Andrew An Chen

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Education

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

Peer Reviewed

1. **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.
2. **Chen, A. A.**, Luo, C., Chen, Y., Shinohara, R. T., & Shou, H. (2022). Privacy-preserving harmonization via distributed ComBat. *NeuroImage*, *248*, 118822.
3. **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.
4. **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.
5. 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? *IEEE Open Journal of Engineering in Medicine and Biology*.
6. 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. (2022). Site effects how-to & when: An overview of retrospective techniques to accommodate site effects in multi-site neuroimaging analyses. *Frontiers in Neurology*, 13.
7. 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.

8. 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.
9. 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.
10. 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. **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 at Biostatistics.*
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. Keller, A. S., Pines, A. R., Sydnor, V. J., Cui, Z., Bertolero, M. A., Barzilay, R., Alexander-Bloch, A. F., Byington, N., **Chen, A. A.**, Conan, G. M., Davatazikos, C., Feczko, E., Hendrickson, T. J., Houghton, A., Larsen, B., Li, H., Miranda-Dominguez, O., Roalf, D. R., Perrone, A., … Satterthwaite, T. D. (2022). Personalized Functional Brain Network Topography Predicts Individual Differences in Youth Cognition. *Manuscript under review.*
4. Antoniades, M., Srinivasan, D., Wen, J., Erus, G., Abdulkadir, A., Mamourian, E., Melhem, R., Hwang, G., Cui, Y., Govindarajan, S. T., **Chen, A. A.**, Zhou, Z., … Shou, H., Davatzikos, C. (2022). Patterns of advanced and resilient structural and functional brain-aging, and their associations with cross-sectional and longitudinal cognitive and clinical profiles, genetics, and AD neuropathology in the harmonized iSTAGING study. *Manuscript under review.*
5. 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.*

Presentations

Invited Presentations

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

Contributed Presentations

2023 Removal of Batch Effects in the Presence of Outliers via Robust ComBat. *ENAR 2023 Spring Meeting.*

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

Teaching

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

2022	Session Chair at the 2022 Statistical Methods in Imaging Conference
2020 - 2021	Interview Day Coordinator, Graduate Group in Epidemiology & Biostatistics
2019 - 2020	Graduate Group in Epidemiology & Biostatistics Representative, Biomedical Graduate Student Association

Peer Review

Biostatistics, Human Brain Mapping, NeuroImage, Medical Image Analysis, Psychiatry Research: Neuroimaging, Frontiers in Oncology, Japanese Journal of Radiology

Awards & Honors

2022	Student Paper Award, JSM Section on Imaging Statistics

Memberships in Professional & Scientific Societies

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

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.
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.
PARE	R implementation for PARtial Embeddings for deconfounded dimension reduction, manuscript currently under review. Hosted on GitHub.

Technical Skills

Statistical Software: R, Python, MATLAB, SAS

Neuroimaging Software: ITK-SNAP, MITK, Freesurfer

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

Last updated 5/22/23