Yirong Xiong

yirong.xiong@student.uni-tuebingen.de

EDUCATION

Sun Yat-Sen University, Guangdong, China — B.A. 2014-2018

Major: Information Management and Information System

Courses: SQL, Data Visualization, Linear Algebra, Advanced Mathematics, Discrete Mathematics, Statistics for Management

Beijing Normal University, Beijing, China — M.Sc. 2018-2021

Major: Psychology

Courses: Computational Neuroscience(neuromatch academy 2021), Nerve Interface, Brain Imaging Data Modeling

Universität Tübingen, Germany — M.Sc. 2021-present

Major: Neural Information Processing

Courses: Neural Dynamics, Introduction of Computational Neuroscience, Machine Learning, Signal Processing, Neural coding, Neurophysiology, Sensory System, Functional Organization of Vertebrate CNS

SKILLS

Language: Shell script, MATLAB, Python, JavaScript (React + Node.js), Java, MySQL

Tools: FreeSurfer, FSL, Nipype, Nibabel, DAS, Tweetynet

RESEARCH EXPERIENCE

Institute for Neurobiology, Dr. Lena Veit — 2021-2022

UMAP GUI

- ✓ Designed a Web-based tool for visualizing and relabeling syllables.

Non-vocal sequential learning project

- ✓ Design & conduct behavior training on Bengalese finches.

Pitch learning model project

- ✓ Fitted context-based pitch learning data with linear/non-linear model.

Max Planck Institute For Ornithology, Dr. Daniela Vallentin — 2022

Juvenile sone detection

- ✓ Train model on DAS to label syllables and female calls.
- ✓ Design UMAP interactive tool to check annotation.

State Key Laboratory of Cognitive Neuroscience and Learning, Dr. Gaolang Gong — 2018-2021

Establish Corpus Callosum Topography Based on dMRI

- ✓ Designed and conducted a track-generating and filtering pipeline using Mrtrix3. Obtained fibers passing through the corpus callosum and connecting left and right hemispheres.
- ✓ Generated individual corpus callosum topography based on HCP S1200 Database, and established group-averaged validated topographic maps with different weighting methods.

Interactive Visualization based on Web (ccmapping.org)

- ✓ Designed a Web-based tool to provide full and interactive access to the topographic result using Three.js, WebGL, and Node.js.

Data Acquisition and Preprocessing

- ✓ Defined planum temporale manually and drew masks of relative ROIs.
- ✓ Preprocessed rfMRI and dMRI raw data to connectivity matrix.

School of Information Management, Dr. Daifeng Li — 2017-2018

Effects of Different Machine Learning Methods on ADHD classification

- ✓ Classified ADHD and control group using SVM, Logistic, CNN, RNN.

CONFERENCE

Xiong, YR., Yang, LY., Zhao, CX., Luo, JH., Wu, D., Gong, GL., A population-based online interactive atlas of human brain callosal connectivity. 2022 OHBM Annual Meeting
Xiong, YR, Talk on A population-based online interactive atlas of human brain callosal connectivity. 2022 NeNa Conference (Neurowissenschaftliche Nachwuchskonferenz)

PUBLICATION

Yang, L., Zhao, C., Xiong, Y., Zhong, S., Wu, D., Peng, S., Schotten, M. T. de, & Gong, G. (2022). Callosal fiber length scales with brain size according to functional lateralization, evolution, and development. Journal of Neuroscience. https://doi.org/10.1523/JNEUROSCI.1510-21.2022

HONORS & AWARDS

IMPRS 5-Year MSc/PhD program, 2021
The First Prize Academic Scholarship of Beijing Normal University, 2020 & 2019
Scientific Research Contributions Scholarship of Beijing Normal University, 2019
Freshman Scholarship of Beijing Normal University, 2018