

# Andrew An Chen

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## Education

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Expected 2023	PhD	University of Pennsylvania (Biostatistics) Advisors: Taki Shinohara, Ph.D. and Haochang Shou, Ph.D.
2020	MS	University of Pennsylvania (Biostatistics) Advisor: Jing Huang, Ph.D.
2017	BA	University of Pennsylvania (Cognitive Science and Psychology)

## Publications

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### Peer Reviewed

1. Bayer, J., Thompson, P. M., Ching, C. R. K., Liu, M., **Chen, A. A.**, Panzenhagen, A. C., Jahanshad, N., Marquand, A., Schmaal, L., & Sämann, P. G. (in press). Site effects how-to & when: An overview of retrospective techniques to accommodate site effects in multi-site neuroimaging analyses. *Frontiers in Neurology*.
2. Zuroff, L., Rezk, A., Shinoda, K., Espinoza, D. A., Elyahu, Y., Zhang, B., **Chen, A. A.**, Shinohara, R. T., Jacobs, D., Alcalay, R. N., Tropea, T. F., Chen-Plotkin, A., Monsonego, A., Li, R., & Bar-Or, A. (2022). Immune aging in multiple sclerosis is characterized by abnormal CD4 T cell activation and increased frequencies of cytotoxic CD4 T cells with advancing age. *eBioMedicine*, 82.
3. Liu, L. P., Shapira, N., **Chen, A. A.**, Shinohara, R. T., Sahbaee, P., Schnall, M., Litt, H. I., & Noël, P. B. (2022). First-generation clinical dual-source photon-counting CT: Ultra-low dose quantitative spectral imaging. *European Radiology*, 1-9.
4. Spitzer, H., Ripart, M., Whitaker, K., D'Arco, F., Mankad, K., **Chen, A. A.**, Napolitano, A., De Palma, L., De Benedictis, A., ... Wagstyl, K. (2022). Interpretable surface-based detection of focal cortical dysplasias: A MELD study. *Brain*, awac224.
5. **Chen, A. A.**, Srinivasan, D., Pomponio, R., Fan, Y., Nasrallah, I. M., Resnick, S. M., Beason-Held, L. L., Davatzikos, C., Satterthwaite, T. D., Bassett, D. S., Shinohara, R. T., & Shou, H. (2022). Harmonizing functional connectivity reduces scanner effects in community detection. *NeuroImage*, 256, 119198.
6. **Chen, A. A.**, Luo, C., Chen, Y., Shinohara, R. T., & Shou, H. (2022). Privacy-preserving harmonization via distributed ComBat. *NeuroImage*, 248, 118822.
7. **Chen, A. A.**, Beer, J. C., Tustison, N. J., Cook, P. A., Shinohara, R. T., Shou, H. (2022). Mitigating site effects in covariance for machine learning in neuroimaging data. *Human Brain Mapping*, 43(4), 1179–1195.

8. **Chen, A. A.**, Stein, R., Baldassano, R. N., & Huang, J. (2021). Learning longitudinal patterns and identifying subtypes of pediatric Crohn disease treated with infliximab via trajectory cluster analysis of electronic health records. *Journal of Pediatric Gastroenterology and Nutrition*, 74(3), 383–388.
9. Butler, E. R., **Chen, A. A.**, Ramadan, R., Le, T. T., Ruparel, K., Moore, T. M., Satterthwaite, T. D., Zhang, F., Shou, H., Gur, R. C., Nichols, T. E., & Shinohara, R. T. (2021). Pitfalls in brain age analyses. *Human Brain Mapping*, 42(13), 4092–4101.

## Under Review

1. Nikolaidis, A., **Chen, A. A.**, He, X., Shinohara, R. T., Vogelstein, J., Milham, M., & Shou, H. (2022). Suboptimal phenotypic reliability impedes reproducible human neuroscience. *Manuscript under review*.
2. **Chen, A. A.**, Clark, K., Dewey, B., DuVal, A., Pellegrini, N., Nair, G., Jalkh, Y., Khalil, S., Zurawski, J., Calabresi, P., Reich, D., Bakshi, R., Shou, H., & Shinohara, R. T. (2022). Deconfounded Dimension Reduction via Partial Embeddings. *Manuscript under review*.
3. Agraz, J. L., Grenko, C. M., **Chen, A. A.**, Viaene, A. N., Nasrallah, M. D., Pati, S., Kurc, T., Saltz, J., Feldman, M. D., Akbari, H., Sharma, P., Shinohara, R. T., & Bakas, S. (2022). Robust Image Cohort Subset-based Stain Color Normalization: How Many Normalization Reference Slides Are Enough? *Manuscript under review*.
4. **Chen, A. A.**, Weinstein, S. M., Adebimpe, A., Gur, R. C., Gur, R. E., Merikangas, K. R., Satterthwaite, T. D., Shinohara, R. T., & Shou, H. (2022). Similarity-Based Multimodal Regression *Manuscript under review*.

## In Preparation

1. **Chen, A. A.**, Shinohara, R. T., & Shou, H. (2022). Kernel Learning for Embedding-Based Inference. *Manuscript in preparation*.

## Presentations

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### Invited Presentations

2022                      Similarity-Based Multimodal Regression. *ENAR 2022 Spring Meeting*.

### Contributed Presentations

2022                      Harmonization of Functional Connectivity Reduces Scanner Effects in Community Detection. *2022 Joint Statistical Meetings*.

2021                      Similarity-Based Multimodal Regression. *14th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2021)*.

2021                      Similarity-Based Multimodal Regression. *2021 Joint Statistical Meetings*.

2020                      Removal of Scanner Effects in Covariance Improves Multivariate Pattern Analysis. *2020 Joint Statistical Meetings*.

2020                      Removal of Scanner Effects in Covariance Improves Multivariate Pattern Analysis. *ENAR 2020 Spring Meeting*.

## Poster Presentations

2022	Harmonization of Functional Connectivity Reduces Scanner Effects in Community Detection. <i>2022 Organization for Human Brain Mapping Annual Meeting</i> .
2022	Similarity-Based Multimodal Regression. <i>Statistical Methods in Imaging 2022 Conference</i> .
2021	Harmonization of Functional Connectivity Reduces Scanner Effects in Community Detection. <i>Statistical Methods in Imaging 2021 Conference</i> .
2020	Removal of Scanner Effects in Covariance Improves Multivariate Pattern Analysis. <i>2020 Organization for Human Brain Mapping Annual Meeting</i> .

## Teaching

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### Teaching Assistant

Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania, Philadelphia, PA

Spring 2021	BSTA 670: Programming and Computation for Biomedical Data Science
Spring 2020	BIOM 611: Statistical Methods for the Design and Analysis of Experiments

## Service

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2022	Session Chair at the 2022 Statistical Methods in Imaging Conference
2019 - 2020	Graduate Group in Epidemiology & Biostatistics Representative, Biomedical Graduate Student Association

## Peer Review

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Peer reviewer for Biostatistics, NeuroImage, Psychiatry Research: Neuroimaging, and Frontiers in Oncology

## Awards & Honors

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2022	Student Paper Award, JSM Section on Imaging Statistics
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## Memberships in Professional & Scientific Societies

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2020 - Present	Organization for Human Brain Mapping
2019 - Present	American Statistical Association
2018 - Present	Eastern North American Region of the International Biometric Society (ENAR IBS)

## Software

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CovBat	R and Python implementations for Correcting Covariance Batch Effects (CovBat) published in “Mitigating site effects in covariance for machine learning in neuroimaging data”. Hosted on GitHub.
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FCHarmony	R implementations for multiple functional connectivity harmonization methods including FC-ComBat, Block-ComBat, and FC-CovBat compared in “Harmonizing functional connectivity reduces scanner effects in community detection”. Hosted on GitHub.
dComBat	R and Python implementations for distributed ComBat (dComBat) published in “Privacy-preserving harmonization via distributed ComBat”. Hosted on GitHub.

## Technical Skills

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**Statistical Software:** R, Python, MATLAB, SAS

**Neuroimaging Software:** ITK-SNAP, MITK, Freesurfer

**Other:** R Shiny, SQL, Adobe Illustrator, MS Office

*Last updated 8/25/22*