Allen B. Downey

Education:

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

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

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

Employment:

DrivenData, Staff Scientist, May 2022 to present.

Olin College of Engineering, Professor of Computer Science, August 2003 to May 2022.

Ashesi University, Visiting Lecturer, August to December 2020.

Harvard University, Visiting Professor of Computer Science, September 2019 to June 2020.

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.

Selected Publications:

Additional publications available from `allendowney.com`

Books:

Probably Overthinking It, University of Chicago Press, expected 2023.

Elements of Data Science, No Starch Press, expected 2023.

Modeling and Simulation in Python, No Starch Press, expected 2023.

Think Bayes, 2nd Edition, O'Reilly Media, June 2021.
Korean, Hanbit Media, Inc., 2022. Simplified Chinese, Posts & Telecom Press, 2023.

Think Java, 2nd Edition, with Chris Mayfield, O'Reilly Media, December 2019.
Polish, Helion, 2020. Simplified Chinese, China Electric Power Press, 2021.

Think Julia, with Ben Lauwens, O'Reilly Media, April 2019.
Traditional Chinese, GoTop Information Inc, 2019. Simplified Chinese, China Electric Power Press, 2020. Korean, Hanbit Media, 2020.

Think Complexity, 2nd edition, O'Reilly Media, August 2018.
Traditional Chinese, GoTop Information, 2018. Simplified Chinese, China Machine Press, 2019. Russian, DMK, 2019.

Think Data Structures, O'Reilly Media, July 2017.
Traditional Chinese, GoTop Information, 2018. Simplified Chinese, China Electric Power Press, 2018. Polish, Helion, 2018. Korean, Hanbit Media, 2018. Russian, Progress Kniga, 2018. Italian, Egea, 2018.

Think Perl 6, with Laurent Rosenfeld, O'Reilly Media, May 2017.
Simplified Chinese, China Electric Power Press, 2019.

Think DSP, O'Reilly Media, August 2016.
Simplified Chinese, Posts & Telecom Press, 2017. Russian, DMK, 2017

Think Java, with Chris Mayfield, O'Reilly Media, May 2016.
Simplified Chinese, Posts & Telecom Press, 2017. Polish, Helion, 2017.

Think Python, 2nd Edition, O'Reilly Media, December 2015.
Portuguese, Novatec, 2016. Traditional Chinese, GOTOP Information, 2016. Simplified Chinese, Posts & Telecom Press, 2016. Korean, Gilbut Publishing, 2017. Polish, Helion, 2017. Italian, Egea, 2018, Greek, Klidarithmos, 2020, German, dpunkt.verlag GmbH, 2021, Russian, Mann Ivanov and Ferber, 2021.

Think Stats, 2nd Edition, O'Reilly Media, September 2014.
Simplified Chinese, Posts & Telecom Press, 2014, Japanese, O'Reilly Japan, 2014, German, O'Reilly Media, 2014, German, dpunkt.verlag GmbH, 2022.

Think Bayes: Bayesian Statistics in Python, O'Reilly Media, September 2013.
Korean, Hanbit Media, 2013. Japanese, O'Reilly Media, 2014. Simplified Chinese, Posts & Telecom Press, 2015. Russian, DMK, expected 2019.

Think OS, Green Tea Press, 2013.

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

Think Complexity: Exploring Complexity Science with Python, O'Reilly Media, March 2012.
Simplified Chinese, China Machine Press, 2013. Korean, HongReung Science Publishing Company, 2016.

Think Stats: Probability and Statistics for Programmers, O'Reilly Media, June 2011.
Japanese, O'Reilly Japan, 2012. German, O'Reilly Verlag, 2012. Korean, Hanbit Media, 2013. Simplified Chinese, 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.
Simplified Chinese, Posts & Telecom Press, 2013.

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

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

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.

"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.

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

"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.

Book chapters:

"Teaching and Learning with Jupyter", online book at `https://jupyter4edu.github.io/jupyter-edu-book/`, November 2018.

"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.

Online articles:

"Are first babies more likely to be late?", Towards Data Science, September 2019.

"The Inspection Paradox is Everywhere", Towards Data Science, August 2019.

"The U.S. Is Retreating from Religion", Scientific American blog, June 2017.

"College Freshmen Are Less Religious Than Ever", Scientific American blog, May 2017.

"Programming as a Way of Thinking", Scientific American blog, April 2017.

Videos/Webcasts:

"In Search of The Fourth Wave", DSP Online Conference, September 2020.

"The Bayesian Zig Zag: Developing Probabilistic Models Using Grid Methods and MCMC", ACM Tech Talk, February 2019. PyMC Conference, October 2020.

"Understanding statistical inference with Python", online training, O'Reilly Media, October 2017, December 2017.

"Statistical Inference", webcast, O'Reilly Media, May 2016.

"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:

"Exploratory Data Analysis with Pandas and Matplotlib", PyData Global, November 2020.

Harvard University, "Eight Ways to Use Computation to Teach Everything Else", March 2019.

KEEN National Conference, "Eight ways to use computation to teach everything else", with Jason Moore, January 2019.

U.C. Davis, "Computation in STEM", with Jason Moore, half-day workshop, January 2018.

"Complexity Science", half-day tutorial, PyCon 2017, 2018, SciPy 2019.

"Introduction to Digital Signal Processing", half-day tutorial, PyCon 2017, 2018.

"Computational Statistics", half-day tutorial, PyCon 2016, 2015, SciPy 2015, 2017.

"Bayesian Statistics Made Simple", half-day tutorial, ODSC West 2020, ODSC Boston 2016, 2017, 2018. PyCon 2012-16; SciPy 2015, 2019. Boston Data Festival 2014, 2016. Boston Python User Group 2012-13.

Invited talks/Panels:

PyData NYC, "Chasing the Overton Window", November 2022.

PyData NYC, "The Inspection Paradox is Everywhere", November 2019.

SciPy 2019, "Generational changes in support for gun laws", July 2019.

PyData NYC, "Generational changes in support for gun laws", October 2018.

JupyterCon panel, "The Future of Jupyter in Education", August 2018.

Jupyter Popup Boston panel, "Jupyter in Education", March 2018.

U.C. Davis, "Python as a Way of Thinking", January 2018.

PyData Boston, "Religion in the U.S.", June 2017.

Boston Bayesians, "Bayesian Bandits from Scratch", July 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.

PyData Boston, "Survival analysis in Python", March 2015.

Interviews:

Learning Bayesian Statistics podcast, June 2021.

DataFramed, "Uncertainty in Data Science", September 2018.

Talk Python Podcast, "Python in Engineering", July 2017.

Big Beacon Radio, "Programming as a Way of Thinking", June 2017.