Jianxiao Wu

Postdoctral Research Fellow

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EXPERIENCE

2023 – Present **Postdoctoral Research Fellow** — **University of Düsseldorf & Forschungszentrum Jülich**
- Multimodal brain-based behavior prediction

`Machine Learning / Neuroscience / Python / Neuroimaging preprocessing`

2018 – 2023 **Doctoral Researcher** — **University of Düsseldorf & Forschungszentrum Jülich**
- Connectivity-based behavior prediction framework for brain-behavior relationship studies
- Replicability and generalizability of connectivity-based behavior prediction

`Machine Learning / Neuroscience / Matlab / Bash / Python`

2016 – 2018 **Research Assistant** — **National University of Singapore**
- Mapping between MNI volumetric and FreeSurfer surface coordinate systems

`Neuroimaging / Matlab / Bash / Ants / FreeSurfer / FSL`

EDUCATION

2018 - 2022 **Faculty of Medicine** — **University of Düsseldorf**
Doctor of Philosophy in Medical Sciences (PhD), summa cum laude

2016 - 2018 **Department of Electrical and Computer Engineering, Faculty of Engineering** — **National University of Singapore**
Master of Engineering

2012 - 2016 **Department of Electrical and Computer Engineering, Faculty of Engineering** — **National University of Singapore**
Bachelor of Engineering (Electrical Engineering) with Honours (Disctinction)
University Scholars Programme

TEACHING

2021 **Connectivity-Based Psychometric Prediction (CBPP) Tutorial & Student Coaching** — **University of Düsseldorf**
as part of Module 3c: *Cognitive Neuroscience: Methods* in Master Study Programme Translational Neuroscience

2021 **Connectivity-Based Psychometric Prediction (CBPP) Practical** — **University of Padova**
as part of the International Winter School*MRInference: From Data to Knowledge*

GRANTS

2023-2026 **Co-I, Research Grant (EUR 315,065)** — **Deutsche Forschungsgemeinschaft**
Predicting behavior from the multimodal profile of brain regions

OPEN SCIENCE

2022 **DataLad integration with Dataverse** — **OHBM Hackathon**
https://github.com/datalad/datalad-dataverse

2020 **"mrpeek": a medical image viewer in the terminal** — **OHBM Hackathon**
https://github.com/MRtrix3/mrpeek

2019 **MNI coordinates to nifti volume conversion** — **Brainhack Padova**
https://github.com/jadecci/coord2nii

2018 **MNI152-to-surface mapping integration with Neurovault** — **OHBM Hackathon**
https://github.com/NeuroVault/NeuroVault

Personal projects:

2023 **rDCM toolbox in Python**
https://github.com/jadecci/rDCM_py

2019 – Present **<Numerical Recipes in C> Code with Examples**
https://github.com/jadecci/numerical_recipes_c

Contributed to repositories: /nipy/nipype, `/ThomasYeoLab/CBIG`, `/datalad-handbook/book`, `/statsthinking21/statsthinking21-python`, `/statsthinking21/statsthinking21-core`

PROFESSIONAL SERVICES

Reviewer for Brain Structure and Function, Human Brain Mapping, NeuroImage, Scientific Reports, SoftwareX

TALKS

2020 **OHBM 2020 Symposia** **Virtual**
A Connectivity-Based Psychometric Prediction Framework for Brain-Behavior Relationship Studies

Poster presentations:

2022 **OHBM 2022 Poster Presentation** **U.K.**
Assessing the Cross-Cohort Generalizability of Connectivity-Based Fluid Cognition Prediction Pattern

2021 **OHBM 2021 Poster Presentation** **Virtual**
Connectivity of Specific Regions Predicts Psychometric Measures Better than Whole-Brain Connectivity

2020 **OHBM 2020 Poster Presentation** **Virtual**
A Connectivity-Based Psychometric Prediction Framework for Brain-Behavior Relationship Studies

2018 **OHBM 2018 Poster Presentation** **Singapore**
Comparing Approaches for Mapping between MNI Volumetric and FreeSurfer Surface Coordinate Systems

2017 **OHBM 2017 Poster Presentation** **Canada**
Accurate Nonlinear Mapping between MNI Volumetric and FreeSurfer Surface Coordinate System

PUBLICATIONS

1. Chen, P., An, L., Wulan, N., ..., **Wu, J.**, ..., Yeo, B.T.T. 2023. Multilayer meta-matching: trnaslating phenotypic prediction models from multiple datasets to small data. *bioRxiv*.
2. **Wu, J.**, Li, J., Eickhoff, S.B., Scheinost, D., Genon, S. 2023. The challenges and prospects of brain-based prediction of behaviour. *Nature Human Behaviour*, 7(8): 1255-1264.
3. **Wu, J.**, Li, J., Eickhoff, S.B., ..., Genon, S. 2022. Cross-Cohort Replicability and Generalizability of Connectivity-Based Psychometric Patterns. *NeuroImage*, 262:119569.
4. Yeung, A.W.K., More, S., **Wu, J**., Eickhoff, S.B. 2022. Reporting Details of Neuroimaging Studies on Individual Traits Prediction: A Literature Survey. *NeuroImage*, 256:119275.
5. Liu, X., Eickhoff, S.B., Caspers, S., **Wu, J.**, ..., Patil, K.R. 2021. Functional Parcellation of Human and Macaque Striatum Reveals Human-Specific Connectivity in the Dorsal Caudate. *NeuroImage*, 235:118006.
6. **Wu, J.**, Eickhoff, S.B., Hoffstaedter, F., ..., Genon, S. 2021. A Connectivity-Based Psychometric Prediction Framework for Brain-Behavior Relationship Studies. *Cerebral Cortex*, 31(8):3732-3751.
7. **Wu, J.**, Ngo, G.H., Schaefer, A., ..., Yeo, B.T.T. 2018. Accurate Nonlinear Mapping between MNI152/Colin27 Volumetric and FreeSurfer Surface Coordinate Systems. *Human Brain Mapping*, 39(9):3793-3808.

PROFICIENCIES

Programming languages Python, Bash, C, C++

Languages Chinese (native), English (fluent)

Softwares Matlab, FreeSurfer, FSL, Ants, DataLad, MRTrix3

Additional qualifications & training:

Workshops
Brain Connectivity Workshop 2022, virtual
Get into Teaching, virtual
Multimodal neuroimaging for Mental Disorder Workshop, Singapore
NVIDIA Deep Learning Day, Singapore
Computational brain Imaging Workshop, Singapore

Courses
OHBM 2021: Brain parcellations and functional territories, virtual
OHBM 2021: Neuroanatomy and its impact on Structural and Functional Imaging, virtual
OHBM 2020: Population neuroimaging: How to responsibly handle big data in the age of biobanks, virtual
OHBM 2020: Time-varying connectivity in resting-state fMRI: Methods, interpretations and clinical use, virtual
Cousera: Medical Neuroscience (Duke University), virtual
OHBM 2018: Network Neuroscience: Concepts, Methods and Applications, Singapore
OHBM 2017: Pattern Recognition for Neuroimaging, Canada

Talks German and European Funding Landscape, virtual