

Tal Yarkoni

Curriculum Vitae

Research Assistant Professor
Department of Psychology
University of Texas at Austin
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Web: <http://talyarkoni.org>
Lab: <http://pilab.psy.utexas.edu>
Code: <http://github.com/tyarkoni>

Academic Positions

2014 -	Research Assistant Professor	University of Texas at Austin
2013 - 2014	Research Associate	University of Texas at Austin
2012 - 2013	Research Associate	University of Colorado Boulder

Education

2009 - 2012	NRSA Postdoctoral Fellow	Columbia University & University of Colorado
2009	Ph.D., Psychology	Washington University
2006	M.A., Psychology	Washington University
2003	B.A. (Hons), Psychology	Carleton University

Awards & Honors

2013	Innovation Award from the Social and Affective Neuroscience Society
2011	Named a "Rising Star" by the Association for Psychological Science
2009 - 2012	NIH National Research Service Award (NRSA) Post-Doctoral Fellowship
2008	Washington University Dissertation fellowship
2007	Fellow, Summer Institute in Cognitive Neuroscience
2003	NSERC Post Graduate Fellowship (declined)
2003	Ontario Graduate Scholarship (declined)
2003	Senate Medal for Outstanding Academic Achievement, Carleton University

Active funding

R01MH109682 National Institutes of Health (2016 - 2021). *NeuroScout: A cloud-based platform for rapid re-analysis of naturalistic fMRI datasets..* Role: PI.

R01EB020710 National Institutes of Health. (2016 - 2020). *NiPype: Dataflows for Reproducible Biomedical Research.* Role: Co-I (PI: Ghosh, MIT).

R25MH112480 National Institutes of Health. (2017 - 2022). *Summer Institute in Neuroimaging and Data Science.* Role: Co-I (PI: Rokem, University of Washington).

Past funding

R01MH096906 National Institutes of Health. (2012 - 2017 [NCE]). *Large-scale automated synthesis of functional neuroimaging data.* Role: PI.

Scientific Contributions

Peer-reviewed journal articles and refereed conference papers

1. **Yarkoni, T.**, & Westfall, J. (in press). Choosing prediction over explanation in psychology: Lessons from machine learning. *Perspectives on Psychological Science*.
2. Gilmore, R. O., Diaz, M., Wyble, B., & **Yarkoni, T.** (2017). Progress toward openness, transparency, and reproducibility in cognitive neuroscience. *Annals of the New York Academy of Sciences*, 1396: 5-18.
3. Westfall, J., Nichols, T. E., & **Yarkoni, T.** (2017). Fixing the stimulus-as-fixed-effect fallacy in fMRI. *Wellcome Open Research*, 1:23.
4. McNamara, Q., De la Vega, A. I., & **Yarkoni, T.** (2017). Developing a comprehensive framework for multimodal feature extraction. Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining.
5. Gorgolewski, K. J., Alfaro-Almagro, F., Auer, T., Bellec, P., Capota, M., Chakravarty, M. M., Churchill, N. W., Cohen, A. L., Craddock, R. C., Devenyi, G. A., Eklund, A., Esteban, O., Flandin, G., Ghosh, S. S., Guntupalli, S., Jenkinson, M., Keshavan, A., Kiar, G., Liem, F., Raamana, P. R., Raffelt, D., Steele, C. J., Quirion, P-O., Smith, R. E., Strother, S. C., Varoquaux, G., Wang, Y., **Yarkoni, T.**, & Poldrack, R. A. (2017). BIDS apps: Improving ease of use, accessibility, and reproducibility of neuroimaging data analysis methods. *PLOS Computational Biology*, 13(3): e1005209.
6. Poldrack, R. A., Baker, C. I., Durnez, J., Gorgolewski, K. J., Matthews, P. M., Munafò, M., Nichols, T. E., Poline, J.-B., Vul, E., & **Yarkoni, T.** (2017). Scanning the Horizon: challenges and solutions for neuroimaging research. *Nature Reviews Neuroscience*, 18, 115-126.
7. McKiernan, E. C., Bourne, P. E., Brown, C. T., Buck, S., Kenall, A., Lin, J., McDougall, D., Nosek, B. A., Ram, K., Soderberg, C. K., Spies, J. R., Thaney, K., Updegrave, A., Woo, K. H., & **Yarkoni, T.** (2016). How open science helps researchers succeed. *eLife*, 5, e16800.
8. Rubin, T., Koyejo, O. O., Jones, M. N., & **Yarkoni, T.** (2016). Generalized Correspondence-LDA Models (GC-LDA) for Identifying Functional Regions in the Brain. *Advances in Neural Information Processing Systems (NIPS)* 29.
9. De la Vega, A. I., Chang, L. J., Banich, M. T., Wager, T. D., & **Yarkoni, T.** (2016). Large-scale meta-analysis of human medial frontal cortex reveals tripartite functional organization. *Journal of Neuroscience*, 36, 6553-6562.
10. Wager, T. D., Atlas, L. Y., Botvinick, M. M., Chang, L. J., Coghill, R. C., Davis, K. D., Iannetti, G. D., Poldrack, R. A., Shackman, A. J., & **Yarkoni, T.** (2016). Pain in the ACC? *Proceedings of the National Academy of Sciences*, 113(18), E2474-E2475.
11. Westfall, J., & **Yarkoni, T.** (2016). Statistically controlling for confounding constructs is harder than you think. *PLOS ONE*, 11(3): e0152719.
12. Pauli, W. M., O'Reilly, R. C., **Yarkoni, T.**, & Wager, T. D. (2016). Regional specialization within the human striatum for diverse psychological functions. *Proceedings of the National Academy of Sciences*, 113, 1907-1912.

13. Poldrack, R. A., & **Yarkoni, T.** (2016). From brain maps to cognitive ontologies: informatics and the search for mental structure. *Annual Review of Psychology*, *67*, 587-612.
14. Ashar, Y. K., Andrews-Hanna, J. R., **Yarkoni, T.**, Sills, J., Halifax, J., Dimidjian, S., & Wager, T. D. (2016). Effects of Compassion Meditation on a Psychological Model of Charitable Donation. *Emotion*.
15. Nosek, B.A., Alter, G., Banks, G.C., Borsboom, D., Bowman, S.D., Breckler, S., Buck, S., Chambers, C., Chin, G., Christensen, G., Contestabile, M., Dafoe, A., Eich, E., Freese, J., Glennerster, R., Goroff, D., Green, D.P., Hesse, B., Humphreys, M., Ishiyama, J., Karlan, D., Kraut, A., Lupia, A., Mabry, P., Madon, T., Malhotra, N., Mayo-Wilson, E., McNutt, M., Miguel, E., Levy Paluck, E., Simonsohn, U., Soderberg, C., Spellman, B.A., Turitto, J., VandenBos, G., Vazire, S., Wagenmakers, E.J., Wilson, R., & **Yarkoni, T.** (2015). Promoting an Open Research Culture: The TOP Guidelines for Journals. *Science*, *348*,1422-1425.
16. **Yarkoni, T.**, Ashar, Y. A., & Wager, T. D. (2015). Interactions between donor Agreeableness and recipient characteristics in predicting charitable donation and positive social evaluation. *PeerJ*, *3*:e1089.
17. Gorgolewski, K. J., Varoquaux, G., Rivera, G., Schwartz, Y., Ghosh, S. S., Maumet, C., Sochat, V. V., Nichols, T. E., Poldrack, R. A., Poline, J-B., **Yarkoni, T.**, & Margulies, D. S. (2015). NeuroVault.org: A web-based repository for collecting and sharing unthresholded statistical maps of the human brain. *Frontiers in Neuroinformatics*, *9*:8.
18. Mesmoudi, S., Rodic, M., Cioli, C., Cointet, J.-P., **Yarkoni, T.**, & Burnod, Y. (2015). linkRbrain: Multi-scale data integrator of the brain. *Journal of Neuroscience Methods*, *241*, 44-52.
19. Cremers, H., Veer, I. M., Spinhoven, P., Rombouts, S. A. **Yarkoni, T.**, Wager, T. D., & Roelofs, K. (2015). Dysfunctional cortical-amygdala coupling in social anxiety during the anticipation of giving a public speech. *Psychological Medicine*, *45*, 1521-1529.
20. Eisenbarth, H., Lilienfeld, S. O., & **Yarkoni, T.** (2015). Using a genetic algorithm to abbreviate the Psychopathic Personality Inventory Revised (PPI-R). *Psychological Assessment*, *27*, 194-202.
21. Andrews-Hanna, J.R., Saxe, R., & **Yarkoni, T.** (2014). Contributions of episodic retrieval and mentalizing to autobiographical thought: evidence from functional neuroimaging, resting-state connectivity, and fMRI meta-analysis *NeuroImage*, *91*, 324-335.
22. Chang, L. J., **Yarkoni, T.**, Khaw, M. W., & Sanfey, A. G. (2013). Decoding the role of the insula in human cognition: Functional parcellation and large-scale reverse inference. *Cerebral Cortex*, *23*, 739-749.
23. Rodebaugh, T. L., Shumaker, E. A., Levinson, C. A., Fernandez, K. C., Langer, J. K., Lim, M. H., & **Yarkoni, T.** (2013). Interpersonal constraint conferred by generalized social anxiety disorder is evident on a behavioral economics task. *Journal of Abnormal Psychology*, *122*, 39-44.
24. Poldrack, R. A., Mumford, J. A., Schonberg, T., Kalar, D., Barman, B., & **Yarkoni, T.** (2012). Discovering relations between mind, brain, and mental disorders using topic mapping. *PLoS Computational Biology*, *8*, e1002707.
25. **Yarkoni, T.** (2012). Psychoinformatics: New horizons at the interface of the psychological and computing sciences. *Current Directions in Psychological Science*, *21*, 391-397.

26. **Yarkoni, T.** (2012). Designing next-generation platforms for evaluating scientific output: What scientists can learn from the social web. *Frontiers in Computational Neuroscience*, *6*, 72.
27. Cole, M. W., **Yarkoni, T.**, Repovs, G., Anticevic, A., & Braver, T. S. (2012). Global connectivity of prefrontal cortex predicts cognitive control and intelligence. *Journal of Neuroscience*, *32*, 8988-8999.
28. Westbrook, A., Martins, B. S., **Yarkoni, T.**, & Braver, T. S. (2012). Strategic Insight and Age-Related Goal-Neglect Influence Risky Decision-Making. *Frontiers in Decision Neuroscience*, *6*, 68.
29. **Yarkoni, T.**, Poldrack, R. A., Nichols, T. E., Van Essen, D. C., & Wager, T. D. (2011). Large-scale automated synthesis of human functional neuroimaging data. *Nature Methods*, *8*, 665-670.
30. Rodebaugh, T. L., Klein, S. R., **Yarkoni, T.**, & Langer, J. K. (2011). Measuring interpersonal constraint with the flexible iterated prisoner's dilemma. *Journal of Anxiety Disorders*, *25*, 427-436.
31. Holtzman, N. S., Schott, J. P., Jones, M. N., Balota, D. A., & **Yarkoni, T.** (2011). Exploring media bias using text-analysis, with general methods to quantify discrepancies in semantics across texts. *Behavior Research Methods*, *43*, 193-200.
32. **Yarkoni, T.**, Poldrack, R. A., Van Essen, D. C., & Wager, T. D. (2010). Cognitive neuroscience 2.0: Building a cumulative science of human brain function. *Trends in Cognitive Sciences*, *14*, 489-496.
33. **Yarkoni, T.** (2010). Personality in 100,000 words: A large-scale analysis of personality and word use among bloggers. *Journal of Research in Personality*, *44*, 363-373.
34. Braver, T. S., Cole, M. W., & **Yarkoni, T.** (2010). Vive les differences! Individual variation in neural mechanisms of executive control. *Current Opinion in Neurobiology*, *20*, 1-9.
35. **Yarkoni, T.** (2010). The abbreviation of personality, or how to measure 200 scales with 200 items. *Journal of Research in Personality*, *44*, 180-198.
36. **Yarkoni, T.**, Barch, D. M., Gray, J. R., Conturo, T. E., & Braver, T. S. (2009). BOLD correlates of trial-by-trial reaction time variability in gray and white matter: a multi-study fMRI analysis. *PLoS ONE*, *4*, e4527.
37. **Yarkoni, T.**, Balota, D. A., & Yap, M. J. (2008). Beyond Coltheart's N: A new measure of orthographic similarity. *Psychonomic Bulletin & Review*, *15*, 971-979.
38. **Yarkoni, T.**, Speer, N. K., Balota, D. A., McAvoy, M. P., & Zacks, J. M. (2008). Pictures of a thousand words: Investigating the neural mechanisms of reading with extremely rapid event-related fMRI. *NeuroImage*, *42*, 973-987.
39. **Yarkoni, T.**, Speer, N. K., & Zacks, J. M. (2008). Neural substrates of narrative comprehension and memory. *NeuroImage*, *41*, 1408-1425.
40. Schaefer, A., Braver, T.S., Reynolds, J.R., Burgess, G.C., **Yarkoni, T.**, & Gray, J.R. (2006). Individual differences in amygdala activity predict response speed during working memory. *Journal of Neuroscience*, *26*, 10120-10128.

41. **Yarkoni, T.**, Braver, T.S., Gray, J.R., & Green, L. (2005). Prefrontal brain activity predicts temporally extended decision-making behavior. *Journal for the Experimental Analysis of Behavior*, *84*, 537-554.
42. Gray, J.R., Burgess, G.C., Schaefer, A., **Yarkoni, T.**, Larsen, R.J., & Braver, T.S. (2005). Personality differences in neural processing efficiency confirmed using fMRI. *Cognitive, Affective & Behavioral Neuroscience*, *5*, 182-190.
43. **Yarkoni, T.**, Gray, J.R., Chrastil, E., Barch, D.M., Green, L., & Braver, T.S. (2005). Sustained neural activity associated with cognitive control during temporally-extended decision making. *Cognitive Brain Research*, *23*, 71-84.

Chapters and commentaries

44. **Yarkoni, T.** (2014). Neurobiological substrates of personality: A critical overview. APA Handbook of Personality and Social Psychology.
45. Barch, D. M. & **Yarkoni, T.** (2013). Introduction to the special issue on reliability and replication in cognitive and affective neuroscience research. *Cognitive, Affective, & Behavioral Neuroscience*, *13*, 687-689.
46. **Yarkoni, T.** (2012). Beginning at Nosek & Bar-Anan's end: Let's put open evaluation first. *Psychological Inquiry*, *23*, 305-307.
47. Wager, T. D. & **Yarkoni, T.** (2012). Establishing homology between monkey and human brains. *Nature Methods*.
48. **Yarkoni, T.** (2011). Functional MRI in health psychology and beyond: A call for caution. *European Health Psychologist*, *13*, 4.
49. **Yarkoni, T.**, & Braver, T. S. (2010). Functional neuroimaging approaches to individual differences in working memory and executive control: Conceptual and methodological considerations. In: *Handbook of Individual Differences in Cognition*. Gruszka, Matthews, & Szymura, Eds.
50. **Yarkoni, T.** (2009). Big correlations in little studies: Inflated fMRI correlations reflect low statistical power—Commentary on Vul et al (2009). *is on Psychological Science*, *4*, 294-298.

Selected non-peer-reviewed writings

51. **Yarkoni, T.** (2014). Don't fear Facebook's emotion manipulation experiment. *New Scientist*.
52. **Yarkoni, T.** (2013). Principled failure to detect a five-factor structure in a canonical Big Five measure. *figshare*. <http://dx.doi.org/10.6084/m9.figshare.680883>.
53. Goff, P. A., Kolassa, I., Gruber, J., Castel, A., Lindquist, K., Nummenmaa, L., Oh, I., Akinola, M., & **Yarkoni, T.** (2013). The next 25 years. *APS Observer*.
54. **Yarkoni, T.** (2012). Psychological science needs a seat at the informatics table. *APS Observer*.
55. Holtzman, N. S. & **Yarkoni, T.** (2010). More residues of personality in language use: A primer. *P: The Newsletter for the Association for Research in Personality*.

56. **[citation needed]** (<http://talyarkoni.org/blog>). A psychological methods-oriented blog; routinely features posts on statistical and methodological issues in psychology and cognitive neuroscience. Relatively large academic readership (1,200+ subscribers).

Selected open-source software packages

Neurosynth. A suite of Python tools for extracting and synthesizing data from published fMRI studies (<http://neurosynth.org>; <http://github.com/neurosynth/neurosynth>; Yarkoni et al., 2011; Poldrack et al, Chang et al, 2013).

bambi. A high-level Bayesian model-building interface written in Python. Bambi makes it easy to fit mixed-effects models common in social sciences settings using a Bayesian approach (<https://github.com/bambinos/bambi>; Yarkoni & Westfall, submitted).

transitions. A lightweight, object-oriented finite state machine (FSM) implementation in Python. The most widely-used FSM package in Python (<https://github.com/tyarkoni/transitions>).

precis. A Python package for genetic algorithm-based automated abbreviation of questionnaires (<https://github.com/tyarkoni/precis>; Yarkoni, 2010; Eisenbarth, Lilienfeld, & Yarkoni, 2014).

Pliers. A Python package for automated extraction of features from multimodal stimuli. (<https://github.com/tyarkoni/pliers>; McNamara, De la Vega, & Yarkoni ,submitted).

Professional Service

Editorial service, national committees, advisory boards, etc.

- 2017- Editorial Board, *Advances in Methods and Practices in Psychological Science*
- 2016- Co-organizer of *Neurohackweek*, an annual summer school in neuroimaging data science
- 2015- Editorial Board, *Collabra*
- 2014- Advisory Board, *Databrary Project* (NYU)
- 2013- Consulting Editor, *Behavior Research Methods*
- 2014 Subcommittee on sharing data, code and materials, *Center for Open Science*
- 2013 SPSP Web Task Force
- 2013 Guest Editor of special issue, *Cognitive, Affective, and Behavioral Neuroscience*
- 2013 Organizer, *Neurosynth Hackathon*

Ad-hoc peer review

NeuroImage (x11); *Psychological Science* (x6); *Nature* (x5); *Journal of Research in Personality* (x5); *Cerebral Cortex* (x5); *Frontiers in Human Neuroscience* (x4); *Cognitive, Affective, and Behavioral Neuroscience* (x4); *PLOS ONE* (x3); *Social Psychology and Personality Science* (x3); *Journal of Personality* (x3); *Journal of Neuroscience* (x3); *PLOS Computational Biology* (x3); *Human Brain Mapping* (x2); *Journal of Cognitive Neuroscience* (x2); *PNAS* (x2); *Perspectives on Psychological Science* (x2); *Emotion* (x2); *PLOS Biology* (x2); *Brain Imaging Methods*; *Science*; *Nature Neuroscience*; *Neuropsychologia*; *Behavior Research Methods*; *eLife*; *Neuroinformatics*; *American Journal of Psychiatry*; *Quarterly Journal of Experimental Psychology*; *JEP: Human Perception and Performance*; *JEP: Learning, Memory, & Cognition*; *JEP: General*; *Journal of the Experimental Analysis of Behavior*; *Psychological Assessment*; *Cognitive Neuroscience*; *Psychiatry Research*; *Cognitive Brain Research*; *Emotion Review*; *Brain Research*; *Brain and Cognition*;

Brain; Frontiers in Computational Neuroscience; GigaScience; Political Psychology; Journal of Behavioral Decision Making; Philosophy of Science; Discourse Processes; BMC Research Notes; ACM Computing Surveys; MIT Press

Presentations

Invited symposium/conference talks and departmental lectures

- 06/2017 Summer School in Neuroscience and Philosophy, Duke University, Durham, NC
- 05/2017 Center for the Neural Bases of Cognition, CMU/University of Pittsburgh, Pittsburgh, PA
- 05/2017 Association for Psychological Science, Boston, MA
- 04/2017 Department of Psychology, Stanford University
- 02/2017 Center for Mind & Brain, UC-Davis
- 01/2017 Society for Personality and Social Psychology, San Antonio, TX
- 12/2016 Max Planck Institute for Human and Cognitive Brain Sciences, Leipzig, Germany
- 12/2016 Department of Psychology, Stockholm University
- 12/2016 Swedish Royal Academy of Sciences, Stockholm, Sweden
- 10/2016 Department of Philosophy, Macquarie University
- 10/2016 Neuroscience Program, Penn State University
- 07/2016 UCLA Neuroimaging Training Program, University of California, Los Angeles
- 03/2016 School of Psychology, University of Glasgow
- 09/2015 eScience Institute, University of Washington
- 07/2015 UCLA Neuroimaging Training Program, University of California, Los Angeles
- 06/2015 Society for Philosophy and Psychology, Duke University
- 05/2015 Department of Psychology, New York University
- 02/2015 Center for BrainHealth, University of Texas at Dallas
- 01/2015 Magnetic Resonance Research Center, Yale University
- 01/2015 Machine Learning Summer School, Austin, TX
- 12/2014 Department of Psychology, Stanford University
- 12/2014 Law School, University of Colorado Boulder
- 10/2014 Department of Psychological and Brain Sciences, Indiana University
- 09/2014 Division of Biostatistics, Langone Medical Center, New York University
- 07/2014 UCLA Neuroimaging Training Program, University of California, Los Angeles
- 05/2014 Association for Psychological Science, San Francisco, CA
- 04/2014 Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology
- 01/2014 Department of Psychology, University of Southern California
- 11/2013 Society for Computers in Psychology, Toronto, Canada
- 08/2013 INCF Neuroinformatics Congress, Stockholm, Sweden
- 07/2013 Bernstein Center for Neurotechnology, Technical University of Berlin
- 07/2013 UCLA Neuroimaging Training Program, University of California, Los Angeles
- 06/2013 Organization for Human Brain Mapping, Seattle, WA
- 06/2013 Department of Psychology, University of Amsterdam
- 03/2013 Department of Philosophy & History of Science, University of Athens
- 04/2013 Social & Affective Neuroscience Society, San Francisco, CA
- 03/2013 Department of Psychology, University of Salzburg
- 02/2013 Department of Economics, University of Zurich
- 02/2013 Affective Science Center, University of Geneva
- 01/2013 Centre for Theoretical Neuroscience, University of Waterloo

12/2012 Department of Psychology, University of British Columbia
11/2012 Institute of Cognitive Science, University of Colorado Boulder
11/2012 Department of Psychology, University of Minnesota
10/2012 Rochester Big Data Forum, University of Rochester
09/2012 Department of Psychology, University of Amsterdam
09/2012 Brainhack 2013, Max Planck Institute for Human and Cognitive Brain Sciences
08/2012 Brain and Spine Institute, Paris
08/2012 FMRIB, University of Oxford
04/2012 Department of Psychology, University of Denver
12/2011 Department of Psychology, University of Wisconsin-Madison
12/2011 Department of Psychology, Northeastern University
09/2011 Department of Psychological and Brain Sciences, Dartmouth College
06/2011 Department of Psychology, Georgetown University
03/2011 Computational Bioscience Program, University of Colorado Denver
11/2010 Department of Psychology, University of Texas at Austin
04/2010 Department of Psychology, Carleton University
09/2009 Department of Psychological and Brain Sciences, Dartmouth College

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