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.

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	Website	https://prashantpandey.github.io
	Google Scholar	https://goo.gl/Fz82hB

EDUCATION	**Stony Brook University**, Stony Brook, NY	December 2018
	PhD, Computer Science	*GPA (3.8/4.0)*
	Advisors: Prof. Michael Bender and Prof. Rob Johnson	
	University of Pune, Pune, India	August 2007 - June 2011
	Bachelor of Engineering, Information Technology	

WORK EXPERIENCE	**Carnegie Mellon University**, Pittsburgh, PA	December 2018 - Present
	Post Doctoral Associate, School of Computer Science	
	Stony Brook University, Stony Brook, NY	August 2013 - October 2018
	Research Assistant, Applied Algorithms Lab	
	Google, Manhattan, NY	May 2017 - August 2017
	Research Intern, Google Spanner	
	Google, Kirkland, WA	May 2016 - August 2016
	Research Intern, Google Could Infrastructure	
	Intel Labs, Portland, OR	May 2015 - August 2015
	Research Intern, Security and Privacy Lab	
	Intel Labs, Portland, OR	May 2014 - August 2014
	Research Intern, Security and Privacy Lab	
	TIBCO Inc., Pune, India	July 2011 - June 2013
	Software Developer, Cloud Platform	

AWARDS AND ACHIEVEMENTS	• Catacosinos Fellow	2018
	• Best Paper Award FAST 2016	2016
	• Runner's Up to Best Paper FAST 2015	2015
	• A Special CS Department Chair Fellowship, Stony Brook University	2013
	• University Rank Holder, University of Pune	2011
	• Academic Excellence Scholarship, University of Pune.	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. Kroeger, 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

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, Dzejla 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 Patro, and Rob Johnson

Squeakr: An Exact and Approximate k-mer Counting System *BIOINFORMATICS 2017*
Prashant Pandey, Michael A. Bender, Rob Patro, and Rob Johnson

A General-Purpose Counting Filter: Making Every Bit Count *SIGMOD 2017*
Prashant Pandey, Michael A. Bender, Rob Patro, and Rob Johnson

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

BϵtrFS: 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**]

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   *Fall 2015*
- CSE 535: Asynchronous Systems   *Fall 2015*
- CSE 110: Introduction to Computer Science (Advanced Java)   *Spring 2014*
- CSE 110: Introduction to Computer Science (Advanced Java)   *Fall 2013*