, and Simulation</b> M. A. Bender, J. Berry, S. D. Hammond, K. S. Hemmert, S. McCauley, B. Moore, B. Moseley, C. A. Phillips, D. Resnick, and A. Rodrigues <b>Selected as Best Paper</b>	2015
COCOON	<b>The Range 1 Query (R1Q) Problem</b> M. A. Bender, R. Chowdhury, P. Ganapathi, S. McCauley, and Y. Tang	2014
SODA	<b>Cache-Adaptive Algorithms</b> M. A. Bender, R. Ebrahimi, J. T. Fineman, G. Ghasmiesfeh, R. Johnson, and S. McCauley	2014
SPAA	<b>Efficient Scheduling to Minimize Calibrations</b> M. A. Bender, D. P. Bunde, V. J. Leung, S. McCauley, and C. A. Phillips	2013
FUN	<b>The Kissing Problem: How to End a Gathering When Everyone Kisses Everyone Else Goodbye</b> M. A. Bender, R. Bose, R. Chowdhury, and S. McCauley	2012

## JOURNAL PUBLICATIONS

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JPDC	<b>Two-Level Main Memory Co-Design: Multi-Threaded Algorithmic Primitives, Analysis, and Simulation</b> M. A. Bender, J. Berry, S. D. Hammond, K. S. Hemmert, S. McCauley, B. Moore, B. Moseley, C. A. Phillips, D. Resnick, and A. Rodrigues	2017
TOCS	<b>Scheduling Parallel Jobs Online with Convex and Concave Parallelizability</b> R. Ebrahimi, S. McCauley, and B. Moseley	2016
TCS	<b>The Range 1 Query (R1Q) Problem</b> M. A. Bender, R. Chowdhury, P. Ganapathi, S. McCauley, and Y. Tang	2016
SUSCOM	<b>Simulation and Optimization of HPC Job Allocation for Reducing Communication and Cooling Costs</b> J. Meng, S. McCauley, F. Kaplan, V. Leung, and A. K. Coskun	2014
TOCS	<b>The Kissing Problem: How to End a Gathering When Everyone Kisses Everyone Else Goodbye</b> M. A. Bender, R. Bose, R. Chowdhury, and S. McCauley	2013

## PROGRAM COMMITTEES

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European Symposium on Algorithms, Track B	(ESA)	2019
International Parallel and Distributed Processing Symposium	(IPDPS)	2019
International Parallel and Distributed Processing Symposium	(IPDPS)	2018
International Conference on Parallel Processing	(ICPP)	2017