K. Jarrod Millman

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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 — *2017–2020*
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, İ. 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

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

PROFESSIONAL SERVICE

Editorial

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

Committee

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

Conference

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

Software

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