

# Samuel McCauley

## EDUCATION

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

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

## PROFESSIONAL EXPERIENCE

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Assistant Professor, Williams College	2019-present
Zuckerman Postdoctoral Fellow, Bar-Ilan University	2018-2019
Postdoctoral Fellow, Wellesley College	2018
Post Doc, IT University of Copenhagen	2016-2018

## TEACHING EXPERIENCE

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### Williams College:

CSCI 358: Applied Algorithms	Fall 2021, Spring 2020
CSCI 136: Data Structures and Advanced Programming	Spring 2021, Fall 2019
CSCI 256: Algorithm Design and Analysis	Fall 2020
CSCI 15: An Introduction to the Modern Internet	Winter 2020

### Wellesley College:

CS 115: Computing for the Socio-Technic Web	Fall 2018
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### 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
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### SUNY Old Westbury:

Computer Programming 1	Spring 2014
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## ADVISING

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Peter Zhao	BA, Williams College	Spring 2021
David Lee	BA, Williams College (coadvisor)	Spring 2021
Irina Alina Gabriela Luca	MS, IT University of Copenhagen	Fall 2017
Viktor Joenson	MS, IT University of Copenhagen	Spring 2017

## GRANTS

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NSF CRII: AF: RUI: New Approaches for Space-Efficient Similarity Search (ID: 2103813) 2021-2023

## 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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ESA **Telescoping Filter: A Practical Adaptive Filter** 2021  
D. J. Lee, S. McCauley, S. Singh, and M. Stein

WADS **Support Optimality and Adaptive Cuckoo Filters** 2021  
T. Kopelowitz, S. McCauley, and E. Porat

ICDT **Approximate Similarity Search Under Edit Distance Using Locality-Sensitive Hashing** 2021  
S. McCauley

ESA **Non-Cooperative Rational Interactive Proofs** 2019  
J. Chen, S. McCauley, and S. Singh

FOCS **Bloom Filters, Adaptivity, and the Dictionary Problem** 2018  
M. A. Bender, M. Farach-Colton, M. Goswami, R. Johnson, S. McCauley, and S. Singh

SAGT **Efficient Rational Proofs with Strong Utility-Gap Guarantees** 2018  
J. Chen, S. McCauley, and S. Singh

PODS **Set Similarity Search for Skewed Data** 2018  
S. McCauley, J. W. Mikkelsen, and R. Pagh

BEYONDMR **Adaptive MapReduce Similarity Joins (extended abstract)** 2018  
S. McCauley and F. Silvestri

SPAA **Minimizing Total Weighted Flow Time With Calibrations** 2017  
V. Chau, M. Li, S. McCauley, and K. Wang

APDCM **Minimizing I/Os in Out-of-Core Task Tree Scheduling** 2017  
L. Marchal, S. McCauley, B. Simon, and F. Vivien

SPAA **Cache-Adaptive Analysis** 2016  
M. A. Bender, E. D. Demaine, R. Ebrahimi, J. T. Fineman, R. Johnson, A. Lincoln, J. Lynch, and S. McCauley

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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Applied and Computational Discrete Algorithms	(ACDA)	2021
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