Naren Wulan

Centre for sleep and cognition
National University of Singapore
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Google Scholar Profile

EDUCATION

2021.01 – 2025.04 **National University of Singapore, Singapore**
Ph.D., Electrical & Computer Engineering
Advisor: B.T. Thomas Yeo

2017.09 – 2019.07 **Harbin Institute of Technology, China**
M.S., Computer Technology
Advisors: Kuanquan Wang

2013.09 – 2017.07 **Harbin Institute of Technology, China**
B.Sc., Software Engineering
Advisors: Yong Xia & Kuanquan Wang

RESEARCH INTERESTS

Brain imaging, Neurodegenerative diseases, Heart diseases, Computational Pathology, Cancer Biomarkers

Applied Deep Learning, Applied Machine Learning, Computer Vision, Natural Language Processing

APPOINTMENTS

2024.01 – 2024.06 **Research Assistant**
Computational Brain Imaging Group, Yong Loo Lin School of Medicine,
National University of Singapore
Supervisor: B.T. Thomas Yeo

2020.09 – 2020.12 **Research Assistant**
Machine Learning Group
Microsoft Research Asia (MSRA)
Supervisor: Wei Chen

2020.04 – 2020.09 **Research Assistant**
Computer Vision & Imaging Processing Group
Beijing Gec Academy Internet Education

PUBLICATIONS

[1] **Wulan, N.**, An, L., Zhang, C., Kong, R., Chen, P., Bzdok, D., ... & Yeo, B. T. (2024). Translating phenotypic prediction models from big to small anatomical MRI data using meta-matching. bioRxiv, 2023-12.

[2] An, L., Zhang, C., **Wulan, N.**, Zhang, S., Chen, P., Ji, F., ... & Australian Imaging Biomarkers and Lifestyle Study of Aging. (2024). DeepResBat: deep residual batch harmonization accounting for covariate distribution differences. bioRxiv, 2024-01.

[3] Chen, P., An, L., **Wulan, N.**, Zhang, C., Zhang, S., Ooi, L. Q. R., ... & Yeo, B. T. (2023). Multilayer meta-matching: translating phenotypic prediction models from multiple datasets to small data. bioRxiv, 2023-12.

[4] Kong, R., Tan, Y. R., **Wulan, N.**, Ooi, L. Q. R., Farahibozorg, S. R., Harrison, S., ... & Yeo, B. T. (2023). Comparison between gradients and parcellations for functional connectivity prediction of behavior. NeuroImage, 273, 120044.

[5] Chopra, S., Dhamala, E., Lawhead, C., Ricard, J.A., Orchard, E.R., An, L., Chen, P., **Wulan, N.**, Kumar, P., Rubenstein, A. and Moses, J. (2022). Reliable and generalizable brain-based predictions of cognitive functioning across common psychiatric illness. medRxiv, 2022-12.

[6] **Wulan, N.**, Wang, W., Sun, P., Wang, K., Xia, Y., & Zhang, H. (2020). Generating electrocardiogram signals by deep learning. Neurocomputing, 404, 122-136.

[7] Dong, S., Luo, G., **Wulan, N.**, Cao, S., Wang, K., & Zhang, H. (2019, September). Weakly Supervised Deformation Network for 3D Echocardiography Segmentation on Left Ventricle. In 2019 Computing in Cardiology (CinC) (pp. 1-5). IEEE.

[8] Luo, G., Wang, K., **Wulan, N.**, Cao, S., Li, Q., Yuan, Y., & Zhang, H. (2019, September). A Novel Spatio-Temporal Self-Supervised Framework to Improve the Generalization Ability for Left Ventricle Volume Quantification Based on CMR Data. In 2019 Computing in Cardiology (CinC) (pp. Page-1). IEEE.

[9] **Wulan, N.**, Xia, Y., Wang, K., & Zhang, H. (2018). Detecting atrial fibrillation by deep convolutional neural networks. Computers in biology and medicine, 93, 84-92.

[10] **Wulan, N.**, Xia, Y., Wang, K., & Zhang, H. (2017, September). Atrial fibrillation detection using stationary wavelet transform and deep learning. In 2017 Computing in Cardiology (CinC) (pp. 1-4). IEEE.

ASTRACTS / TALKS

OHBM June 2024
Translating prediction models from big to small anatomical MRI data Seoul, Korea

ISMRM May 2024
Improving predictive performance on small anatomical MRI data via transfer learning Singapore

Centre for sleep and cognition, NUS Nov 2023
Meta-matching-based model transfer Singapore (Virtual)

Centre for sleep and cognition, NUS Oct 2022
Ceiling of training samples needed for meta-matching-based transfer on function MRI Singapore (Virtual)

Centre for sleep and cognition, NUS July 2021
Comparison in prediction performance between volumetric-based vs surface-based fMRI Singapore

PATENT

Detecting atrial fibrillation by deep convolutional neural networks Step 2017
China

AWARDS / HONORS (SELECTED)

President's Graduate Fellowship National University of Singapore, 2021-2025

Outstanding Students of Star Bridge of MSRA Microsoft Research Asia (MSRA), 2020

National Scholarship Ministry of Education of the People's Republic of China, 2018

Outstanding Graduates of the Class 2013 Harbin Institute of Technology, 2017

SKILLS

Programming	Python, MATLAB, R, Shell, C#, Java, C++, C
Software	FreeSurfer, PyTorch, scikit-learn, SciPy, Github, Latex, Caffe, SQL
Languages	Proficient in Chinese and English (written and spoken)