

Prashant Pandey

ACADEMIC INTEREST	My research interests lie at the intersection of Systems and Algorithms. Expertise: Data Structures and Algorithms for big data problems in Computational Biology, streaming, and File Systems.	
CONTACT INFORMATION	900 S Negley Avenue, Apt #6 Pittsburgh, PA - 15232 Website Google Scholar	E-mail: ppandey2@cs.cmu.edu Phone: (+1) 631-949-6948 https://prashantpandey.github.io https://goo.gl/Fz82hB
EDUCATION	Stony Brook University , Stony Brook, NY <i>PhD, Computer Science</i> <i>Advisors: Prof. Michael Bender and Prof. Rob Johnson</i>	December 2018 <i>GPA (3.8/4.0)</i>
	University of Pune , Pune, India <i>Bachelor of Engineering, Information Technology</i>	August 2007 - June 2011
WORK EXPERIENCE	Carnegie Mellon University , Pittsburgh, PA <i>Post Doctoral Associate, School of Computer Science</i> Stony Brook University , Stony Brook, NY <i>Research Assistant, Applied Algorithms Lab</i> Google , Manhattan, NY <i>Research Intern, Google Spanner</i> Google , Kirkland, WA <i>Research Intern, Google Cloud Infrastructure</i> Intel Labs , Portland, OR <i>Research Intern, Security and Privacy Lab</i> Intel Labs , Portland, OR <i>Research Intern, Security and Privacy Lab</i> TIBCO Inc. , Pune, India <i>Software Developer, Cloud Platform</i>	December 2018 - Present August 2013 - October 2018 May 2017 - August 2017 May 2016 - August 2016 May 2015 - August 2015 May 2014 - August 2014 July 2011 - June 2013
AWARDS AND ACHIEVEMENTS	<ul style="list-style-type: none">• Catacosinos Fellow• Best Paper Award FAST 2016• Runner's Up to Best Paper FAST 2015• A Special CS Department Chair Fellowship, Stony Brook University• University Rank Holder, University of Pune• Academic Excellence Scholarship, University of Pune.	2018 2016 2015 2013 2011 2009, 2010, 2011
PRESS ARTICLES ON RESEARCH	Finding a Needle in a Field of Haystacks. Cell Systems publishes research on Mantis, a new sequencing search tool. July 2018. Link: https://goo.gl/LJopwR A general purpose counting filter: making every bit count. The Morning Paper. August 2017. Link: https://goo.gl/nReGcF	
PAPERS UNDER SUBMISSION	Locality Sensitive Hashing for the Edit Distance Guillaume Marais, Dan DeBlasio, Prashant Pandey, and Carl Kingsford The Dictionary Problem, Optimal Searching, and Asymptotic Distortions of the DAM Michael A. Bender, Alex Conway, Martin Farach-Colton, William Jannen, Yizheng Jiao, Rob Johnson, Eric Knorr, Sara McAllister, Nirjhar Mukherjee, Prashant Pandey, Donald E. Porter, Jun Yuan, Yang Zhan Timely Reporting of Heavy Hitters using External Memory Prashant Pandey, Michael A. Bender, Jonathan W. Berry, Martin Farach-Colton, Rob Johnson, Thomas M. Kroege, Cynthia A. Phillips, Shikha Singh	

The Online Event-Detection Problem

Michael A. Bender, Jonathan W. Berry, Martin Farach-Colton, Rob Johnson, Thomas M. Kroeger, Prashant Pandey, Cynthia A. Phillips, Shikha Singh

PUBLICATIONS

An Efficient, Scalable and Exact Representation of High-Dimensional Color Information Enabled via de Bruijn Graph Search Problem *RECOMB 2019*

Fatemeh Almodaresi, Prashant Pandey, Michael Ferdman, Rob Johnson, Rob Patro

Buffered Count-Min Sketch on SSD: Theory and Experiments *ESA 2018*

Mayank Goswami, Dzejlja Medjedovic, Emina Mekic, Prashant Pandey

Mantis: A Fast, Small, and Exact Large-Scale Sequence-Search Index *RECOMB 2018 Cell Systems 2018*

Prashant Pandey, Fatemeh Almodaresi, Michael A. Bender, Michael Ferdman, Rob Johnson, and Rob Patro

Rainbowfish: A Succinct Colored de Bruijn Graph Representation *WABI 2017*

Fatemeh Almodaresi, Prashant Pandey, and Rob Patro

deBGR: An Efficient and Near-Exact Representation of the Weighted de Bruijn Graph *ISMB 2017 BIOINFORMATICS 2018*

Prashant Pandey, Michael A. Bender, Rob Johnson, and Rob Patro

Squeakr: An Exact and Approximate k-mer Counting System *BIOINFORMATICS 2017*

Prashant Pandey, Michael A. Bender, Rob Johnson, and Rob Patro

A General-Purpose Counting Filter: Making Every Bit Count *SIGMOD 2017*

Prashant Pandey, Michael A. Bender, Rob Johnson, and Rob Patro

A Fast x86 Implementation of Select *arXiv 2017*

Prashant Pandey, Michael A. Bender, and Rob Johnson

Writes Wrought Right, and Other Adventures in File System Optimization *TOS 2016*

Jun Yuan, Yang Zhan, William Jannen, Prashant Pandey, Amogh Akshintala, Kanchan Chandnani, Pooja Deo, Zardosht Kasheff, Michael Bender, Martin Farach-Colton, Rob Johnson, Bradley C. Kuszmaul, and Donald E. Porter

Optimizing Every Operation in a Write-Optimized File System *FAST 2016*

Jun Yuan, Yang Zhan, William Jannen, Prashant Pandey, Amogh Akshintala, Kanchan Chandnani, Pooja Deo, Zardosht Kasheff, Michael Bender, Martin Farach-Colton, Rob Johnson, Bradley C. Kuszmaul, and Donald E. Porter [**Best Paper Award**]

BetrFS: Write-Optimization in a Kernel File System *TOS 2015*

William Jannen, Jun Yuan, Yang Zhan, Amogh Akshintala, John Esmet, Yizheng Jiao, Ankur Mittal, Prashant Pandey, Phaneendra Reddy, Leif Walsh, Michael A. Bender, Martin Farach-Colton, Rob Johnson, Bradley C. Kuszmaul, and Donald E. Porter

BetrFS: A Right-Optimized Write-Optimized File System *FAST 2015*

William Jannen, Jun Yuan, Yang Zhan, Amogh Akshintala, John Esmet, Yizheng Jiao, Ankur Mittal, Prashant Pandey, Phaneendra Reddy, Leif Walsh, Michael A. Bender, Martin Farach-Colton, Rob Johnson, Bradley C. Kuszmaul, and Donald E. Porter [**Runner up to Best Paper**]

PATENT APPLICATIONS

Instructions that Facilitate the Implementation of the Fork System Call in Processes using Software Guard Extensions *March 2015*

Prashant Pandey, Mona Vij, Somnath Chakrabarti, Krystof C. Zmudzinski

Apparatus and Method For Implementing a Forked System Call in a System with a Protected Region *March 2015*

Prashant Pandey, Mona Vij, Somnath Chakrabarti, Krystof C. Zmudzinski

INVITED TALKS

Compact Representation of Annotated de Bruijn Graphs

Berkeley Lab, Berkeley CA, January 2018

deBGR: An Efficient and Near-Exact Representation of the Weighted de Bruijn Graph

Google Research, NY, September 2017

VMWare Research, Palo Alto CA, Aug 2017

Intel Software Guard Extensions (SGX)

Sandia National Laboratories, Livermore CA, August 2015

CONFERENCE
TALKS

Buffered Count-Min Sketch on SSD: Theory and Experiments

RSA 2018, Helsinki, Finland

Mantis: A Fast, Small, and Exact Large-Scale Sequence-Search Index

RECOMB 2018, Paris, France

Scheduling Problems in Write-Optimized Key-Value Stores

New Challenges in Scheduling Theory 20018, Aussois, France

deBGR: An Efficient and Near-Exact Representation of the Weighted de Bruijn Graph

ISMB 2017, Prague, Czech Republic

A General-Purpose Counting Filter: Making Every Bit Count

SIGMOD 2017, Chicago, IL

TEACHING
EXPERIENCE

Teaching Assistant, CS Dept, Stony Brook University

- CSE 548: Analysis of Algorithms
- CSE 535: Asynchronous Systems
- CSE 110: Introduction to Computer Science (Advanced Java)
- CSE 110: Introduction to Computer Science (Advanced Java)

Fall 2015

Fall 2015

Spring 2014

Fall 2013