Ariel Rokem

Department of Psychology
The University of Washington
119A Guthrie Hall
Seattle, WA 98105

Phone: +1-510-3876264
Email: arokem@gmail.com
Homepage: www.arokem.org
ORCID: 0000-0003-0679-1985

Work Experience

2021 - present	**Research Associate Professor**	
	University of Washington Department of Psychology	
2020 - 2021	**Research Assistant Professor**	
	University of Washington Department of Psychology	
2015-2020	**Senior Data Scientist**	
	University of Washington eScience Institute	
2011-2015	**Postdoctoral Researcher**	
	Stanford University	
2010-2011	**Postdoctoral Researcher**	
	University of California, Berkeley	
2002-2003	**Research Student**	
	Humboldt-Universität zu Berlin	

Education

2010 **Ph.D.** Neuroscience, University of California, Berkeley
2005 **M.A.** (*Summa cum Laude*) Cognitive Psychology, Hebrew University of Jerusalem
2002 **B.Sc.** (*Cum Laude*) Biology and Psychology, Hebrew University of Jerusalem

Peer-reviewed publications

Google Scholar, total citations: 7,584, h-index: 40

86. Poldrack, R. A., Markiewicz, C. J., Appelhoff, S., Ashar, Y. K., Auer, T., Baillet, S., Bansal, S., Beltrachini, L., Benar, C. G., Bertazzoli, G., Bhogawar, S., Blair, R. W., Bortoletto, M., Boudreau, M., Brooks, T. L., Calhoun, V. D., Castelli, F. M., Clement, P., Cohen, A. L., Cohen-Adad, J., D'Ambrosio, S., de Hollander, G., de la Iglesia-Vayá, M., de la Vega, A., Delorme, A., Devinsky, O., Draschkow, D., Duff, E. P., DuPre, E., Earl, E., Esteban, O., Feingold, F. W., Flandin, G., Galassi, A., Gallitto, G., Ganz, M., Gau, R., Gholam, J., Ghosh, S. S., Giacomel, A., Gillman, A. G., Gleeson, P., Gramfort, A., Guay, S., Guidali, G., Halchenko, Y. O., Handwerker, D. A., Hardcastle, N., Herholz, P., Hermes, D., Honey, C. J., Innis, R. B., Ioanas, H.-I., Jahn, A., Karakuzu, A., Keator, D. B., Kiar, G., Kincses, B., Laird, A. R., Lau, J. C., Lazari, A., Legarreta, J. H., Li, A., Li, X., Love, B. C., Lu, H., Maumet, C., Mazzamuto, G., Meisler, S. L., Mikkelsen, M., Mutsaerts, H., Nichols, T. E., Nikolaidis, A., Nilsonne, G., Niso, G., Norgaard, M., Okell, T. W., Oostenveld, R., Ort, E., Park, P. J., Pawlik, M., Pernet, C. R., Pestilli, F., Petr, J., Phillips, C., Poline, J.-B., Pollonini, L., Raamana, P. R., Ritter, P., Rizzo, G., Robbins, K. A., Rockhill, A. P., Rogers, C., **Rokem, A**, Rorden, C., Routier, A., Saborit-Torres, J. M., Salo, T., Schirner, M., Smith, R. E., Spisak, T.,

Sprenger, J., Swann, N. C., Szinte, M., Takerkart, S., Thirion, B., Thomas, A. G., Torabian, S., Varoquaux, G., Voytek, B., Welzel, J., Wilson, M., Yarkoni, T., and Gorgolewski, K. J. (in press). The past, present, and future of the brain imaging data structure (BIDS). *Imaging Neuroscience*

85. Roy, E., Richie-Halford, A., Kruper, J., Narayan, M., Bloom, D., Nedelec, P., Rauschecker, A., Brown, T. T., Jernigan, T. L., McCandliss, B. D., **Rokem, A**, and Yeatman, J. (in press). White matter and literacy: a dynamic system in flux. *Developmental Cognitive Neuroscience*

84. Cieslak, M., Cook, P. A., Tapera, T. M., Radhakrishnan, H., Elliott, M., Roalf, D. R., Oathes, D. J., Bassett, D. S., Tisdall, M. D., **Rokem, A**, Grafton, S. T., and Satterthwaite, T. (in press). Diffusion MRI head motion correction methods are highly accurate but impacted by denoising and sampling scheme. *Human Brain Mapping*

83. Caffarra, S., Kanopka, K., Kruper, J., Richie-Halford, A., **Rokem, A**, and Yeatman, J. D. (in press). Development of the alpha rhythm is linked to visual white matter pathways and visual detection performance. *J Neuroscience*

82. Ferré, J., **Rokem, A**, Buffalo, E. A., Kutz, N., and Fairhall, A. (2023). Non-stationary dynamical mode decomposition. *IEEE Access*, 11:117159–117176

81. Liu, F., Sankaranarayanan, V., Villanueva-Meyer, J., Hervey-Jumper, S., Hawkins, J., Damasceno, P., Bisson, M., Romero, J., Kurth, T., Fatica, M., Garyfallidis, E., **Rokem A**, Crane, J. C., and Majumdar, S. (2023). Clinical validation of rapid GPU-enabled DTI tractography of the brain. *Electronic Imaging*, 35(11):237–1–237–1

80. Chang, K., Burke, L., LaPiana, N., Howlett, B., Hunt, D., Dezelar, M., Andre, J. B., Ralston, J., **Rokem, A***, and Mac Donald, C* (2023). Advanced diffusion MRI modeling sheds light on FLAIR white matter hyperintensities in an aging cohort. *Proceedings of the MICCAI Workshop on Computational Diffusion MRI, 2023*

79. Kruper, J. and **Rokem, A** (2023). Automatic fast and reliable recognition of a small brain white matter bundle. *Proceedings of the MICCAI Workshop on Computational Diffusion MRI, 2023*

78. Grotheer, M., Bloom, D., Kruper, J., Richie-Halford, A., Zika, S., Aguilera Gonzàlez, V. A., Yeatman, J. D., Grill-Spector, K., and **Rokem, A** (2023). Human white matter myelinates faster in utero than ex utero. *Proceedings of the National Academy of Sciences*, 120:e2303491120

77. Kruper, J., Benson, N. C., Caffarra, S., Owen, J., Wu, Y., Lee, A. Y., Lee, C. S., Yeatman, J. D., and **Rokem, A** (2023a). Optic radiations representing different eccentricities age differently. *Human Brain Mapping*, 44:3123–3135

76. Richie-Halford, A., Cieslak, M., Ai, L., Caffarra, S., Covitz, S., Franco, A. R., Karipidis, I. I., Kruper, J., Milham, M., Avelar-Pereira, B., Roy, E., Sydnor, V. J., Yeatman, J. D., Satterthwaite, T.D.*, and **Rokem, A*** (2022). An analysis-ready and quality controlled resource for pediatric brain white-matter research. *Scientific Data*, 9(1):1–27

75. Yücel, E. I., Sadeghi, R., Kartha, A., Montezuma, S. R., Dagnelie, G., **Rokem, A**, Boynton, G. M., Fine, I., and Beyeler, M. (2022). Factors affecting two-point discrimination in Argus II patients. *Frontiers in Neuroscience*, 16:901337

74. Graham, S., **Rokem, A**, , and Lambers, J. H. R. (2022). forestexplorR: an R package for the exploration and analysis of stem-mapped forest stand data. *Ecography*, 2022(10):e06223

73. Fadnavis, S., Endres, S., Wen, Q., Wu, Y.-C., Cheng, H., Koudoro, S., Rane, S., **Rokem, A**, and Garyfallidis, E. (2021). Bifurcated topological optimization for IVIM. *Frontiers in Neuroscience*, 15

72. Hayot-Sasson, V., Glatard, T., and **Rokem, A** (2021). The benefits of prefetching for large-scale cloud-based neuroimaging analysis workflows. In *2021 IEEE Workshop on Workflows in Support of Large-Scale Science (WORKS)*, pages 42–49

71. **Rokem, A** (2021). Detect-ing brain anomalies with autoencoders. *Nature Computational Science*, 1(9):569–570

70. Graham, S. I., **Rokem, A.**, Fortunel, C., Kraft, N. J. B., and Lambers, J. H. R. (2021). Regularized regression: A new tool for investigating and predicting tree growth. *Forests*, 12(9):1283

69. Levitis, E., van Praag, C. D. G., Gau, R., Heunis, S., DuPre, E., Kiar, G., Bottenhorn, K. L., Glatard, T., Nikolaidis, A., Whitaker, K. J., Mancini, M., Niso, G., Afyouni, S., Alonso-Ortiz, E., Appelhoff, S., Arnatkeviciute, A., Atay, S. M., Auer, T., Baracchini, G., Bayer, J. M. M., Beauvais, M. J. S., Bijsterbosch, J. D., Bilgin, I. P., Bollmann, S., Bollmann, S., Botvinik-Nezer, R., Bright, M. G., Calhoun, V. D., Chen, X., Chopra, S., Chuan-Peng, H., Close, T. G., Cookson, S. L., Craddock, R. C., De La Vega, A., De Leener, B., Demeter, D. V., Di Maio, P., Dickie, E. W., Eickhoff, S. B., Esteban, O., Finc, K., Frigo, M., Ganesan, S., Ganz, M., Garner, K. G., Garza-Villarreal, E. A., Gonzalez-Escamilla, G., Goswami, R., Griffiths, J. D., Grootswagers, T., Guay, S., Guest, O., Handwerker, D. A., Herholz, P., Heuer, K., Huijser, D. C., Iacovella, V., Joseph, M. J. E., Karakuzu, A., Keator, D. B., Kobeleva, X., Kumar, M., Laird, A. R., Larson-Prior, L. J., Lautarescu, A., Lazari, A., Legarreta, J. H., Li, X.-Y., Lv, J., Mansour L., S., Meunier, D., Moraczewski, D., Nandi, T., Nastase, S. A., Nau, M., Noble, S., Norgaard, M., Obungoloch, J., Oostenveld, R., Orchard, E. R., Pinho, A. L., Poldrack, R. A., Qiu, A., Raamana, P. R., **Rokem A.**, Rutherford, S., Sharan, M., Shaw, T. B., Syeda, W. T., Testerman, M. M., Toro, R., Valk, S. L., Van Den Bossche, S., Varoquaux, G., Váša, F., Veldsman, M., Vohryzek, J., Wagner, A. S., Walsh, R. J., White, T., Wong, F.-T., Xie, X., Yan, C.-G., Yang, Y.-F., Yee, Y., Zanitti, G. E., Van Gulick, A. E., Duff, E., and Maumet, C. (2021). Centering inclusivity in the design of online conferences—An OHBM–Open Science perspective. *GigaScience*, 10(8)

68. Caffarra, S., Joo, S. J., Bloom, D., Kruper, J., **Rokem, A**, and Yeatman, J. D. (2021). Development of the visual white matter pathways mediates development of electrophysiological responses in visual cortex. *Hum. Brain Mapp.*, 42(17):5785–5797

67. Kiar, G., Chatelain, Y., de Oliveira Castro, P., Petit, E., **Rokem, A**, Varoquaux, G., Misic, B., Evans, A. C., and Glatard, T. (2021). Numerical uncertainty in analytical pipelines lead to impactful variability in brain networks. *PLoS One*, 16(11):e0250755

66. De Luca, A., Ianus, A., Leemans, A., Palombo, M., Shemesh, N., Zhang, H., Alexander, D. C., Nilsson, M., Froeling, M., Biessels, G.-J., Zucchelli, M., Frigo, M., Albay, E., Sedlar, S., Alimi, A., Deslauriers-Gauthier, S., Deriche, R., Fick, R., Afzali, M., Pieciak, T., Bogusz, F., Aja-Fernández, S., Özarslan, E., Jones, D. K., Chen, H., Jin, M., Zhang, Z., Wang, F., Nath, V., Parvathaneni, P., Morez, J., Sijbers, J., Jeurissen, B., Fadnavis, S., Endres, S., **Rokem, A**, Garyfallidis, E., Sanchez, I., Prchkovska, V., Rodrigues, P., Landman, B. A., and Schilling, K. G. (2021). On the generalizability of diffusion MRI signal representations across acquisition parameters, sequences and tissue types: chronicles of the MEMENTO challenge. *Neuroimage*, 240:118367

65. Kruper, J., Yeatman, J. D., Richie-Halford, A., Bloom, D., Grotheer, M., Caffarra, S., Kiar, G., Karipidis, I. I., Roy, E., Chandio, B. Q., Garyfallidis, E., and **Rokem, A** (2021). Evaluating the reliability of human brain white matter tractometry. *Aperture*, 1:1–25

64. Henriques, R., Correia, M., Maralle, M., Huber, E., Kruper, J., Koudoro, S., Yeatman, J. D., Gary-fallidis, E., and **Rokem, A.** (2021). Diffusion Kurtosis Imaging in the Diffusion Imaging in Python project. *Frontiers in Human Neuroscience*, 15

63. Richie-Halford, A., Yeatman, J. D., Simon, N., and **Rokem, A.** (2021). Multidimensional analysis and detection of informative features in human brain white matter. *PLoS Computational Biology*, 17(6):1–24. PMC5838108[pmc]

62. Cieslak, M., Cook, P. A., He, X., Yeh, F.-C., Dhollander, T., Adebimpe, A., Aguirre, G. K., Bassett, D. S., Betzel, R. F., Bourque, J., Cabral, L. M., Davatzikos, C., Detre, J. A., Earl, E., Elliott, M. A., Fadnavis, S., Fair, D. A., Foran, W., Fotiadis, P., Garyfallidis, E., Giesbrecht, B., Gur, R. C., Gur, R. E., Kelz, M. B., Keshavan, A., Larsen, B. S., Luna, B., Mackey, A. P., Milham, M. P., Oathes, D. J., Perrone, A., Pines, A. R., Roalf, D. R., Richie-Halford, A., **Rokem, A**, Sydnor, V. J., Tapera, T. M., Tooley, U. A., Vettel, J. M., Yeatman, J. D., Grafton, S. T., and Satterthwaite, T. D. (2021). Qsiprep: an integrative platform for preprocessing and reconstructing diffusion MRI data. *Nature Methods*, 18(7):775–778

61. Gau, R., Noble, S., Heuer, K., Bottenhorn, K. L., Bilgin, I. P., Yang, Y.-F., Huntenburg, J. M., Bayer, J. M. M., Bethlehem, R. A. I., Rhoads, S. A., Vogelbacher, C., Borghesani, V., Levitis, E., Wang, H.-T., Van Den Bossche, S., Kobeleva, X., Legarreta, J. H., Guay, S., Atay, S. M., Varoquaux, G. P., Huijser, D. C., Sandström, M. S., Herholz, P., Nastase, S. A., Badhwar, A., Dumas, G., Schwab, S., Moia, S., Dayan, M., Bassil, Y., Brooks, P. P., Mancini, M., Shine, J. M., O'Connor, D., Xie, X., Poggiali, D., Friedrich, P., Heinsfeld, A. S., Riedl, L., Toro, R., Caballero-Gaudes, C., Eklund, A., Garner, K. G., Nolan, C. R., Demeter, D. V., Barrios, F. A., Merchant, J. S., McDevitt, E. A., Oostenveld, R., Craddock, R. C., **Rokem, A**, Doyle, A., Ghosh, S. S., Nikolaidis, A., Stanley, O. W., Uruñuela, E., and The Brainhack Community (2021). Brainhack: Developing a culture of open, inclusive, community-driven neuroscience. *Neuron*, 109

60. Mehta, P., Petersen, C. A., Wen, J. C., Bannit, M. R., Chen, P. P., Bojikian, K. D., Egan, C., Lee, S.-I., Balazinska, M., Lee, A.Y.*, and **Rokem, A*** (2021). Automated detection of glaucoma with interpretable machine learning using clinical data and multi-modal retinal images. *American Journal of Ophthalmology*, 231:154–169

59. Richie Halford, A., Narayan, M., Simon, N., Yeatman, J., and **Rokem A.** (2021). Groupyr: Sparse Group Lasso in Python. *Journal of Open Source Software*, 6(58):3024

58. **Rokem, A** and Kay, K. (2020). Fractional ridge regression: a fast, interpretable reparameterization of ridge regression. *GigaScience*, 9(12)

57. Chandio, B. Q., Risacher, S. L., Pestilli, F., Bullock, D., Yeh, F.-C., Koudoro, S., **Rokem, A**, Harezlak, J., and Garyfallidis, E. (2020). Bundle analytics, a computational framework for investigating the shapes and profiles of brain pathways across populations. *Scientific Reports*, 10(1):17149

56. Bressler, D., **Rokem, A.**, and Silver, M. A. (2020). Slow endogenous fluctuations in cortical fMRI signals correlate with reduced performance in a visual detection task and are suppressed by spatial attention. *Journal of Cognitive Neuroscience*, 32:85–99

55. Beyeler, M., Boynton, G. M., Fine, I., and **Rokem, A.** (2019a). Model-based recommendations for optimal surgical placement of epiretinal implants. *The 22nd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2019), Shenzhen, China, Oct. 13-17, 2019.*

54. Bain, J., Yeatman, J., Schurr, R., **Rokem, A.**, and Mezer, A. (2019). Laterality of the arcuate fasciculus depends on choice of tractography. *Human Brain Mapping*, 40(13):3695–3711

53. Beyeler, M., Nanduri, D., Weiland, J. D., **Rokem, A.**, Boynton, G. M., and Fine, I. (2019b). A model of ganglion axon pathways accounts for percepts elicited by retinal implants. *Scientific Reports*, 9(1):9199

52. Lee, C. S., Tyring, A. J., Wu, Y., Xiao, S., **Rokem, A.**, DeRuyter, N. P., Zhang, Q., Tufail, A., Wang, R. K., and Lee, A. Y. (2019). Generating retinal flow maps from structural optical coherence tomography with artificial intelligence. *Scientific Reports*, 9(1):5694

51. Keshavan, A., Yeatman, J. D., and **Rokem, A.** (2019). Combining citizen science and deep learning to amplify expertise in neuroimaging. *Frontiers in Neuroinformatics*, 13:29

50. Curtis, C., **Rokem, A.**, and Nance, E. (2019). diff_classifier: Parallelization of multi-particle tracking video analyses. *Journal of Open Source Software*, 4(36):989

49. Huber, E., Henriques, R. N., Owen, J. P., **Rokem, A.**, and Yeatman, J. D. (2019). Applying microstructural models to understand the role of white matter in cognitive development. *Developmental Cognitive Neuroscience*, 36:100624

48. Tian, Q., Yang, G., Leuze, C., **Rokem, A.**, Edlow, B. L., and McNab, J. A. (2019). Generalized diffusion spectrum magnetic resonance imaging (GDSI) for model-free reconstruction of the ensemble average propagator. *NeuroImage*, 189:497–515

47. Smith, A. M., Niemeyer, K. E., Katz, D. S., Barba, L. A., Githinji, G., Gymrek, M., Huff, K. D., Madan, C. R., Mayes, A. C., Moerman, K. M., Prins, P., Ram, K., **Rokem, A**, Teal, T. K., Guimera, R. V., and Vanderplas, J. T. (2018). Journal of open source software (JOSS): design and first-year review. *PeerJ Comput. Sci.*, 4:e147

46. Huppenkothen, D., Arendt, A., Hogg, D. W., Ram, K., VanderPlas, J. T., and **Rokem, A** (2018). Hack weeks as a model for data science education and collaboration. *Proceedings of the National Academy of Sciences*, 115(36):8872–8877

45. Huber, E., Donnelly, P. M., **Rokem, A** , and Yeatman, J. D. (2018). Rapid and widespread white matter plasticity during an intensive reading intervention. *Nat. Commun.*, 9(1):2260

44. Richie-Halford, A. and **Rokem, A.** (2018). Cloudknot: A Python Library to Run your Existing Code on AWS Batch. In Fatih Akici, David Lippa, Dillon Niederhut, and Pacer, M., editors, *Proceedings of the 17th Python in Science Conference (SciPy)*

43. **Rokem, A.** (2018). A short course about fitting models with the scipy.optimize module. *The Journal of Open Source Education*, 1(2):16

42. Yeatman, J. D., Richie-Halford, A., Smith, J. K., Keshavan, A., and **Rokem, A** (2018). A browser-based tool for visualization and analysis of diffusion MRI data. *Nat. Commun.*, 9(1):940

41. Xiao, S., Bucher, F., Wu, Y., **Rokem, A.**, Lee, C., Marra, K., Fallon, R., Diaz-Aguilar, S., Aguilar, E., Friedlander, M., and Lee, A. (2017). Fully automated segmentation of mice oxygen induced retinopathy retinal images using deep convolutional neural networks. *JCI Insight*, 2:e97585

40. Polimis, K., **Rokem, A.**, and Hazelton, B. (2017). Confidence intervals for random forests in python. *The Journal of Open Source Software*, 2(19)

39. Beyeler, M., Boynton, G., Fine, I., and **Rokem, A.** (2017a). pulse2percept: A Python-based simulation framework for bionic vision. In *Proceedings of the 15th Python in Science Conference (SciPy)*

38. Lee, C., Tyring, A., Deruyter, N., Wu, Y., **Rokem, A.**, and Lee, A. (2017). Deep-learning based, automated segmentation of macular edema in optical coherence tomography. *Biomed. Opt. Express*, 8(7):3440–3448

37. Mehta, P., Dorkenwald, S., Zhao, D., Kaftan, T., Cheung, A., Balazinska, M., **Rokem, A.**, Connolly, A., Vanderplas, J., and AlSayyad, Y. (2017). Comparative evaluation of big-data systems on scientific image analytics workloads. *Proceedings of the VLDB Endowment*, 10(11):1226–1237

36. Holdgraf, C., Culich, A., **Rokem, A.**, Deniz, F., Alegro, M., and Ushizima, D. (2017). Portable learning environments for hands-on computational instruction: Using container-and cloud-based technology to teach data science. In *Practice and Experience in Advanced Research Computing, 2017*

35. Beyeler, M., **Rokem, A.**, Boynton, G. M., and Fine, I. (2017b). Learning to see again: Biological constraints on cortical plasticity and the implications for sight restoration technologies. *Journal of neural engineering*, 14(5):051003

34. Henriques, R., **Rokem, A.**, Garyfallidis, E., St-Jean, S., Peterson, E., and Correia, M. (2017). [re] Optimization of a free water elimination two-compartment model for diffusion tensor imaging. *ReScience*, 3

33. Ferizi, U., Scherrer, B., Schneider, T., Alipoor, M., Eufracio, O., Fick, R., Deriche, R., Nilsson, M., Loya-Olivas, A., Rivera, M., Poot, D., Ramirez-Manzanares, A., Marroquin, J., **Rokem, A.**, Pötter, C., Dougherty, R., Sakaie, K., Wheeler-Kingshott, C., Warfield, S., Witzel, T., Wald, L., Raya, J., and Alexander, D. (2017). Diffusion MRI microstructure models with in vivo human brain Connectom data: results from a multi-group comparison. *NMR in Biomedicine*, 30:e3734

32. **Rokem, A.**, Takemura, H., Bock, A., Scherf, K., Behrmann, M., Wandell, B. A., Fine, I. Bridge, H., and Pestilli, F. (2017). The visual white matter: The application of diffusion MRI and fiber tractography to vision science. *Journal of Vision*, 17(4):1–30

31. DeSimone, K., **Rokem, A.**, and Schneider, K. (2016). Popeye: a population receptive field estimation tool. *The Journal of Open Source Software*, 1(8)

30. Craddock, R., Margulies, D., Bellec, P., Nichols, B., Alcauter, S., Barrios, F., Burnod, Y., Cannistraci, C., Cohen-Adad, J., De Leener, B., Dery, S., Downar, J., Dunlop, K., Franco, A., Froehlich, C. S., Gerber, A., Ghosh, S., Grabowski, T., Hill, S., Heinsfeld, A., Hutchison, R. M., Kundu, P., Laird, A., Liew, S.-L., Lurie, D., McLaren, D., Meneguzzi, F., Mennes, M., Mesmoudi, S., O'Connor, D., Pasaye, E., Peltier, S., Poline, J.-B., Prasad, G., , Pereira, R., Quirion, P.-O., **Rokem, A.**, Saad, Z., Shi, Y., Strother, S., Toro, R., Uddin, L., Van Horn, J., Van Meter, J., Welsh, R., and Xu, T. (2016). Brainhack: a collaborative workshop for the open neuroscience community. *Gigascience*, 5:16

29. Gorgolewski, K., Auer, R., Calhoun, V., Craddock, C., Das, S., Duff, E., Flandin, G., Ghosh, S., Glatard, T., Halchenko, Y., Handwerker, D., Hanke, M., Keator, D., Li, X., Michael, S., Maumet, C., Nichols, N., Nichols, T., Pellman, J., Poline, J., **Rokem, A.**, Schaefer, G., Sochat, V., Triplett, W., Turner, J., Varoquaux, G., and Poldrack, R. (2016). The Brain Imaging Data Structure, a format for organizing and describing outputs of neuroimaging experiments. *Scientific Data*

28. Mezer, A., **Rokem, A.**, Berman, S., Hastie, T., and Wandell, B. (2016). Evaluating quantitative proton-density-mapping methods. *Human brain mapping*, 37(10):3623–3635

27. Tian, Q., **Rokem, A.**, Folkerth, R. D., Nummenmaa, A., Fan, Q., Edlow, B. L., and McNab, J. A. (2016). Q-space truncation and sampling in diffusion spectrum imaging. *Magnetic Resonance in Medicine*, 76(6):1750–1763

26. Ajina, S., Pestilli, F., **Rokem, A.**, and Bridge, H. (2015). Human blindsight is mediated by an intact geniculo-extrastriate pathway. *eLife*, 4:e08935

25. **Rokem, A.**, Aragon, C., Arendt, A., Fiore-Gartland, B., Hazelton, B., Hellerstein, J., Herman, B., Howe, B., Lazowska, E., Parker, M., Staneva, V., Stone, S., Tanweer, A., and Vanderplas, J. (2015a). Building an urban data science summer program at the University of Washington eScience Institute. In *The Bloomberg Data Science 4 Good Exchange*

24. **Rokem, A.**, Yeatman, J. D., Pestilli, F., Kay, K. N., Mezer, A., van der Walt, S., and Wandell, B. A. (2015b). Evaluating the accuracy of diffusion MRI models in white matter. *PLoS ONE*, 10(4):e0123272

23. Takemura, H., **Rokem, A.**, Winawer, J., Yeatman, J. D., Wandell, B. A., and Pestilli, F. (2015). A major human white matter pathway between dorsal and ventral visual cortex. *Cerebral Cortex*, 26(5):2205–2214

22. Zheng, C. Y., Pestilli, F., and **Rokem, A.** (2014). Deconvolution of High Dimensional Mixtures via Boosting, with Application to Diffusion-Weighted MRI of Human Brain. *Adv Neural Inf Process Syst*, 27:2699–2707

21. Yeatman, J. D., Weiner, K. S., Pestilli, F., **Rokem, A.**, Mezer, A., and Wandell, B. A. (2014). The vertical occipital fasciculus: a century of controversy resolved by in vivo measurements. *Proc. Natl. Acad. Sci. U.S.A.*, 111(48):E5214–5223

20. Pestilli, F., Yeatman, J. D., **Rokem, A.**, Kay, K. N., and Wandell, B. A. (2014). Evaluation and statistical inference for human connectomes. *Nat. Methods*, 11(10):1058–1063

19. Garyfallidis, E., Brett, M., Amirbekian, B., **Rokem, A.**, van der Walt, S., Descoteaux, M., and Nimmo-Smith, I. (2014). Dipy, a library for the analysis of diffusion MRI data. *Front Neuroinform*, 8:8

18. McDevitt, E. A., **Rokem, A.**, Silver, M. A., and Mednick, S. C. (2014). Sex differences in sleep-dependent perceptual learning. *Vision Res.*, 99:172–179

17. Kay, K. N., **Rokem, A.**, Winawer, J., Dougherty, R. F., and Wandell, B. A. (2013a). GLMdenoise: a fast, automated technique for denoising task-based fMRI data. *Front Neurosci*, 7:247

16. Yoon, J. H., Sheremata, S. L., **Rokem, A.**, and Silver, M. A. (2013). Windows to the soul: vision science as a tool for studying biological mechanisms of information processing deficits in schizophrenia. *Front Psychol*, 4:681

15. **Rokem, A.** and Silver, M. A. (2013). The benefits of cholinergic enhancement during perceptual learning are long-lasting. *Front Comput Neurosci*, 7:66

14. Kay, K. N., Winawer, J., **Rokem, A.**, Mezer, A., and Wandell, B. A. (2013b). A two-stage cascade model of BOLD responses in human visual cortex. *PLoS Comput. Biol.*, 9(5):e1003079

13. Kosovicheva, A. A., Sheremata, S. L., **Rokem, A.**, Landau, A. N., and Silver, M. A. (2012). Cholinergic enhancement reduces orientation-specific surround suppression but not visual crowding. *Front Behav Neurosci*, 6:61

12. **Rokem, A.**, Landau, A. N., Prinzmetal, W., Wallace, D. L., Silver, M. A., and D'Esposito, M. (2012). Modulation of inhibition of return by the dopamine D2 receptor agonist bromocriptine depends on individual DAT1 genotype. *Cereb. Cortex*, 22(5):1133–1138

11. **Rokem, A.**, Yoon, J. H., Ooms, R. E., Maddock, R. J., Minzenberg, M. J., and Silver, M. A. (2011). Broader visual orientation tuning in patients with schizophrenia. *Front Hum Neurosci*, 5:127

10. **Rokem, A.** and Silver, M. A. (2010). Cholinergic enhancement augments magnitude and specificity of visual perceptual learning in healthy humans. *Curr. Biol.*, 20(19):1723–1728

9. **Rokem, A.**, Landau, A. N., Garg, D., Prinzmetal, W., and Silver, M. A. (2010). Cholinergic enhancement increases the effects of voluntary attention but does not affect involuntary attention. *Neuropsychopharmacology*, 35(13):2538–2544

8. Yoon, J. H., Maddock, R. J., **Rokem, A.**, Silver, M. A., Minzenberg, M. J., Ragland, J. D., and Carter, C. S. (2010). GABA concentration is reduced in visual cortex in schizophrenia and correlates with orientation-specific surround suppression. *J. Neurosci.*, 30(10):3777–3781

7. Eyherabide, H. G., **Rokem, A.**, Herz, A. V., and Samengo, I. (2009). Bursts generate a non-reducible spike-pattern code. *Front Neurosci*, 3(1):8–14

6. **Rokem, A.**, Trumpis, M., and Pèrez, F. (2009). Nitime: time-series analysis for neuroimaging data. In Varoquaux, G., van der Walt, S., and Millman, J., editors, *Proceedings of the 8th Python in Science Conference (SciPy)*

5. Yoon, J. H., **Rokem, A.**, Silver, M. A., Minzenberg, M. J., Ursu, S., Ragland, J. D., and Carter, C. S. (2009). Diminished orientation-specific surround suppression of visual processing in schizophrenia. *Schizophr Bull*, 35(6):1078–1084

4. **Rokem, A.** and Silver, M. A. (2009). A model of encoding and decoding in V1 and MT accounts for motion perception anisotropies in the human visual system. *Brain Res.*, 1299:3–16

3. **Rokem, A.** and Ahissar, M. (2009). Interactions of cognitive and auditory abilities in congenitally blind individuals. *Neuropsychologia*, 47(3):843–848

2. Eyherabide, H. G., **Rokem, A.**, Herz, A. V., and Samengo, I. (2008). Burst firing is a neural code in an insect auditory system. *Front Comput Neurosci*, 2:3

1. **Rokem, A.**, Watzl, S., Gollisch, T., Stemmler, M., Herz, A. V., and Samengo, I. (2006). Spike-timing precision underlies the coding efficiency of auditory receptor neurons. *J. Neurophysiol.*, 95(4):2541–2552

* indicates equal contribution

Books and book chapters

4. **Rokem, A** and Yarkoni, T. (2023). *Neuroimaging and Data Science: An Introduction*. Princeton University Press, Princeton, NJ. http://neuroimaging-data-science.org/

3. **Rokem, A.** (2018). Reproducibility in human neuroimaging research: A practical example from the analysis of diffusion mri. In Kitzes, J., Turek, D., and Deniz, F., editors, *The Practice of Reproducible Research: Case Studies and Lessons from the Data-Intensive Sciences*. University of California Press, Oakland, CA

2. **Rokem, A.** and Chirigati, F. (2018). Glossary of reproducible research. In Kitzes, J., Turek, D., and Deniz, F., editors, *The Practice of Reproducible Research: Case Studies and Lessons from the Data-Intensive Sciences*. University of California Press, Oakland, CA

1. **Rokem, A.**, Marwick, B., and Staneva, V. (2018). Assessing reproducibility. In Kitzes, J., Turek, D., and Deniz, F., editors, *The Practice of Reproducible Research: Case Studies and Lessons from the Data-Intensive Sciences*. University of California Press, Oakland, CA

White papers and work in progress

1. **Rokem, A*** and Benson, N. C.* (2024). Hands-on neuroinformatics education at the crossroads of online and in-person: lessons learned from neurohackademy. *under review*

2. Roy, E., Van Rinsveld, A., Nedelec, P., Richie-Halford, A., Rauschecker, A. M., Sugrue, L. P., **Rokem, A**, McCandliss, B. D., and Yeatman, J. D. (2023). Educational environment and white matter development in early adolescence. *bioRxiv*. https://www.biorxiv.org/content/10.1101/2023.10.10.561784v1

3. **Rokem, A**, Qiao, J., Yeatman, J. D., and Richie-Halford, A. (2023). Incremental improvements in tractometry-based brain-age modeling with deep learning. https://www.biorxiv.org/content/10.1101/2023.03.02.530885v1

4. Pogoncheff, G., Hu, Z., **Rokem, A**, and Beyeler, M. (2023). Explainable machine learning predictions of perceptual sensitivity for retinal prostheses. https://www.medrxiv.org/content/early/2023/02/10/2023.02.09.23285633

5. Kruper, J., Richie-Halford, A., Benson, N. C., Caffarra, S., Owen, J., Wu, Y., Lee, A. Y., Lee, C. S., Yeatman, J. D., and **Rokem, A** (2023b). Effects of glaucoma specific to optic radiation tissue properties. https://www.biorxiv.org/content/10.1101/2023.01.17.524459v1

6. **Rokem, A**, Dichter, B., Holdgraf, C., and Ghosh, S. S. (2021). Pan-neuro: interactive computing at scale with BRAIN datasets. https://osf.io/mwh2b/

* indicates equal contribution

Online courses

1. Rokem, A. (2018). DataCamp course: Convolutional neural networks for image processing. https://www.datacamp.com/courses/convolutional-neural-networks-for-image-processing

2. Rokem, A. (2019). DataCamp course: Introduction to Matplotlib. https://www.datacamp.com/courses/introduction-to-matplotlib

Honors and awards

2023	McGill University Neuro / Irv and Helga Cooper Foundation Open Science Prize for international projects, received as a member of the Brain Imaging Data Structure steering group ($ 80,000 CAD).
2022 – 2024	Elected member of the Brain Imaging Data Structure (BIDS) steering group.
2012 – 2015	NIH Postdoctoral National Research Service Award.
2009 – 2010	NIH Predoctoral National Research Service Award.

Funded research

2023-2024 NSF Workshop: Towards an Open Source Model for Data and Metadata Standards (role: PI) $ 99,953

2018-2027 NIH R01: Community-supported open-source software for computational neuroanatomy (role: sub-contract PI, PI: Eleftherios Garyfallidis), $ 2,726,578

2019-2024 NIH BRAIN Initiative RF1: A data science toolbox for analysis of Human Connectome Project diffusion MRI (role: PI), $707,444.

2017-2027 NIH/National Institute for Mental Health, R25: Summer Institute in Neuroimaging and Data Science (role: PI), $2,003,598

2021-2026 NIH U19: Adult Changes in Thought (ACT) Research Program (role: Senior Personnel, PI: Eric Larson and Paul Crane), $23,352,014

2022-2024 Chan Zuckerberg Initiative Essential Open Source Software: Diffusion Imaging in Python (role: co-Investigator; PI: Serge Koudoro), $165,407

2021-2024 NIH R01 A community-driven development of the brain imaging data standard (BIDS) to describe macroscopic brain connections (role: Senior Personnel; PI: Franco Pestilli) $352,342.

2021-2024 NIH R01 NIPreps: integrating neuroimaging preprocessing workflows across modalities, populations, and species (role: multi-PI) $1,630,690

2019-2024 NIH R01: Aging eyes and aging brains in studying Alzheimer's disease: modern ophthalmic data collection in the Adult Changes in Thought (ACT) study (role: Senior Personnel; PI: Cecilia Lee). $17,197,690

Completed funded research

2019-2023 NSF BDHUBS: Collaborative Proposal: West: Accelerating the Big Data Innovation Ecosystem (role: Senior Personnel, PI: Ed Lazowska), $201,822.

2019-2023 NSF HDR: I-DIRSE-FW: Accelerating the Engineering Design and Manufacturing Life-Cycle with Data Science (role: co-PI; PI: Magda Balazinska), $2,320,979.

2017-2023 The Bill & Melinda Gates Foundation: Advance Data Analytic Support for Strategic PNW Partners by eScience Institute (role: co-PI, PI: Bill Howe), $754,601.

2021-2022 UW Azure Cloud Computing Credits (role: PI), $43,000

2021-2022 NSF AccelNet Exchange Grant through the International Network for Biologically-Inspired Computing $10,000.

2018-2022 NIH BRAIN Initiative U19: Computational and Circuit Mechanisms Underlying Rapid Learning. (role: Data Science Core Senior Personnel, PI: Beth Buffalo), $14,439,172.

2021 Google Cloud Research Credits (role: PI), $5,000

2021 Amazon Web Services Cloud Computing Credits (role: PI), $5,000

2020 Google Cloud Research Credits (role: PI), $5,000

2021 UW Azure Cloud Computing Credits (role: PI), $20,000

2020 Google Cloud Research Credits (role: PI), $5,000

2018 - 2021 NSF TRIPODS + X EDU: Foundational training in neuroscience and geoscience via hack weeks (role: co-PI, PI: Maryam Fazel), $ 185,058.

2017-2020 NSF SI2-SSE: An ecosystem of reusable image analytics pipelines (role: co-PI, PI: Andy Connolly), $500,000.

2019 Google TensorFlow Research Cloud credits, 100 TPU hours role: PI.

2017-2018 The Bill & Melinda Gates Foundation: The King County Analytics Project (role: co-PI, PI: Bryna Hazelton), $320,000.

2017-2018 NSF ACI SI2-S2I2: Conceptualization: Conceptualizing a US Research Software Sustainability Insti-

tute (URSSI) (role: senior Personnel, PI: Daniel Katz), $ 499,999.

2015-2018	NSF BDHUBS: A Big Data Innovation Hub for the Western United States (role: co-PI, PI: Ed Lazowska), $201,822.
2017	XSEDE: Educational allocation for a one-day course in neuroscience and data science (role: PI), 10,000 core hours.
2016	Amazon Web Services cloud computing credits for research (role: PI), $30,000.
2015-2016	The Bill & Melinda Gates Foundation: Increasing Data-Driven Decision Making through Data Modeling Techniques and Best Practices (role: co-PI, PI: Bryna Hazelton), $140,995.
2012	Stanford CNI Seed grant: Diffusion MRI measured with multiple b-values (role: PI), $8,000.
2012-2015	NIH/National Eye Institute, National Research Service Award (F32): The Anatomical Basis of Texture Perception in Central and Peripheral Visual Field (role: PI), $155,346.
2009-2010	NIH/National Institute for Aging, National Research Service Award (F31): Neural Mechanisms of Perceptual Learning (role: PI), $22,253.

Invited talks

7/2024	National Institute for Physiological Sciences, Okazaki
7/2024	Yonsei University, Seoul
6/2024	Department of Psychology, University of Marburg
11/2023	Tanenbaum Open Science Institute Leaders Council.
11/2023	McGill University Quantitative Life Sciences and Medicine seminar series.
4/2023	Academic Data Science Alliance. "Careers in neuroscience and data science" panel.
11/2022	Society for Neuroscience Professional Development Workshop: "Brain Data Science: A World of New Neuroscience Career Opportunities".
7/2022	Invited talk at Pacific Northwest National Lab MARS Seminar (online).
8/2021	Invited talk at Research Running on Cloud Compute & Emerging Technologies (RRoCCET) 2021 (online).
6/2021	Oregon State University (Corvalis) and Nanyang Techincal University (Singapore) CN Yang Scholars program (online)
10/2020	Open Data Science Conference West, San Francisco, CA (and online).
9/2020	Amazon Web Services Education: Research Seminar Series (online)
9/2019	INCF Neuroinformatics congress, Warsaw, Poland (Keynote).
5/2019	Halıcıoğlu Data Science Institute, University of California, San Diego.
5/2019	Northwest Data Science Summit, University of Washington, Seattle, WA.
10/2018	Carnegie Mellon University, Open Science Symposium, Pittsburgh, PA.
10/2018	Presentation to the Advisory Council to the NIH Director Working Group for the BRAIN Initiative 2.0, Baylor College of Medicine, Houston, TX.
6/2018	ISMRM educational course: "Modeling diffusion MRI", Paris, France.
5/2018	Edmund and Lily Safra Center for Brain Science, The Hebrew University of Jerusalem, Israel.
5/2018	Department of Physiology and Biophysics, University of Washington, Seattle, WA.
11/2017	Center for Studies in Demography and Ecology, University of Washington, Seattle, WA.
7/2017	PNW Prostate Cancer SPORE annual meeting, Seattle, WA.
11/2015	Psychology Department, Indiana University, Bloomington, IN.
3/2015	Berkeley Institute for Data Science. Berkeley, CA
8/2014	Neuroimaging Laboratory, Washington University, Saint Louis, MO.
5/2013	Max Planck Institute for Brain Research, Frankfurt, Germany.
1/2012	Tech talk at GitHub Inc, San Francisco, CA

6/2011	Psychology Department, Dartmouth University. Hannover, NH.
1/2011	Center for Magnetic Resonance Research, University of Minneapolis. Twin Cities, MN
1/2011	Department of Psychology, Vanderbilt University. Nashville, TN.
3/2009	Posit Science. San Francisco, CA.
10/2008	Stanford Vision Lunch. Stanford, CA.
9/2008	The Institute for Theoretical Biology, Humboldt University, Berlin, Germany.
9/2008	The Institute for Biology, Ludwig-Maximillian University, Munich, Germany.
8/2008	UC Davis, Imaging Research Center. Davis, CA.

Software

Core contributions

2015 –	*pyAFQ*: automated quantification of brain white matter fibers https://yeatmanlab.github.io/pyAFQ/.
2017 –	*AFQ-Browser* https://yeatmanlab.github.io/AFQ-Browser.
2020 –	*AFQ-Insight*: Statistical learning for tractometry data https://yeatmanlab.github.io/AFQ-Insight/.
2022 –	*TractR*: Statistical learning for tractometry data https://github.com/yeatmanlab/tractr/.
2017 –	*Cloudknot*: a pythonic interface to AWS Batch Services. https://nrdg.github.io/cloudknot
2016 –	*Pulse2percept*: Models for Sight Restoration. https://uwescience.github.io/pulse2percept/
2011 –	*DIPY*: diffusion MRI in Python, http://dipy.org
2008 –	*Nitime*: Time-series analysis for neuroscience, http://nitime.org

Minor contributions

Minor contributions across many open source software libraries in the Python scientific eco system, including *Scipy*, *Matplotlib*, *Scikit Learn*, *Scikit Image*, *Jupyter* and *IPython*, as well as many neuroscience-specific software libraries, including *Nibabel*, *Nipype*, *Nipy*. Full record of open-source software contributions available at https://github.com/arokem

Data sets

2013	Human brain diffusion-weighted MRI, collected with high diffusion-weighting angular resolution and repeated measurements at multiple diffusion-weighting strengths, https://purl.stanford.edu/ng782rw8378
2012	Test-retest Diffusion MRI, measured at 1.5 mm isotropic resolution, b-value=2000 s/mm^2 , https://purl.stanford.edu/rt034xr8593
2005	Intracellular recordings from insect primary auditory receptor neurons, https://crcns.org/data-sets/ia/ia-1

Selected Conference presentations

1. Early life adversity and white matter development. Adam Richie-Halford, Ethan Roy, John Kruper, Jason Yeatman, **Ariel Rokem**. Annual Meeting of the Society for Neuroscience, 2022.

2. Deep learning for analysis of diffusion-MRI based white matter tractometry. Joanna Qiao, Jason Yeatman, **Ariel Rokem**, Adam Richie-Halford (2022). Annual Meeting of the Society for Neuroscience, 2022.

3. Francois Rheault, Valérie Hayot-Sasson, Robert E. Smith, Christopher Rorden, Jacques-Donald Tournier, Eleftherios Garyfallidis, Fang-Cheng Yeh, Christopher J. Markiewicz, Matthew Brett, Ben Jeurissen, Paul A. Taylor, D. Baran Aydogan, Derek A. Pisner, Serge Koudoro, Soichi Hayashi, Daniel Haehn, Steve Pieper, Daniel Bullock, Emanuele Olivetti, Jean-Christophe Houde, Marc-Alexandre Côté, Flavio Dell'Acqua, Alexander Leemans, Maxime Descoteaux, Bennett Landman, Franco Pestilli, and **Ariel Rokem** (2002). TRX: A community-oriented tractography file format. Annual Meeting of the Organization for Human Brain Mapping, 2022.

4. Adam Richie-Halford, Matthew Cieslak, Azeez Adebimpe, Sydney Covitz, McKenzie Paige Hagen, John Kruper, Mengjia Lyu, Oscar Miranda-Dominguez, Audrey Houghton, Damien Fair, Jason D. Yeatman, Theodore D. Satterthwaite, **Ariel Rokem**. (2022) NIRV: The NeuroImaging Report Viewer. Annual Meeting of the Organization for Human Brain Mapping, 2022.

5. Mareike Grotheer, David Bloom, John Kruper, Manjari Narayan, Adam Richie-Halford, Vicente A. Aguilera González, Jason D. Yeatman, Kalanit Grill-Spector, and **Ariel Rokem** (2022) Spatiotemporal differences in development of preterm infants white matter bundles are explained by faster *in utero* compared to *ex utero* myelination. Annual Meeting of the Organization for Human Brain Mapping, 2022.

6. Manjari Narayan, Noah Simon, Adam Richie-Halford, Jason Yeatman, **Ariel Rokem** (2021). Nonparametric causal analysis of brain and cognition, applied to developmental neuroimaging. Annual Meeting of the Organization for Human Brain Mapping 2021.

7. John Kruper, Jason D. Yeatman, Adam Richie-Halford,David Bloom, Mareike Grotheer, Sendy Caffarra, Gregory Kiar, Iliana I. Karipidis, Ethan Roy, **Ariel Rokem** (2021). Evaluating the reliability of diffusion-MRI based tractometry. Annual Meeting of the Organization for Human Brain Mapping 2021.

8. Adam Richie-Halford, Matthew Cieslak, Alexandre R. Franco, Valerie J. Sydnor, Jason Yeatman, Lei Ai, Michael Milham, Theodore D. Satterthwaite, **Ariel Rokem** (2021). A preprocessed open diffusion derivatives dataset from the Healthy Brain Network. Annual Meeting of the Organization for Human Brain Mapping 2021. Received *Merit Abstract Award*.

9. Mauro Bisson, Josh Romero, Thorsten Kurth, Massimiliano Fatica, Pablo F. Damasceno, Xihe Xie, Adam Richie-Halford, Serge Koudoro, Eleftherios Garyfallidis, **Ariel Rokem** (2021). GPU-accelerated diffusion MRI tractography in DIPY. International Society for Magnetic Resonance in Medicine 2021

10. Rafael Neto Henriques, Marta Correia, Maurizio Marrale, Elizabeth Huber, John Kruper, Serge Koudoro, Jason Yeatman, Eleftherios Garyfallidis, **Ariel Rokem** (2021). Diffusional Kurtosis Imaging in the Diffusion Imaging in Python Project. Inernational Society for Magnetic Resonance in Medicine 2021

11. A. Richie-Halford, J. Yeatman, N. Simon, and **A. Rokem** (2021). Multidimensional analysis and detection of informative features in diffusion MRI measurements of human white matter. Inernational Society for Magnetic Resonance in Medicine 2021. Received the *Magna Cum Laude* award based on reviewer scores.

12. A. Keshavan, J. Yeatman, **A. Rokem** (2019). Swipes for science: An open-source gamified citizen science framework for scalable data annotation. Organization for Human Brain Mapping, 2019.

13. A. Richie-Halford J. Yeatman, **A. Rokem**, A. Keshavan (2019). DMRIprep: a Robust, Scalable Preprocessing Pipeline for diffusion MRI. Organization for Human Brain Mapping 2019.

14. S. Xiao, Y. Wu, A. Y. Lee, **A. Rokem** (2019). MRI2MRI: deep learning neural networks infer brain diffusion properties from T1-weighted MRI. Organization for Human Brain Mapping 2019.

15. A. Richie-Halford, Jason Yeatman, Noah Simon, and **A. Rokem** (2018, 2019). Multidimensional analysis and detection of informative features in diffusion MRI measurements of human white matter. Society for Neuroscience, 2018. Organization for Human Brain Mapping 2019.

16. S. Xiao, Y. Wu and A.Y. Lee and **A. Rokem** (2018). MRI2MRI: A deep convolutional network that accurately transforms between brain MRI contrasts. International Society for Magnetic Resonance in Medicine, 2018

17. Q. Tian, G. Yang, C.W.U. Leuze, **A. Rokem**, B.L. Edlow, J. McNab (2017). Model-free Fourier Reconstruction of Diffusion Propagator and Orientation from Multi-b-shell Diffusion MRI Data. Annual Meeting of the The International Society for Magnetic Resonance in Medicine, 2017 and Annual Meeting of the Organization of Human Brain Mapping, 2017.

18. R. Neto-Henriques, Ø. Bergmann, **A. Rokem**, O. Pasternak, M. M. Correia (2017). Exploring the potentials and limitations of improved free-water elimination DTI techniques (2017). Annual Meeting of the The International Society for Magnetic Resonance in Medicine, 2017.

19. M. Beyeler, **A. Rokem**, G.M. Boynton, I. Fine (2017). Reverse-engineering optimized stimulation protocols in epiretinal prosthesis patients. The Eye and the Chip conference, 2017

20. M. Beyeler, **A. Rokem**, G.M. Boynton, I. Fine (2017). Modeling perceptual experience of retinal prosthesis patients during paired-electrode stimulation. Cosyne 2017.

21. **A. Rokem**, L. Huber, P. Mehta, R. Henriques, M. Balazinska, J. Yeatman (2016). Diffusion Kurtosis Imaging for the Human Connectome Project. Annual meeting of the Society for Neuroscience, San Diego, CA.

22. **A. Rokem**. Future Proofing Data Intensive Research at the University of Washington eScience Institute. Talk at the UW IT Tech Connect Conference, March 2016. Slides: http://arokem.github.io/2016-03-24-techconnect/

23. **A. Rokem**, E. Garyfallidis, F. Pestilli, B. Wandell, Statistical learning in DIPY. Talk presented at the 2015 Scientitfic Computing in Python meeting, Austin, TX and at PyData NW, Redmond, WA. Slides: http://arokem.github.io/2015-pydatanw/

24. S. Ogawa, H. Takemura, M. Terao, T. Haji, **A. Rokem**, F. Pestilli, J.D. Yeatman, H. Horiguchi, H. Tsuneoka, B.A. Wandell, Y. Masuda(2014) Trans-synaptic changes in central white matter pathways in retinitis pigmentosa. Annual meeting of the Society for Neuroscience, Washington D.C.

25. **A. Rokem**, G.S. Tang, T. Lucas, A. Thamrongrattanarit, L. Baltusis, R.F. Dougherty, R. Mata, L.L. Carstensen, G.R. Samanez-Larkin, and S.M. McClure (2014). Exploration and exploitation in action selection in humans depends on striatal GABA. Annual meeting of the Society for Neuroscience, Washington D.C.

26. **A. Rokem** and F. Pestilli (2014). Measuring and modeling diffusion and white matter tracts. Symposium talk at the Vision Science Society meeting. St Pete's Beach, FL.

27. **A. Rokem**, K. L. Chan, J.D. Yeatman, F. Pestilli, A. Mezer, and B. A. Wandell (2014). Evaluating the accuracy of diffusion models at multiple b-values with cross-validation. Annual meeting of the Society for Magnetic Resonance in Medicine. Milan, Italy.

28. Q. Tian, **A. Rokem**, B. L. Edlow, R. Folkerth, and J. A. McNab (2014). Aliasing Artifacts in Orientation Distribution Functions: A Diffusion Spectrum Imaging Study. Annual meeting of the Society for Magnetic Resonance in Medicine. Milan, Italy.

29. **A. Rokem** (2013). Tools for reproducible neuroimaging: an example from diffusion MRI. eResearch NZ, Christchurch, 2013.

30. **A. Rokem**, J.D. Yeatman, F. Pestilli, K.N. Kay, A. Mezer, S. Van der Walt and B.A. Wandell (2013). Evaluating models of diffusion MRI data with cross-validation. Annual meeting of the Organization for Human Brain Mapping, Seatlle, WA.

31. F. Pestilli, J.D. Yeatman, **A. Rokem**, K.N. Kay and B.A. Wandell (2013). Statistical evaluation of white matter connections. Annual meeting of the International Society for Magnetic Resonance in Medicine, Salt Lake City, UT and annual meeting of the Organization for Human Brain Mapping, Seattle, WA.

32. H. Takemura, F. Pestilli, **A. Rokem**, J. Winawer, J.D. Yeatman and B.A. Wandell (2013). The visual dorsal and ventral streams communicate through the vertical occipital fasciculus. Annual meeting of the Organization for Human Brain Mapping, Seattle, WA.

33. A. Mezer, J.D. Yeatman, **A. Rokem** and B.A. Wandell (2013). Language white matter tract laterality: from tractography to biophysical meaning. Annual meeting of the Organization for Human Brain Mapping, Seattle, WA.

34. J.D. Yeatman, A. Mezer, **A. Rokem**, F. Pestilli, H. Feldman and B.A. Wandell (2013) Automated Fiber-tract Quantification of White Matter Tissue Biology. Annual meeting of the Organization for Human Brain Mapping, Seattle, WA.

35. **A. Rokem**, and Landau A.N. (2013). Voluntary attention does not alleviate orientation specific surround suppression. Vision Sciences Society annual meeting. Naples, FL.

36. **A. Rokem**, and M.A. Silver Cholinergic enhancement increases information content of stimulus representations in human visual cortex (2012). Presentation at the symposium: Neuromodulatory Mechanisms, New Orleans, LA.

37. E. McDevitt, B. Bays, **A. Rokem**, M. A. Silver and S.C. Mednick (2012). Men need a nap to show perceptual learning of motion direction discrimination, but women do not. Vision Sciences Society Meeting, Naples, FL.

38. **A. Rokem**, Michael A. Silver (2012). Cholinergic enhancement of perceptual learning in the human visual system. Oral presentation at a symposium on neuromodulation of visual perception. Vision Sciences Society Meeting, Naples, FL.

39. **A. Rokem**, Michael A. Silver, Elizabeth A. McDevitt and Sara C. Mednick (2011), The effects of naps on the magnitude and specificity of perceptual learning of motion direction discrimination. Vision Sciences Society Meeting, Naples, FL.

40. **A. Rokem**, R.E. Ooms, J.H. Yoon, M.J. Minzenberg, C.S. Carter and M.A. Silver (2010), Broader tuning for stimulus orientation in patients with schizophrenia. Annual Meeting of the Society for Neuroscience, San Diego, CA.

41. **A. Rokem**, F. Perez, M. Trumpis, P. Ivanov, K. Koepsell, T. Blanche, D. Fegen, M. D'Esposito (2010). Nitime: an open-source library for time-series analysis of neuroscience data. Annual meeting of the Organization for Human Brain Mapping, Barcelona, Spain.

42. W. Prinzmetal, **A. Rokem**, A.N. Landau, D. Wallace, M.A. Silver, M. D'Esposito (2010). The effects of the D2 dopamine receptor agonist bromocriptine on voluntary and involuntary spatial attention in humans. Vision Sciences Society Meeting, Naples FL.

43. **A. Rokem** and M.A. Silver (2010) Cholinergic enhancement augments perceptual learning in the human visual system: a pharmacological fMRI study. Vision Sciences Society Meeting, Naples, FL.

44. **A. Rokem** and F. Perez (2009). Time-series analysis in Nipy. The 8th Python in Science Conference (SciPy 2009), Pasadena, CA

45. **A. Rokem**, D. Garg, A. Landau, W. Prinzmetal and M.A. Silver (2009). Effects of cholinergic enhancement on voluntary and involuntary attention. Vision Science Society Meeting, Naples, FL, Annual Meeting of the Society for Neuroscience, Chicago, IL and CSAIL conference, Hood River, OR.

46. D.W. Bressler, **A. Rokem**, M.A. Silver (2009). Visual spatial attention improves fMRI response reliability by decreasing the amplitude of endogenous slow oscillations in visual cortex. Annual Meeting of the Society for Neuroscience, Chicago, IL.

47. **A. Rokem** and M.A. Silver (2008) Cholinergic enhancement augments perceptual learning in the human visual system. Annual Meeting of the Society for Neuroscience, Washington, DC.

48. M.A. Silver, J. Yoon, **A. Rokem**, M.J. Minzenberg and C.S. Carter (2008) Reduced orientation-specific surround suppression in schizophrenia. Annual Meeting of the Society for Neuroscience, Washington, DC.

49. J.-H. Schleimer, **A. Rokem**, M.B. Stemmler (2008) Optimal phase dynamics of oscillatory neurons, the spike-triggered stimulus covariance, and maximal information transfer. Annual Meeting of the Society for Neuroscience, Washington, DC.

50. **A. Rokem**, S. Sanghvi and M. Silver (2007). Motion adaptation bandwidth anisotropies in the human visual system. The Optical Society of America Fall Vision Meeting, Berkeley, CA, September 2007 and Dynamical Neuroscience XV – 3rd Annual Computational Cognitive Neuroscience Conference, San Diego, CA, November 2007 (selected to appear in a special issue of Brain Research devoted to Computational Cognitive Neuroscience).

51. I. Samengo, H.G. Eyherabide, **A. Rokem** and A.V.M. Herz (2006). Information transmission in burst spiking. 2nd Bernstein Symposium for Computational Neuroscience. Berlin, Germany, 2006

52. M. Nahum, **A. Rokem**, I. Nelken and M. Ahissar (2004). Speech intelligibility & binaural interactions: effects of stimulus familiarity, stimulus similarity & set size. The annual meeting of the Israeli Society for Neuroscience, the 30th Goettingen Neurobiology conference, and Cosyne 2005.

53. **A. Rokem** and M. Ahissar (2004). Interactions between sensory and cognitive abilities in early-blind individuals. The annual meeting of the Israeli Society for Neuroscience and at the 30th Goettingen Neurobiology conference.

54. S. Watzl, **A. Rokem**, T. Gollisch and A.V. Herz (2003). Coding capacitites of auditory receptor cells under different stimulus conditions. The 29th Goettingen Neurobiology conference.

Teaching

Classes

Spring 2024	Informatics for Psychology
5/2021	Guest instructor – Image Analysis for Data Scientists, UW Department of Chemical Engineering (Instructor: Chad Curtis)
5/2018	Guest instructor – Data Science and Society, UW Department of Sociology (Instructor: Afra Mashhadi)
10/2017	Guest instructor – Data Science and Society, UW Department of Sociology (Instructor: Afra Mashhadi)
11/2015	Guest Instructor – eScience Python Seminar (Instructor: Jake Vanderplas).
4/2014	Guest Instructor: MA capstone class, Department of Statistics, University of California, Berkeley (Instructor: Victoria Stodden).
10/2013	Guest Instructor – MRI methods, Department of Psychology, Stanford University (Instructor: Brian Wandell).
Spring 2008	Teaching Assistant – Brain Mind and Behavior, Department of Biology, UC Berkeley (Instructor: David Presti).
Fall 2006	Teaching Assistant – Mammalian Neuroanatomy, Department of Biololgy, UC Berkeley (Instructor: Jeff Winer).
Fall 2003	Teaching Assistant – Perception, Department of Psychology, Hebrew University of Jerusalem (Instructor: Merav Ahissar).

Software and Data Carpentry

2022	University of Washington eScience Institute: led instruction of pilot workshop in Image Processing in Python, 20 participants.
2015 – 2020	University of Washington eScience Institute: led instruction of 20 workshops, >1,000 participants from >30 departments on campus.
2015 –	University of Washington eScience Institute: led 3 Carpentries instructor training workshops. Trained >40 Carpentries instructors.
2018 – 2021	Annual Instructor Training, The West Big Data Innovation Hub. Seattle, WA. Trained more than >50 Carpentries Instructors.
4/2018	Southern California Tribal Digital Village, Pala, CA
7/2016	Instructor Training, SciPy Annual Conference, Austin, TX.
12/2016	Instructor Training, Pacific Northwest National Lab, Richland, WA.
9/2016	Instructor Training, Oregon State University, Corvalis, OR.
11/2015	Data Carpentry (neuroimaging), Indiana University Psychology Department.
11/2014	Stanford University. Stanford, CA.
8/2014	Washington University, St. Louis, MO
9/2013	University of Southern California. Los Angeles, CA
6/2013	Christchurch University. Christchurch, New Zealand.
4/2013	Lawrence Berkeley National Lab. Berkeley, CA
3/2013	Stanford University. Stanford, CA

Other workshops

2021 – 2024	Co-organizer (with Catherine Lebel, François Rheault): "Tractometry : peering into the white matter", educational course at the annual meeting of the Organization for Human Brain Mapping
11/2023	Faculty: African Brain Data Science Academy https://africanbraindatanetwork.com/abds-academy/.
1/2022	Organizer and lead instructor: Workshop on data science training and collaboration in Hispanic-Serving Institutions (West Big Data Hub and HSI STEM Hub; https://uwescience.github.io/dstc-20220118/).
6/2021	Organizer and lead instructor: Workshop on data science training and collaboration in Hispanic-Serving Institutions (West Big Data Hub and HSI STEM Hub; https://uwescience.github.io/dstc-2021/).
9/2019	Organizer and lead instructor: workshop on data science training and collaboration in Hispanic-Serving Institutions (West Big Data Hub and HSI STEM Hub; https://uwescience.github.io/2019-09-16-dstc-workshop/).
2019 & 2020	Co-organizer (with Andrew Doyle): "Deep Learning in Human Brain Mapping", educational course at the annual meeting of the Organization for Human Brain Mapping
5/2015	Brainhacking 101. Organization for Human Brain Mapping annual meeting.
3/2014	Python for Neuroscience Workshop, University of Nottingham, UK.
10/2012	Reproducible Research in Neuroimaging Workshop. Stanford Center for Cognitive and Neurobiological Imaging.
8/2007	Matlab and the Psychophysics Toolbox, Department of Psychology, UC Berkeley.

Mentorship

Postdocs

2024 –	Ittai Shamir
2023 –	Kelly Chang
2020 – 2022	Adam Richie-Halford. Currently Research and Development Scientist at Stanford.
2020 – 2021	Manjari Narayan (with Jason Yeatman). Currently Machine Learning Scientist at Dyno Therapeutics.
2016 – 2019	Michael Beyeler (with Ione Fine). Currently Assistant Professor at the University of California, Santa-Barbara.
2017 – 2018	Anisha Keshavan (with Jason Yeatman). Currently Senior Data Scientist at Octave Biosciences.
2016 – 2017	Dongfang Zhao (With Magda Balazinska). Currently Assistant Professor at University of Nevada, Reno.

PhD students

As principal advisor

2022 –	John Kruper
2021 –	McKenzie Hagen

As secondary advisor

2017 –	Ezgi Yücel (with Ione Fine)
2022 –	Vaishnavi Mohan (with Ione Fine)

Post-baccalaureate students

2022 – 2024	Teresa Gomez (NIH research fellowship)
2020 – 2022	John Kruper (UWIN post-baccalaureate fellow).
2020 – 2021	David Bloom.

PhD committee membership

2021 – 2023	Shervin Sahba, UW Physics
2022	Kelly Chang, UW Department of Psychology
2019 – 2020	Parmita Mehta, UW Computer Science and Engineering.
2017 – 2020	Chad Curtis, UW Department of Chemical Engineering.
2017	Kivan Polimis, UW Department of Sociology.

Google Summer of Code Open Source Software Interns

Summer 2016	Shahnawaz Ahmed (DIPY).
Summer 2015	Rafael Neto-Henriques (DIPY).

Research interns and undergraduate students

2023	Qiqi Liang (Biology undergraduate student), Isaac Crane (Highschool student intern).
2022	Joanna Qiao (Psychology independent study).
2021	Leqi Teng (Psychology Honors Student), Cecilia Barnes (HCDE independent study).

Additional mentorship

2022 –	Academic Data Science Alliance individual mentorship: Emily Grabowski.
2023 –	African Brain Data Network mentorship: Fidelis Bayor (Ghana), Ibeachu Chinagorom (Nigeria), Safiya Hanwa (Nigeria)

Public Outreach

2023 –	Lectures about early life brain development to small groups of parents through the Program for Early Parent Support (PEPS) Seattle.

Service

2021 –	Advisory Committee for USC-based Reproducible Rehabilitation (ReproRehab) research education program https://www.reprorehab.usc.edu/
2020 –	Chair, International Neuroinformatics Coordinating Facility Training and Education Committee.
2021	Chair, "Data Science and Neuroinformatics" symposium at the International Neuroinformatics Coordination Facility Assembly
2018 – 2022	Member, Organization for Human Brain Mapping Education Committee.
2017 – 2020	Chair, University of Washington eScience Institute Special Interest Group on Neuroinformatics.
2020 – 2022	Deputy Chair, International Neuroinformatics Coordinating Facility Training and Education Committee.
2017 –	Member of the International Neuroinformatics Coordinating Facility Training and Education Committee.

2017 – 2018	Chair, University of Washington eScience Institute Working Group on Reproducibility and Open Science.
2017	Chair (with Olivia Guest) mini-symposium in neuroscience, *Scientific Computing in Python* conference.
2016 – 2019	Co-PI of the Western Big Data Innovation Hub.
2016 – 2017	Organizer of the ImageXD workshop series on image processing across domains (http://www.imagexd.org/).
2016 –	Software Carpentry Instructor Trainer: training and certifying instructors for Software Carpentry.
2016 –	Course Director: Summer Institute in Neuroimaging and Data Science (https://neurohackademy.org).
2014	Chair (with Franco Pestilli): "The White Matter Matters: Diffusion MRI in Vision Science". Symposium at the Vision Sciences Society annual meeting.
2012 –	Software Carpentry Instructor.
2007 - 2008	Coordinator, Working Group on Neuroscience and Philosophy of Mind, Townsend Center for the Humanities, University of California, Berkeley.

Editorial board member, *Scientific Data* (2021 -); Editorial board member, *Journal of Open Source Software* (2016 - 2021); Editorial board member, *Journal of Open Research Software* (2016 - 2019); Associate Editor, *Frontiers in Human Neuroscience* (2020 -); Associate Editor *Journal of Machine Learning Research* (2021-). Review Editor for *Proceedings of the National Academy of Science, USA* (2019). Editor, Special Topic: Explicating the interplay between anatomical and functional connectivity in the human brain, *Frontiers in Human Neuroscience* (2015). Program committee member for *Pattern Recognition in Neuroimaging* (2015, 2016), *Scientific Computing in Python* (2016, 2017).

Reviewer for *Annals of Applied Statistics*, *PLoS One*, *Human Brain Mapping*, *Journal of Cognitive Neuroscience*, *Frontiers in Human Neuroscience*, *Frontiers in Abnormal Psychology*, *Journal of Open Research Software*, *Neuroimage*, *Journal of Vision*, *F1000 Research*, *Journal of Neuroimaging*, *Current Opinion in Neuroscience*, *Psychophysiology*, *Scientific Data*, *Proceedings of the National Academy of Science, USA*, *Neuroinformatics*, *PLoS Computational Biology*, *eLife*, *IOVS*, *Nature Communications*, *Biological Psychiatry*, *Imaging Neuroscience*, *Ophthalmology Science*.

Grant reviewer for *NIH*, *NSF*, *Academic Data Science Alliance*, *Chan Zuckerberg Initiative*.

Last updated: March 27, 2024