

Oluwasanmi Koyejo

Curriculum Vitae

Assistant Professor
Department of Computer Science,
University of Illinois at Urbana-Champaign

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Affiliations

Beckman Institute for Advanced Science and Technology
Coordinate Science Laboratory
Department of Electrical and Computer Engineering
Department of Statistics

Academic Positions

2016 -	Assistant Professor	University of Illinois at Urbana-Champaign
2014 - 2016	Engineering Research Associate	Stanford University (PI: R. Poldrack)
2013 - 2014	Research Associate	UT Austin (PI: R. Poldrack & P. Ravikumar)

Education

2013 - 2013	Postdoctoral Fellow	UT Austin (PI: R. Poldrack & P. Ravikumar)
2013	Ph.D., Electrical Engineering	UT Austin (Advisor: J. Ghosh)
2008	M.S., Electrical Engineering	UT Austin
2005	B.S. (Hons), Electrical Engineering & Minor in Statistics	New Jersey Institute of Technology (NJIT)

Scientific products

Technical publications

1. Michael Riis Andersen, Lars Kai Hansen, Ole Winther, Russell A. Poldrack, and **Oluwasanmi Koyejo**. Bayesian structure learning for dynamic brain connectivity. In *Proceedings of the 21st International conference on Artificial Intelligence and Statistics (AISTATS)*, 2017
2. Oscar Esteban, Daniel Birman, Marie Schaer, **Oluwasanmi O Koyejo**, Russell A Poldrack, and Krzysztof J Gorgolewski. MRIQC: Advancing the automatic prediction of image quality in MRI from unseen sites. *PLoS One*, 12(9):e0184661, 2017
3. Timothy N Rubin, **Oluwasanmi Koyejo**, Krzysztof J Gorgolewski, Michael N Jones, Russell A Poldrack, and Tal Yarkoni. Decoding brain activity using a large-scale probabilistic functional-anatomical atlas of human cognition. *PLOS Computational Biology*, 2017
4. Krzysztof Dembczyński, Wojciech Kotłowski, **Oluwasanmi Koyejo**, and Nagarajan Natarajan. Consistency analysis for binary classification revisited. In *International Conference on Machine Learning*, pages 961–969, 2017

5. Wesley Tansey, **Oluwasanmi Koyejo**, Russell A. Poldrack, and James G. Scott. False discovery rate smoothing. *Journal of the American Statistical Association (JASA): Theory and Methods*, 2017
6. Avradeep Bhowmik, Joydeep Ghosh, and **Oluwasanmi Koyejo**. Frequency domain predictive modelling with aggregated data. In *Proceedings of the 20th International conference on Artificial Intelligence and Statistics (AISTATS)*, 2017
7. Rajiv Khanna, Joydeep Ghosh, Russell A. Poldrack, and **Oluwasanmi Koyejo**. Information projection and approximate inference for structured sparse variables. In *Proceedings of the 20th International conference on Artificial Intelligence and Statistics (AISTATS)*, 2017
8. Rajiv Khanna, Joydeep Ghosh, Russell A. Poldrack, and **Oluwasanmi Koyejo**. A deflation method for structured probabilistic PCA. In *Proceedings of the SIAM International Conference on Data Mining (SDM)*, 2017
9. Roei Gilron, Jonathan Rosenblatt, **Oluwasanmi Koyejo**, Russell A Poldrack, and Roy Mukamel. What's in a pattern? examining the type of signal multivariate analysis uncovers at the group level. *NeuroImage*, 2017
10. James M. Shine, Patrick G. Bissett, Peter T. Bell, **Oluwasanmi Koyejo**, Joshua H. Balsters, Krzysztof J. Gorgolewski, Craig A. Moodie, and Russell A. Poldrack. The dynamics of functional brain networks: Integrated network states during cognitive task performance. *Neuron*, 2016
11. James M Shine, **Oluwasanmi Koyejo**, and Russell A Poldrack. Temporal metastates are associated with differential patterns of time-resolved connectivity, network topology, and attention. *Proceedings of the National Academy of Sciences*, 2016
12. Been Kim, Rajiv Khanna, and **Oluwasanmi O Koyejo**. Examples are not enough, learn to criticize! criticism for interpretability. In *Advances in Neural Information Processing Systems*, pages 2280–2288, 2016
13. Suriya Gunasekar, **Oluwasanmi O Koyejo**, and Joydeep Ghosh. Preference completion from partial rankings. In *Advances in Neural Information Processing Systems*, pages 1370–1378, 2016
14. Timothy Rubin, **Oluwasanmi Koyejo**, Michael N. Jones, and Tal Yarkoni. Generalized correspondence-LDA models (GC-LDA) for identifying functional regions in the brain. In *Advances in Neural Information Processing Systems*, 2016
15. Avradeep Bhowmik, Joydeep Ghosh, and **Oluwasanmi Koyejo**. Sparse parameter recovery from aggregated data. In *Proceedings of The 33rd International Conference on Machine Learning*, pages 1090–1099, 2016
16. Nagarajan Natarajan, **Oluwasanmi Koyejo**, Pradeep Ravikumar, and Inderjit Dhillon. Optimal classification with multivariate losses. In *Proceedings of The 33rd International Conference on Machine Learning*, pages 1530–1538, 2016
17. Megasthenis Asteris, Anastasios Kyrillidis, **Oluwasanmi Koyejo**, and Russell A Poldrack. A simple and provable algorithm for sparse CCA. In *International Conference on Machine Learning*, 2016

18. Shalmali Joshi, Joydeep Ghosh, Mark Reid, and **Oluwasanmi Koyejo**. Rényi divergence minimization based co-regularized multiview clustering. In *Machine Learning*, 2015
19. Russell A Poldrack, Timothy O Laumann, **Oluwasanmi Koyejo**, Brenda Gregory, Ashleigh Hover, Mei-Yen Chen, Krzysztof J Gorgolewski, Jeffrey Luci, Sung Jun Joo, Ryan L Boyd, et al. Long-term neural and physiological phenotyping of a single human. *Nature communications*, 6, 2015
20. **Oluwasanmi O Koyejo**, Nagarajan Natarajan, Pradeep K Ravikumar, and Inderjit S Dhillon. Consistent multilabel classification. In *Advances in Neural Information Processing Systems*, pages 3321–3329, 2015
21. Shalmali Joshi, **Oluwasanmi Koyejo**, Kristine Resurreccion, and Joydeep Ghosh. Simultaneous prognosis and exploratory analysis of multiple chronic conditions using clinical notes. In *Proceedings of the IEEE International Conference on Healthcare Informatics 2015 (ICHI)*, 2015
22. Vanessa V Sochat, Krzysztof Jacek Gorgolewski, **Oluwasanmi Koyejo**, Joke Durnez, and Russell A Poldrack. Effects of thresholding on correlation-based image similarity metrics. *Frontiers in Neuroscience*, 9:418, 2015
23. James M Shine, **Oluwasanmi Koyejo**, Peter T Bell, Krzysztof J Gorgolewski, Moran Gilat, and Russell A Poldrack. Estimation of dynamic functional connectivity using multiplicative analytical coupling. *NeuroImage*, 122:399–407, 2015
24. Avradeep Bhowmik, Joydeep Ghosh, and **Oluwasanmi Koyejo**. Generalized linear models for aggregated data. In *Proceedings of the 18th International conference on Artificial Intelligence and Statistics (AISTATS)*, volume 38 of *JMLR Proceedings*, pages 93–101. JMLR.org, 2015
25. Rajiv Khanna, Joydeep Ghosh, Russell A. Poldrack, and **Oluwasanmi Koyejo**. Sparse sub-modular probabilistic PCA. In *Proceedings of the 18th International conference on Artificial Intelligence and Statistics (AISTATS)*, volume 38 of *JMLR Proceedings*, pages 453–461. JMLR.org, 2015
26. **Oluwasanmi Koyejo***, Nagarajan Natarajan*, Pradeep K Ravikumar, and Inderjit S Dhillon. Consistent binary classification with generalized performance metrics. In *Advances in Neural Information Processing Systems*, pages 2744–2752, 2014
27. **Oluwasanmi Koyejo**, Rajiv Khanna, Joydeep Ghosh, and Russell Poldrack. On prior distributions and approximate inference for structured variables. In *Advances in Neural Information Processing Systems*, pages 676–684, 2014
28. Anqi Wu, Mijung Park, **Oluwasanmi Koyejo**, and Jonathan W. Pillow. Sparse Bayesian structure learning with dependent relevance determination priors. In *Advances in Neural Information Processing Systems*, pages 1628–1636, 2014
29. **Oluwasanmi Koyejo**, Cheng Lee, and Joydeep Ghosh. A constrained matrix-variate Gaussian process for transposable data. *Machine Learning*, 97(1-2):103–127, 2014
30. **Oluwasanmi Koyejo** and Joydeep Ghosh. Constrained Bayesian inference for low rank multitask learning. In *Proceedings of the 29th conference on Uncertainty in Artificial Intelligence (UAI)*, pages 97–106, 2013

31. Russell A. Poldrack, Deanna M. Barch, Jason P. Mitchell, Tor D. Wager, Anthony D. Wagner, Joseph T. Devlin, Chad Cumba, **Oluwasanmi Koyejo**, and Michael P. Milham. Toward open sharing of task-based fMRI data: the openfMRI project. *Frontiers in Neuroinformatics*, 7, 2013
32. Mijung Park*, **Oluwasanmi Koyejo***, Joydeep Ghosh, Russell Poldrack, and Jonathan Pillow. Bayesian structure learning for functional neuroimaging. In *Proceedings of the Sixteenth International Conference on Artificial Intelligence and Statistics*, volume 31 of *JMLR Proceedings*, pages 489–497. JMLR.org, 2013
33. Cheng H Lee, **Oluwasanmi Koyejo**, and Joydeep Ghosh. Identifying candidate disease genes using a trace norm constrained bipartite raking model. In *Engineering in Medicine and Biology Society (EMBC), 2013 35th Annual International Conference of the IEEE*, pages 3459–3462. IEEE, 2013
34. **Oluwasanmi Koyejo**, Priyank Patel, Joydeep Ghosh, and Russell A. Poldrack. Learning predictive cognitive structure from fMRI using supervised topic models. In *Pattern Recognition in Neuroimaging (PRNI), 2013 International Workshop on*, pages 9–12. IEEE, 2013
35. **Oluwasanmi Koyejo**, Sreangsu Acharyya, and Joydeep Ghosh. Retargeted matrix factorization for collaborative filtering. In *Proceedings of the 7th ACM Conference on Recommender Systems, RecSys '13*, pages 49–56, New York, NY, USA, 2013. ACM
36. **Oluwasanmi Koyejo**, Cheng Lee, and Joydeep Ghosh. Constrained Gaussian process regression for gene-disease association. In *Data Mining Workshops (ICDMW), 2013 IEEE 13th International Conference on*, pages 72–79. IEEE, 2013
37. **Oluwasanmi Koyejo** and Russell A. Poldrack. Decoding cognitive processes from functional MRI. In *NIPS Workshop on Machine Learning and Interpretation in Neuroimaging*, 2013
38. Sreangsu Acharyya*, **Oluwasanmi Koyejo***, and Joydeep Ghosh. Learning to rank with Bregman divergences and monotone retargeting. In *Proceedings of the 28th conference on Uncertainty in Artificial Intelligence (UAI)*, 2012
39. **Oluwasanmi Koyejo** and Joydeep Ghosh. A kernel-based approach to exploiting interaction-networks in heterogeneous information sources for improved recommender systems. In *Proceedings of the 2nd International Workshop on Information Heterogeneity and Fusion in Recommender Systems, HetRec '11*, pages 9–16, New York, NY, USA, 2011. ACM
40. **Oluwasanmi Koyejo** and Joydeep Ghosh. MiPPS; a generative model for multi-manifold clustering. In *AAAI Fall Symposium on Manifold Learning and Its Applications*. AAAI Press, 2009

*Equal Contribution.

Thesis

41. **Oluwasanmi Koyejo**. *Constrained relative entropy minimization with applications to multitask learning*. PhD thesis, The University of Texas at Austin, May 2013

Peer-reviewed workshop papers

42. Rajiv Khanna, Joydeep Ghosh, Russell A. Poldrack, and **Oluwasanmi Koyejo**. A deflation method for probabilistic PCA. In *NIPS workshop on Advances in Approximate Bayesian Inference*, 2015
43. Shalmali Joshi, **Oluwasanmi Koyejo**, and Joydeep Ghosh. Constrained inference for multi-view clustering. In *ICML Workshop on Divergence Methods for Probabilistic Inference*, 2014
44. **Oluwasanmi Koyejo**, Sreangsu Acharyya, and Joydeep Ghosh. Ratings re-specification for rank ordered recommendations. In *UAI workshop on New Challenges in E-Commerce Recommendations*, 2013
45. **Oluwasanmi Koyejo** and Joydeep Ghosh. A representation approach for relative entropy minimization with expectation constraints. In *ICML workshop on Divergences and Divergence Learning (WDDL)*, 2013
46. **Oluwasanmi Koyejo** and Jeff Andrews. Capacity gains of multi-user diversity in a cellular downlink interference-limited environment. In *GAIN 2007 student conference*, February 2007

Academic Magazines & Proceedings

47. S. Ryali, T. Chen, B. Ng, and **O. Koyejo**. Message from program chairs: PRNI 2015. In *Pattern Recognition in NeuroImaging (PRNI), 2015 International Workshop on*, pages ix–ix, June 2015
48. **Oluwasanmi Koyejo**. Manifold learning and its applications: Reports of the AAAI 2010 fall symposia. *AI Magazine*, 32(1):93–100, 2011
49. Richard Souvenir and **Oluwasanmi Koyejo**. Manifold learning and its applications: Reports of the AAAI 2009 fall symposia. *AI Magazine*, 31(1):88–94, 2010

Graduated MS Students

Ailing Zhang	Learning Distributions with Particle Mirror Descent	CS Illinois, 2017
Juho Kim	Efficient visualization for large-scale and high-dimensional single-cell data	ECE Illinois, 2017

Teaching**Courses**

Fall 2017	Machine Learning	Univ. of Illinois, Urbana-Champaign
Fall 2016	Graphical Models	Univ. of Illinois, Urbana-Champaign

Memberships and Affiliations

2013 -	Organization for Human Brain Mapping
2014 - 2016	Stanford Center for Mind, Brain and Computation
2002 - 2013	Institute of Electrical and Electronics Engineers
2009 - 2011	Association for the Advancement of Artificial Intelligence

Awards & Honors

2014	Trainee award from the Organization for Human Brain Mapping (OHBM)
2013	Student paper award at the conference for Uncertainty in Artificial Intelligence (UAI)
2012	Travel award at the conference for Uncertainty in Artificial Intelligence (UAI)
2007	"Q" Award of excellence from Qualcomm
2006	"Q" Award of excellence from Qualcomm
2005	Outstanding NCE graduate award from NJIT
2005	Outstanding ECE graduate award from NJIT
2004 -	Phi Eta Sigma honors society
2004 -	Tau Beta Pi honors society
2004 -	Omicron Delta Kappa national leadership honors society
2003	Leadership award from NJIT
2001 - 2005	Albert Dorman honors college

Professional Service

Program chair

2017	Area Chair, Advances in Neural Information Processing Systems Conference
2017	Brainhack Global at Illinois
2015	ICML Workshop on Statistics, Machine Learning and Neuroscience (Stamlins)
2015	International workshop on Pattern Recognition in Neuroimaging (PRNI)
2014	ICML workshop on Divergence Methods for Probabilistic Inference (DMPI)
2010	AAAI symposium on Manifold learning and its applications
2005 - 2007	UT Austin GEC GAIN Conference

Ad-hoc peer review

CIKM 2017, ICML 2017, AAAI (2016 - 2018), PRNI (2016, 2017), Allerton 2017, AISTATS 2016, NIPS 2015-2016, OHBM Abstracts 2015-2016, Annals of Applied Statistics, Neuroimage (x4), Statistics and Computing, STAT, SIAM International Conference on Data Mining 2010, Information Sciences, INFORMS Journal on Computing,

Session chair

ICML 2017, ITA 2017, Allerton 2017, Tapia 2017, Illinois Data Science Initiative (Data science day 2016, 2017).

Outreach

Black in AI (Co-organizer, 2017), Broadening Participation in Data Mining Workshop (Reviewer, 2017), Hack Illinois (Judge, 2017), PURE Research Illinois (Judge, 2017).

Presentations

Symposium talks, departmental lectures and conference presentations

- 10/2017 University of Wisconsin-Madison SILO seminar
- 08/2017 University of Sydney
- 08/2017 Facebook AI Research
- 08/2017 Max Planck Institute for Intelligent Systems
- 07/2017 Google Brain
- 07/2017 University of California at Berkeley
- 03/2017 Brainhack Global at Illinois
- 02/2017 Information Theory and Applications Workshop (ITA)
- 01/2017 Illinois Machine Learning Reading Group
- 11/2016 Illinois Cognitive Neuroscience Brownbag
- 10/2016 Georgia Institute of Technology
- 08/2016 Illinois Grainger Conference
- 06/2016 Gastby Neuroscience Unit, University College London
- 06/2016 University of Amsterdam
- 06/2016 Workshop on Pattern Recognition in Neuroimaging (PRNI)
- 05/2016 Toyota Technical Institute, Chicago
- 04/2016 Biostat Seminar, Stanford University
- 02/2016 Information Theory and Applications Workshop (ITA)
- 04/2015 Neuroimaging meta-analysis methods workshop, Neurospin, INRIA
- 04/2015 ECE Seminar, University of Michigan, Ann Arbor
- 03/2015 CS Special Seminar, University of Illinois at Urbana-Champaign
- 02/2015 Information Theory and Applications Workshop (ITA)
- 01/2015 Statistics and Machine Learning Group, Stanford University
- 01/2015 Statistical Science Seminar Series, Duke University
- 10/2014 Biostatistics seminar at University of North Carolina
- 09/2014 Neurospin, INRIA
- 09/2014 European conference on Machine Learning (ECML), France
- 06/2014 ICML workshop on Divergence Methods for Probabilistic Inference (DMPI)
- 06/2014 "Unconference" at Organization for Human Brain Mapping
- 07/2013 Conference on Uncertainty in Artificial Intelligence
- 07/2013 Workshop on New challenges in e-commerce recommendations
- 06/2013 Workshop on Divergences and divergence learning
- 06/2013 Pattern Recognition in Neuroimaging
- 01/2013 Lawrence Livermore national lab
- 12/2012 Adometry
- 11/2012 Apple Inc.
- 11/2011 International workshop on Information heterogeneity and fusion in recommender systems
- 11/2010 Workshop on Manifold learning and its applications

Industry Positions

05/2010 - 05/2011	Research intern	Adometry (Acquired by Google, 2014)
05/2007 - 08/2007	QCT systems intern	Qualcomm Inc.
05/2006 - 08/2006	WTBU intern	Texas Instruments
05/2005 - 08/2005	Product engineering intern	Texas Instruments
02/2003 - 08/2004	Operations service center intern	Ei ³ corporation
06/2003 - 08/2008	Energy resources and trade intern	PSEG