

K. Jarrod Millman

190 Doe Library
Berkeley Institute for Data Science
University of California, Berkeley
Berkeley, CA 94720 USA

<http://jarrodmillman.com>
millman@berkeley.edu

EDUCATION

PhD candidate in Biostatistics, University of California, Berkeley
MA in Biostatistics, University of California, Berkeley 2015
BA in Mathematics and Computer Science, Cornell University 1998

EMPLOYMENT

University of California, Berkeley, Berkeley, CA
Director of Computing, *Neuroscience Institute* 2004–2012
Interim Chief Administrative Officer, *Neuroscience Institute* 2009–2010
System Administrator, *Brain Imaging Center* 2000–2004
University of California, Davis, Davis, CA
Scientific Programmer, *Center for Neuroscience* 1998–2000
Cornell University, Ithaca, NY
Research Assistant, *Psychology Department* 1996–1998
Deep Springs College, Deep Springs, CA
Research Assistant, *Physiology Laboratory* 1994–1995

AWARDS AND SCHOLARSHIPS

Berkeley Institute for Data Science Fellow 2017–present
IAS / Park City Mathematics Institute Graduate Summer School 2016
Gene Golub SIAM Summer School 2015
Barry Goldwater Scholarship for Mathematics and Science 1995–1997
Telluride Association Scholarship 1995–1997
H. N. and Francis C. Berger Scholarship 1993–1995

PUBLICATIONS

Refereed journal articles

- [1] **K. J. Millman**, M. Brett, R. Barnowski, and J.-B. Poline. Teaching computational reproducibility for neuroimaging. *Frontiers in Neuroscience*, 12(727), 2018.
- [2] C. Neylon, J. Aerts, C. T. Brown, S. J. Coles, L. Hatton, D. Lemire, **K. J. Millman**, P. Murray-Rust, F. Pérez, N. Saunders, N. Shah, A. Smith, G. Varoquaux, and E. Willighagen. Changing computational research. The challenges ahead. *Source Code for Biology & Medicine*, 7(1):2, 2012.
- [3] S. Ghosh, A. Klein, B. Avants, and **K. J. Millman**. Learning from open source software projects to improve scientific review. *Frontiers in Computational Neuroscience*, 6(18), 2012.
- [4] **K. J. Millman** and M. Aivazis. Python for scientists and engineers. *Computing in Science & Engineering*, 13(2):9–12, 2011.

- [5] J. L. Teeters, K. D. Harris, **K. J. Millman**, B. A. Olshausen, and F. T. Sommer. Data sharing for computational neuroscience. *Neuroinformatics*, 6(1):47–55, 2008.
- [6] **K. J. Millman** and M. Brett. Analysis of Functional Magnetic Resonance Imaging in Python. *Computing in Science & Engineering*, 9(3):52–55, 2007.

Refereed book chapters and conference proceedings

- [1] **K. J. Millman**, K. Ottoboni, N. A. P. Stark, and P. B. Stark. Reproducible applied statistics: Is tagging of therapist-patient interactions reliable? In J. Kitzes, D. Turek, and F. Deniz, editors, *The Practice of Reproducible Research: Case Studies and Lessons from the Data-Intensive Sciences*, pages 191–202. University of California Press, 2017.
- [2] **K. J. Millman** and F. Pérez. Developing open source scientific practice. In V. Stodden, F. Leisch, and R. D. Peng, editors, *Implementing Reproducible Research*, pages 149–183. Chapman and Hall/CRC, 2014.
- [3] **K. J. Millman** and T. Vaught. The state of SciPy. In G. Varoquaux, T. Vaught, and K. J. Millman, editors, *Proceedings of the 7th Python in Science Conference*, pages 5–10, Pasadena, CA USA, 2008.
- [4] **K. J. Millman** and M. D’Esposito. Data and analysis management for Functional Magnetic Resonance Imaging studies. In *Proceedings of the International Advanced Database Conference*, pages 24–28, San Diego, CA USA, 2006.
- [5] B. A. Olshausen and **K. J. Millman**. Learning sparse codes with a mixture-of-Gaussians prior. *Advances in Neural Information Processing Systems*, 12:841–847, 2000.

Manuscripts under revision or submitted

- [1] P. Virtanen, R. Gommers, T. E. Oliphant, M. Haberland, T. Reddy, D. Cournapeau, E. Burovski, P. Peterson, W. Weckesser, J. Bright, S. J. van der Walt, M. Brett, J. Wilson, **K. J. Millman**, N. Mayorov, A. R. J. Nelson, E. Jones, R. Kern, E. Larson, C. J. Carey, Í. Polat, Y. Feng, E. W. Moore, J. VanderPlas, D. Laxalde, J. Perktold, R. Cimrman, I. Henriksen, E. A. Quintero, C. R. Harris, A. M. Archibald, A. H. Ribeiro, F. Pedregosa, P. van Mulbregt, and SciPy 1.0 Contributors. SciPy 1.0—fundamental algorithms for scientific computing in Python. *arXiv preprint arXiv:1907.10121*, 2019.

Conference abstracts

- [1] **K. J. Millman** and M. Brett. Reproducible research for neuroimaging. In *4th INCF Congress of Neuroinformatics*, 2011.
- [2] S. Ghosh, C. Burns, D. Clark, K. Gorgolewski, Y. Halchenko, C. Madison, R. Tungaraza, and **K. J. Millman**. Nipype: Opensource platform for unified and replicable interaction with existing neuroimaging tools. In *16th Annual Meeting of the Organization for Human Brain Mapping*, 2010.
- [3] M. Brett, J. E. Taylor, C. Burns, **K. J. Millman**, F. Pérez, A. Roche, B. Thirion, and M. D’Esposito. NIPY: an open library and development framework for fMRI data analysis. *NeuroImage*, 47:S196, 2009.
- [4] M. Trumpis, D. Sheltraw, **K. J. Millman**, and M. T. D’Esposito. Python imaging tools for reconstructing magnetic resonance images. *Python for Scientific Computing Conference*, 2006.
- [5] M. Brett, J. E. Taylor, and **K. J. Millman**. Nipy: Neuroimaging software in python. *Python for Scientific Computing Conference*, 2005.
- [6] J. E. Taylor, K. J. Worsley, M. Brett, Y. Cointepas, J. D. Hunter, **K. J. Millman**, J.-B. Poline, and F. Pérez. BrainPy: an open source environment for the analysis and visualization of human brain data. *Neuroimage*, 26:763, 2005.
- [7] D. J. Field and **K. J. Millman**. Learning wavelet-like receptive fields from natural scenes using a biologically plausible decorrelation network. *Association for Research in Vision and Ophthalmology*, 1998.
- [8] **K. J. Millman** and J. M. Szewczak. Nonlinear methods for the analysis of ventilatory control. *The Physiologist*, 37(5):A–64, 1994.

Technical reports

- [1] F. Sommer, B. A. Olshausen, and **K. J. Millman**. Data sharing for computational neuroscience central services. Technical report, National Science Foundation Collaborative Research in Computational Neuroscience Workshop, University of Maryland University College, 7 June 2007.

PRESENTATIONS

National

- Sparse Phase Recovery and the Sum of Squares Method. *Theory Group*, Department of Electrical Engineering and Computer Sciences, UC Berkeley, Berkeley, CA, March 2019.
- Clustering of Approximation Stable Instances. *Data Science Fellow Lunch Talk*, Berkeley Institute for Data Science, UC Berkeley, Berkeley, CA, May 2018.
- Stable Instances of MAX CUT. *Theory Group*, Department of Electrical Engineering and Computer Sciences, UC Berkeley, Berkeley, CA, April 2018.
- Graphs and complex networks across domains. *GraphXD Workshop*, Berkeley Institute for Data Science, UC Berkeley, Berkeley, CA, March 2018.
- Teaching statistical computing to undergraduates. *SIAM Conference on Computational Science & Engineering*, Salt Lake City, UT, March 2015.
- Neuroimaging in Python (NiPy) architecture. *Organization for Human Brain Mapping Meeting*, Seattle, WA, June 2013.
- Reproducibility and computationally intensive, data-driven research. *SIAM Conference on Computational Science & Engineering*, Boston, MA, February 2013.
- The challenge of reproducible research in the computer age. *SIAM Conference on Computational Science & Engineering*, Reno, NV, March 2011.
- A foundation for mathematical and scientific computing. *SciPy Conference*, Austin, TX, June 2010.
- Codes, keys, and trap doors: Cryptography and the practice of hiding information. *SecureIT Conference for Information Technology & Network Security*, San Diego, CA, March 2008.
- Ensuring Security policy compliance by automating system configuration. *EDUCAUSE Security Professionals Conference*, Denver, CO, April 2007.
- Mandatory access control and the principle of least privilege. *SecureIT Conference for Information Technology & Network Security*, Sacramento, CA, March 2007.
- Automating security policy implementation. *SecureIT Conference for Information Technology & Network Security*, Anaheim, CA, March 2006.
- FMRI study management and analysis at UC Berkeley. *National FMRI Data Center Meeting*, Dartmouth College, Hanover, NH, January 2006.
- Running a secure Fedora Linux machine. *Information Technology Security Symposium*, University of California, Davis, Davis, CA, June 2005.
- High speed networking for functional MRI. *Corporation for Education Network Initiatives in California Conference*, San Diego, CA, May 2002.

International

- Python for Statisticians. *SciPy India Conference*, Indian Institute of Technology Bombay, Mumbai, Maharashtra, India, December 2015.

- The challenge of reproducible research in the computer age. *Applied Mathematics Perspectives 2011*, University of British Columbia, Vancouver, British Columbia, Canada, July 2011.
- Experimental data and scientific computing. *SciPy India Conference*, International Institute of Information Technology, Hyderabad, Andhra Pradesh, India, December 2010.
- A foundation for mathematical and scientific computing. *SciPy Europe Conference*, École Normale Supérieure, Paris, France, July 2010.
- The SciPy web and documentation tools. *SciPy India Conference*, Technopark, Thiruvananthapuram, Kerala, India, December 2009.

TEACHING

University of California, Berkeley (Lead Instructor)

Statistics 222, <i>Masters of Statistics Capstone Project</i>	Spring 2016
Statistics 159/259, <i>Reproducible and Collaborative Statistical Data Science</i>	Fall 2015
Statistics 133, <i>Concepts in Computing with Data</i>	Summer 2014

PROFESSIONAL SERVICE

Editorial

Review Editor, <i>Frontiers in Neuroinformatics</i>	2011–present
Guest Editor, <i>Computing in Science & Engineering</i>	2011
Review Editor, <i>Open Research Computation</i>	2010–2012
Review Editor, <i>Frontiers in Neuroscience Methods</i>	2010–2011
Proceedings Editor, <i>SciPy Conference</i>	2008–2013

Committee

Neuroimaging Task Force, <i>International Neuroinformatics Coordinating Facility</i>	2010
Information Technology Architecture Committee, <i>University of California, Berkeley</i>	2007–2010
Campus Information Security & Privacy Committee, <i>University of California, Berkeley</i>	2006–2010
Calnet Technical Team, <i>University of California, Berkeley</i>	2005–2009

Conference

Organizer, <i>GraphXD (Graphs Across Domains) Workshop</i>	2018
Mini-symposium Organizer, <i>SIAM Conference on Computational Science & Engineering</i>	2011–2015
Program Committee, <i>EuroSciPy Conference</i>	2010–2011
Program Committee, <i>Educause Security Professionals Conference</i>	2010
Organizer, <i>Open Research Computing in Python</i>	2010
Chair, <i>SciPy India Conference</i>	2009–2012
Chair, <i>SciPy Conference</i>	2008–2011
Program Committee, <i>Secure IT Conference on Information Technology & Network Security</i>	2007–2009

Software

Release Manager, <i>NetworkX</i>	2017–present
Board of Directors, <i>NumFOCUS</i>	2011–2015
Steering Committee, <i>SciPy Development Team</i>	2008–2011
Release Manager, <i>NumPy</i>	2007–2009
Release Manager, <i>SciPy</i>	2007–2009
Mentor, <i>Google Summer of Code, Python Software Foundation</i>	2007–2009