# Allen B. Downey

## Education:

Ph.D. Computer Science, University of California at Berkeley, May 1997.

M.S. Civil Engineering, Massachusetts Institute of Technology, August 1990.

B.S. Civil Engineering, Massachusetts Institute of Technology, June 1989.

## Employment:

Franklin W. Olin College of Engineering, Professor of Computer Science, August 2003 to present.

Google Inc., Visiting Scientist, January 2009 to December 2010.

Boston University, Research Fellow, July 2002 to July 2003.

Wellesley College, Assistant Professor of Computer Science, July 2000 to June 2002.

Colby College, Assistant Professor of Computer Science, July 1997 to June 2000.

San Diego Supercomputer Center, Research Fellow, July 1995 to June 1997.

### Awards:

*Undergraduate Computational Engineering and Science Award*, Krell Institute, U.S. Department of Energy, 2012.

### Patents:

*Estimating round trip time of a network path*, US 8385225 B1, February 2013.

## Publications:

Recent publications available from `www.allendowney.com`

**Books:**

*Think DSP*, O'Reilly Media, August 2016.

*Think Java*, with Chris Mayfield, O'Reilly Media, June 2016.

*Think Python, 2nd Edition*, O'Reilly Media, December 2015. Portuguese translation, O'Reilly Media, June 2016.

*Think Stats, 2nd Edition: Exploratory Data Analysis*, O'Reilly Media, September 2014. Japanese translation, O'Reilly Media, 2014. German translation, O'Reilly Media, 2014. Czech translation, 2014.

*Think Bayes: Bayesian Statistics in Python*, O'Reilly Media, September 2013. Japanese translation, O'Reilly Media, 2014. Korean translation, Hanbit Media, 2014.

*Think Python: How to Think Like a Computer Scientist*, O'Reilly Media, August 2012. Chinese translation, Posts & Telecom Press, 2013. German translation, O'Reilly Media, 2013. German 2nd edition, O'Reilly Media, 2014. Persian translation, Kian Publication, 2014. Croatian translation, Dobar Plan, 2014.

*Think Complexity: Exploring Complexity Science with Python*, O'Reilly Media, March 2012. Chinese translation, China Machine Press, 2013.

*Think Stats: Probability and Statistics for Programmers*, O'Reilly Media, June 2011. Japanese translation, O'Reilly Media, 2012. German translation, O'Reilly Media, 2013. Chinese translation, Posts & Telecom Press, 2013.

*Think Java: How to think like a computer scientist*, Green Tea Press, June 2011. Chinese translation, Posts & Telecom Press, 2013.

*Python for Software Design*, Cambridge University Press, March 2009.

*How to think like a computer scientist: C++ Version*, Green Tea Press, March 2009. Chinese translation, Posts & Telecom Press, 2013.

*Learning Perl the Hard Way*, Green Tea Press, March 2009.

*The Little Book of Semaphores*, Green Tea Press, March 2009.

*Think Python: An Introduction to Software Design*, Green Tea Press, February 2009.

*Physical Modeling in MATLAB*, Green Tea Press, January 2008.

*How to think like a computer scientist: Learning with Python*, Green Tea Press, January 2002.

**Peer-reviewed journals:**

"TCP Self-Clocking and Bandwidth Sharing", *Computer Networks*, 51(13), pages 3844-3863, September 2007.

"Lognormal and Pareto Distributions in the Internet", *Computer Communications*, 28(7), pages 790-801, May 2005.

"The elusive goal of workload modeling", with Dror Feitelson, *ACM Sigmetrics Performance Evaluation Review*, special issue on Scheduling in Multiprogrammed Parallel Systems, edited by Kenneth Sevcik, 26(4), pages 14-29, March 1999.

"A parallel workload model and its implications for processor allocation", *Cluster Computing*, 1(1), pages 133–145, 1998.

"Exploiting process lifetime distributions for dynamic load balancing", with M. Harchol-Balter, *IEEE Transactions on Computer Systems*, 15(3), pages 253–285, August 1997.

**Peer-reviewed conferences:**

"Will Millennials Ever Get Married?", 14th Python in Science Conference (SciPy 2015), July 2015.

"A semi-automatic approach for project assignment in a capstone course", with Mark Chang, ASEE Annual Conference, June 2008.

"Designing a small-footprint curriculum in computer science", with Lynn Andrea Stein, Frontiers in Education (FIE) Conference, October 2006.

"An empirical model of TCP performance", IEEE MASCOTS, pages 45–54, September 2005.

"Evidence for long-tailed distributions in the Internet", ACM SIGCOMM Internet Measurement Workshop, pages 229–241, November 2001.

"The structural cause of file size distributions", IEEE MASCOTS, pages 361–370, August 2001.

"The structural cause of file size distributions", poster and extended abstract, ACM SIGMETRICS '01, pages 328–329, June 2001.

"Using `pathchar` to estimate Internet link characteristics", ACM SIGCOMM '99, pages 241–250, August 1999.

"Using `pathchar` to estimate Internet link characteristics", poster and extended abstract, ACM SIGMETRICS '99, pages 222–223, May 1999.

"Teaching experimental design in an operating systems class", ACM SIGCSE '99, pages 316-320, March 1999.

"Lachesis: a job scheduler for the Cray T3E", 4th Annual Workshop on Job Scheduling Strategies for Parallel Processors, at the merged 12th International Parallel Processing Symposium and 9th Symposium on Parallel and Distributed Processing, April 1998.

"The cost of interactive jobs on supercomputers", with Victor Hazlewood, Semi-Annual Cray User Group Meeting, May 1997.

"Using queue time predictions for processor allocation", Workshop on Job Scheduling Strategies for Parallel Processing, Springer-Verlag Lecture Notes on Computer Science Vol 1291, 1997.

"A parallel workload model and its implications for processor allocation", IEEE International Symposium on High Performance Distributed Computing (HPDC), August 1997.

"Predicting queue times on space-sharing parallel computers", 11th International Parallel Processing Symposium (IPPS), April 1997.

"Exploiting process lifetime distributions for dynamic load balancing", with M. Harchol-Balter, Best Integration of Systems and Theory award, ACM SIGMETRICS '96, May 1996.

"Exploiting process lifetime distributions for dynamic load balancing", with M. Harchol-Balter, poster, Symposium on Operating Systems Principles (SOSP), December 1995.

**Book chapters:**

"Exploiting process lifetime distributions for dynamic load balancing", with Mor Harchol-Balter, in *Mobility: Processes, Computers, and Agents*, edited by Dejan S. Milojicic, Frederick Douglis, and Richard G. Wheeler, Addison Wesley and the ACM Press, April 1999, pages 214-227.

**Technical reports:**

"Religious affiliation, education and Internet use", `http://arxiv.org/abs/1403.5534`, March 2014.

"Estimating the age of renal tumors", http://arxiv.org/abs/1203.6890, March 2012.

"A novel changepoint detection algorithm", http://arxiv.org/abs/0812.1237v1, December 2008.

"A changepoint detection algorithm for network measurements", Olin College Technical Report, August 2006.

"An empirical model of TCP performance", Olin College Technical Report TR-2003-001, August 2003.

"A model for speedup of parallel programs", U.C. Berkeley Technical Report CSD-97-933, January 1997.

"A note on 'The Limited Performance Benefits of Migrating Active Processes for Load Sharing,'" with M. Harchol-Balter, U.C. Berkeley Technical Report CSD-95-888, November 1995.

**Videos/Webcasts:**

"Learning to Love Bayesian Statistics", webcast, O'Reilly Media, May 2016.

"Data Exploration in Python", video series, O'Reilly Media, November 2015.

"Bayesian Statistics Made Simple", webcast, O'Reilly Media, October 2012.

"There's Only One Test", webcast, O'Reilly Media, October 2011.

**Workshops/Tutorials/Panels:**

"Computational Statistics", half-day tutorial, PyCon 2016, 2015, SciPy 2015.

"Bayesian Statistics Made Simple", half-day tutorial, ODSC Boston 2016; PyCon 2016, 2015, 2014, 2012, 2012; SciPy 2015; Boston Data Festival 2014, Boston Python User Group 2013, 2012.

"Ideation Workshop", at Google, Inc., December 2009 and July 2010.

"Python as a First Language", at Consortium for Computing Sciences in Colleges, Northeast Division, April 2007.

**Invited talks:**

Boston Bayesians, “Bayesian Bandits from Scratch”, July 2016.

Bentley University, “Learning to Love Bayesian Statistics”, April 2016.

University of Richmond, “Python as a way of thinking”, April 2016.

James Madison University, “Python as a way of thinking”, April 2016.

PyCaribbean, “Python as a way of thinking”, and “Regression Analysis with Python, Pandas, and StatsModels”, February 2016.

Strata + Hadoop World, “Learning to Love Bayesian Statistics”, October 2015.

Boston Data Festival, “The Inspection Paradox”, September 2015

SciPy 2015, “Will Millennials ever get married?”, July 2015.

SciPy 2015, “Basic Sound Processing in Python”, July 2015.

Boston Machine Learning Group, “Bayes’s Theorem and German Tanks”, March 2015.

PyData Boston, “Survival analysis in Python”, March 2015.

Boston Data Festival, “An introduction to Bayesian Statistics using Python”, November 2014.

Boston Data-Con, “Regression Analysis with Python, Pandas, and StatsModels”, September 2014.

Boston Python User Group, “The Red Line Problem”, February 2014.

The Computer-Based Math Education Summit, “Six ways coding teaches math”, New York, 2013

Boston Data Science Group, “How to be a good consumer of statistical analysis”, September 2013.

PyCon Taiwan 2013, “Keynote: Python Epistemology”, May 2013.

SIAM CSE, “Complexity Science and Computational Modeling”, February 2013.

Williams College, “Complexity, Computation, and Science”, October 2012.

Google, Inc. “Authors@Google: Think Complexity”, September 2012.

Google, Inc. “Authors@Google: Think Stats”, September 2011.