

Stanford



Qingyu Zhao

Instructor, Psychiatry and Behavioral Sciences

Bio

BIO

I am interested in using machine learning and computational approaches to analyze longitudinal and multi-modal MRI to characterize how the white-matter architecture develops to support coordinated neural activity for developing higher-order executive functions. My research also extends to characterize the impact of alcohol and substance use on structure-function remodeling. My general interest lies in image analysis and machine learning for the detection, diagnosis, and treatment of diseases.

ACADEMIC APPOINTMENTS

- Instructor, Psychiatry and Behavioral Sciences

PROFESSIONAL EDUCATION

- Ph.D, University of North Carolina at Chapel Hill , Computer Science (2017)

LINKS

- my personal website: <http://stanford.edu/~qingyuz/>

Publications

PUBLICATIONS

- **Longitudinal Pooling & Consistency Regularization to Model Disease Progression From MRIs.** *IEEE journal of biomedical and health informatics*
Ouyang, J., Zhao, Q., Sullivan, E. V., Pfefferbaum, A., Tapert, S. F., Adeli, E., Pohl, K. M.
2021; 25 (6): 2082-2092
- **Longitudinal self-supervised learning.** *Medical image analysis*
Zhao, Q., Liu, Z., Adeli, E., Pohl, K. M.
2021; 71: 102051
- **Attenuated cerebral blood flow in frontolimbic and insular cortices in Alcohol Use Disorder: Relation to working memory.** *Journal of psychiatric research*
Sullivan, E. V., Zhao, Q. n., Pohl, K. M., Zahr, N. M., Pfefferbaum, A. n.
2021; 136: 140–48
- **Quantifying Parkinson's disease motor severity under uncertainty using MDS-UPDRS videos.** *Medical image analysis*
Lu, M., Zhao, Q., Poston, K. L., Sullivan, E. V., Pfefferbaum, A., Shahid, M., Katz, M., Kouhsari, L. M., Schulman, K., Milstein, A., Niebles, J. C., Henderson, V. W., Fei-Fei, et al
2021; 73: 102179
- **Association of Heavy Drinking With Deviant Fiber Tract Development in Frontal Brain Systems in Adolescents.** *JAMA psychiatry*
Zhao, Q., Sullivan, E. V., Honnorat, N., Adeli, E., Podhajsky, S., De Bellis, M. D., Voyvodic, J., Nooner, K. B., Baker, F. C., Colrain, I. M., Tapert, S. F., Brown, S. A., Thompson, et al
2020

- **Spatio-Temporal Graph Convolution for Resting-State fMRI Analysis.** *Medical image computing and computer-assisted intervention : MICCAI ... International Conference on Medical Image Computing and Computer-Assisted Intervention*
Gadgil, S., Zhao, Q., Pfefferbaum, A., Sullivan, E. V., Adeli, E., Pohl, K. M.
2020; 12267: 528–38
- **Inpainting Cropped Diffusion MRI using Deep Generative Models.** *PRedictive Intelligence in MEdicine. PRIME (Workshop)*
Ayub, R., Zhao, Q., Meloy, M. J., Sullivan, E. V., Pfefferbaum, A., Adeli, E., Pohl, K. M.
2020; 12329: 91-100
- **Deep Learning Identifies Morphological Determinants of Sex Differences in the Pre-Adolescent Brain.** *NeuroImage*
Adeli, E., Zhao, Q., Zahr, N. M., Goldstone, A., Pfefferbaum, A., Sullivan, E. V., Pohl, K. M.
2020; 117293
- **Accelerated aging and motor control deficits are related to regional deformation of central cerebellar white matter in alcohol use disorder** *ADDICTION BIOLOGY*
Zhao, Q., Pfefferbaum, A., Podhajsky, S., Pohl, K. M., Sullivan, E. V.
2020; 25 (3)
- **Training confounder-free deep learning models for medical applications.** *Nature communications*
Zhao, Q. n., Adeli, E. n., Pohl, K. M.
2020; 11 (1): 6010
- **Structural and biochemical imaging reveals systemic LPS-induced changes in the rat brain.** *Journal of neuroimmunology*
Fritz, M. n., Klawonn, A. M., Zhao, Q. n., Sullivan, E. V., Zahr, N. M., Pfefferbaum, A. n.
2020; 348: 577367
- **Adolescent alcohol use disrupts functional neurodevelopment in sensation seeking girls.** *Addiction biology*
Zhao, Q. n., Sullivan, E. V., M#ller-Oehring, E. M., Honnorat, N. n., Adeli, E. n., Podhajsky, S. n., Baker, F. C., Colrain, I. M., Prouty, D. n., Tapert, S. F., Brown, S. A., Meloy, M. J., Brumback, et al
2020; e12914
- **Jacobian Mapping Reveals Converging Substrates of Disruption and Repair in Response to Ethanol Exposure and Abstinence in Two Strains of Rats.** *Alcoholism, clinical and experimental research*
Zhao, Q. n., Pohl, K. M., Sullivan, E. V., Pfefferbaum, A. n., Zahr, N. M.
2020
- **Confounder-Aware Visualization of ConvNets.** *Machine learning in medical imaging. MLMI (Workshop)*
Zhao, Q., Adeli, E., Pfefferbaum, A., Sullivan, E. V., Pohl, K. M.
2019; 11861: 328–36
- **Covariance Shrinkage for Dynamic Functional Connectivity.** *Connectomics in neuroImaging : third International Workshop, CNI 2019, held in conjunction with MICCAI 2019, Shenzhen, China, October 13, 2019, Proceedings. CNI (Workshop) (3rd : 2019 : Shenzhen Shi, China)*
Honorat, N., Adeli, E., Zhao, Q., Pfefferbaum, A., Sullivan, E. V., Pohl, K.
2019; 11848: 32–41
- **Data Augmentation Based on Substituting Regional MRIs Volume Scores.** *Large-Scale Annotation of Biomedical Data and Expert Label Synthesis and Hardware Aware Learning for Medical Imaging and Computer Assisted Intervention : International Workshops, LABELS 2019, HAL-MICCAI 2019, and CuRIOUS 2019, held in c...*
Leng, T., Zhao, Q., Yang, C., Lu, Z., Adeli, E., Pohl, K. M.
2019; 11851: 32–41
- **On discrete Wirtinger-Northcott problems** *LINEAR ALGEBRA AND ITS APPLICATIONS*
Leng, T., Zhao, Q., Qin, X.
2019; 575: 141–58
- **Variational Autoencoder with Truncated Mixture of Gaussians for Functional Connectivity Analysis.** *Information processing in medical imaging : proceedings of the ... conference*
Zhao, Q., Honorat, N., Adeli, E., Pohl, K. M.
2019; 11492: 867-879

- **Accelerated aging and motor control deficits are related to regional deformation of central cerebellar white matter in alcohol use disorder.** *Addiction biology*
Zhao, Q., Pfefferbaum, A., Podhajsky, S., Pohl, K. M., Sullivan, E. V.
2019
- **PREDICTION OF TREATMENT OUTCOME FOR AUTISM FROM STRUCTURE OF THE BRAIN BASED ON SURE INDEPENDENCE SCREENING.** *Proceedings. IEEE International Symposium on Biomedical Imaging*
Zhuang, J., Dvornek, N. C., Zhao, Q., Li, X., Ventola, P., Duncan, J. S.
2019; 2019: 404-408
- **Longitudinally consistent estimates of intrinsic functional networks.** *Human brain mapping*
Zhao, Q., Kwon, D., Müller-Oehring, E. M., Le Berre, A. P., Pfefferbaum, A., Sullivan, E. V., Pohl, K. M.
2019
- **Longitudinally consistent estimates of intrinsic functional networks** *Human Brain Mapping*
Zhao, Q., Kwon, D., Müller-Oehring, E. M., Le Berre, A., Pfefferbaum, A., Sullivan, E. V., Pohl, K. M.
2019
- **PREDICTION OF TREATMENT OUTCOME FOR AUTISM FROM STRUCTURE OF THE BRAIN BASED ON SURE INDEPENDENCE SCREENING**
Zhuang, J., Dvornek, N. C., Zhao, Q., Li, X., Ventola, P., Duncan, J. S., IEEE
IEEE.2019: 404-8
- **Variational Autoencoder with Truncated Mixture of Gaussians for Functional Connectivity Analysis**
Zhao, Q., Honnorat, N., Adeli, E., Pfefferbaum, A., Sullivan, E. V., Pohl, K. M., Chung, A. C., Gee, J. C., Yushkevich, P. A., Bao, S.
SPRINGER INTERNATIONAL PUBLISHING AG.2019: 867-79
- **Variational AutoEncoder for Regression: Application to Brain Aging Analysis**
Zhao, Q., Adeli, E., Honnorat, N., Leng, T., Pohl, K. M., Shen, D., Liu, T., Peters, T. M., Staib, L. H., Essert, C., Zhou, S., Yap, P. T., Khan, et al
SPRINGER INTERNATIONAL PUBLISHING AG.2019: 823-31
- **Jacobian Maps Reveal Under-reported Brain Regions Sensitive to Extreme Binge Ethanol Intoxication in the Rat** *FRONTIERS IN NEUROANATOMY*
Zhao, Q., Fritz, M., Pfefferbaum, A., Sullivan, E. V., Pohl, K. M., Zahr, N. M.
2018; 12
- **Jacobian Maps Reveal Under-reported Brain Regions Sensitive to Extreme Binge Ethanol Intoxication in the Rat.** *Frontiers in neuroanatomy*
Zhao, Q., Fritz, M., Pfefferbaum, A., Sullivan, E. V., Pohl, K. M., Zahr, N. M.
2018; 12: 108
- **Chained regularization for identifying brain patterns specific to HIV infection** *NEUROIMAGE*
Adeli, E., Kwon, D., Zhao, Q., Pfefferbaum, A., Zahr, N. M., Sullivan, E. V., Pohl, K. M.
2018; 183: 425-37
- **A Riemannian Framework for Longitudinal Analysis of Resting-State Functional Connectivity.** *Medical image computing and computer-assisted intervention : MICCAI ... International Conference on Medical Image Computing and Computer-Assisted Intervention*
Zhao, Q., Kwon, D., Pohl, K. M.
2018; 11072: 145-153
- **Chained regularization for identifying brain patterns specific to HIV infection.** *NeuroImage*
Adeli, E., Kwon, D., Zhao, Q., Pfefferbaum, A., Zahr, N. M., Sullivan, E. V., Pohl, K. M.
2018
- **Alcohol use effects on adolescent brain development revealed by simultaneously removing confounding factors, identifying morphometric patterns, and classifying individuals** *SCIENTIFIC REPORTS*
Park, S., Zhang, Y., Kwon, D., Zhao, Q., Zahr, N. M., Pfefferbaum, A., Sullivan, E. V., Pohl, K. M.
2018; 8: 8297
- **A Riemannian Framework for Longitudinal Analysis of Resting-State Functional Connectivity**
Zhao, Q., Kwon, D., Pohl, K. M., Frangi, A. F., Schnabel, J. A., Davatzikos, C., AlberolaLopez, C., Fichtinger, G.
SPRINGER INTERNATIONAL PUBLISHING AG.2018: 145-53