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

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Machine Learning  /  Neuroscience  /  Python  /  Neuroimaging preprocessing
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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

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Machine Learning  /  Neuroscience  /  Matlab  /  Bash  /  Python
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2016 – 2018   **Research Assistant**   National University of Singapore
- Mapping between MNI volumetric and FreeSurfer surface coordinate systems

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Neuroimaging  /  Matlab  /  Bash  /  Ants  /  FreeSurfer  /  FSL
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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. DOI: 10.1038/s41562-023-01670-1

3. **Wu, J.**, Li, J., Eickhoff, S.B., …, Genon, S. 2022. Cross-Cohort Replicability and Generalizability of Connectivity-Based Psychometric Patterns. *NeuroImage*, 262:119569. DOI: 10.1016/j.neuroimage.2022.119569

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. DOI: 10.1016/j.neuroimage.2022.119275

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. DOI: 10.1016/j.neuroimage.2021.118006

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. 10.1093/cercor/bhab044

7. **Wu, J.**, Ngo, G.H., Schaefer, A., …, Yeo, B.T.T. 2018. Accurate Nonlinear Mapping between MNI152 Volumetric and FreeSurfer Surface Coordinate Systems. *Human Brain Mapping*, 39(9):3793-3808. DOI: 10.1002/hbm.24213

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