XINHUI LI

512 West 112th Street, Apt 1B, New York, NY10025 | +1(646)280-6835 | xinhui.li@childmind.org

EDUCATION

University of Pennsylvania, Coursera (GPA: 4.0/4.0) M.S., Computer and Information Technology, 2021

Columbia University, New York, NY, US (GPA: 4.0/4.3) M.S., Biomedical Engineering, 2019

Xiamen University, Xiamen, FJ, CN (GPA: 3.6/4.0) B.S., Pharmaceutical Science, 2017

Utrecht University, Utrecht, UT, NL Exchange Student, Economics and Humanities, 2016

RESEARCH INTERESTS

Brain Computer Interaction, Machine Learning, Neuroimaging Software Development

PROFESSIONAL EXPERIENCE

Child Mind Institute, US **Assistant Research Engineer**, 2019-

- Developing the software Configurable Pipeline for the Analysis of Connectomes (C-PAC); built fMRIPrep-options, XCP-options, non-human primate, rodent and longitudinal pipelines in C-PAC.
- Applied connectivity-based shared response model to improve brain-behavior variance explained.
- Developed U-Net model for macaque MRI brain tissue segmentation and brain extraction.

University of Pennsylvania, Coursera **Teaching Assistant of Software System Programing**, 2020

- Held virtual office hours and recitations weekly; responded to student questions in the forum.

Hood Visual Science Lab, Columbia University, US **Machine Learning Engineer**, 2018-2019

- Designed convolutional neural networks (CNN) to identify glaucoma with wide-field optical coherence tomography (OCT) scans; applied grad-cam and attention map to explain CNN features; explored strategies to enhance the generalizability of deep learning models.
- Built MATLAB-based APIs for qualitative and quantitative measures of glaucoma progression in both early and advanced glaucoma datasets using wide-field OCT scans.

Xiaofu He Lab, New York State Psychiatric Institute, US **Research Assistant**, 2018-2019

- Developed a cascade deep learning model to classify imaginary motor movement EEG signals.
- Designed a real-time electroencephalogram (EEG) data classification feedback car-racing interface.
- Designed a motor movement and imagery task interface for EEG data recordings using PsychoPy.

Paul Sajda Lab, Columbia University, US **Research Assistant**, 2018-2019

- Collected eye tracking data in three conditions when subjects watch lecture videos with soundtrack, slides and the speaker, to assess deciding factors in online courses.
- Analyzed eye tracking data of video study using the structural equation model to illuminate the relationship between the amount of information loading and the mechanism of cognitive regulation.

Qi Wang Lab, Columbia University, US **Research Assistant**, 2017

- Recorded EEG data in three conditions when subjects use only vision, only touch, and both vision and touch to make decisions, to explore visual and haptic role in rapid decision-making.
- Preprocessed EEG data using EEGLAB to filter artifacts and select task-related components.

Xiaokun Zhang Lab, Xiamen University, CN **Researcher**, 2016-2017

- Analyzed effective compounds from a food database for modulator of an orphan nuclear receptor Nur77 that could induce apoptosis to identify ligands of Nur77.

Liangcheng Li Lab, Xiamen University, CN **Researcher**, 2014-2016

- Detected insulin secretion in IG20-lacked beta-cells using PCR and gene targeting methods to find the most effective functional area of the gene KIAA0358.

TECHNICAL SKILLS

Python, MATLAB, C/C++, Java, JavaScript, HTML, Shell, R; Git; Docker, Singularity; AWS, Google Cloud

PUBLICATIONS

Thakoor, K. A., **Li, X.,** Tsamis, E., Zemborain, Z. Z., Moraes, C. G. D., Sajda, P., & Hood, D. C. (2020). **Strategies to Improve Convolutional Neural Network Generalizability and Reference Standards for Glaucoma Detection from OCT Scans**. Translational Vision Science and Technology. (under review)

Thakoor, K. A., **Li, X.,** Tsamis, E., Sajda, P., & Hood, D. C. (2019). **Enhancing the Accuracy of Glaucoma Detection from OCT Probability Maps using Convolutional Neural Networks**. 2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2036–2040. https://doi.org/10.1109/EMBC.2019.8856899

CONFERENCE POSTERS

Li, X., Cho, J. W., Milham, M. P. & Xu, T. (2020). **Improving brain-behavior prediction using individual-specific components from connectivity-based shared response model**. Resting-State Brain Connectivity Conference 2020. (under review)

Li, X., Giavasis, S., Jin, H., Ai, L., Sólon, A., Adebimpe, A., Franco, A. R., Poldrack, R. A., Vogelstein, J. T., Xu, T., Satterthwaite, T., Craddock, R. C., & Milham, M. P. (2020). **Evaluating and Improving Cross-Pipeline Reproducibility in Functional Connectomics: A Case Study**. Organization for Human Brain Mapping 2020 Annual Meeting. [poster]

Jin, H., Giavasis, S., **Li, X.,** Sólon, A., Ai, L., Franco, A. R., Ramirez, J. S. B., Wang, X., Gozzi, A., Pagani, M., Fox, A., Messinger, A., Fair, D. A., Keilholz, S., Russ, B., Xu, T., Craddock, R. C., & Milham, M. P. (2020). **A Unified, End-to-End Pipeline Solution for Human and Nonhuman Functional Connectomics**. Organization for Human Brain Mapping 2020 Annual Meeting. [poster]

Li, X., Tsamis, E., Thakoor, K. A., Zemborain, Z. Z., Moraes, C. G. D., & Hood, D. C. (2020). **Evaluating the transferability of deep learning models that distinguish glaucomatous from non-glaucomatous OCT circumpapillary disc scans**. Investigative Ophthalmology & Visual Science, 61(7), 4548–4548. [abstract]

Feng, Y., Chung, E., **Li, X.,** Cycowicz, Y. M., & He, X. (2019). **Deep Learning for Motor Imagery Classification based on EEG Data**. New York Scientific Data Summit 2019. [poster]

Thakoor, K. A., Zheng, Q., Nan, L., **Li, X.,** Tsamis, E., Rajshekhar, R., Dwivedi, I., Drori, I., Sajda, P., & Hood, D. C. (2019). **Assessing the Ability of Convolutional Neural Networks to Detect Glaucoma from OCT Probability Maps**. Investigative Ophthalmology & Visual Science, 60(9), 1464–1464. [abstract] [poster]

Joiner, D., **Li, X.,** Eguia, M., Tsamis, E., Sun, A., Moraes, C. G. D., Ritch, R., & Hood, D. C. (2019). **Detecting progression of preserved areas of retinal nerve fiber layer in advanced glaucoma using optical coherence tomography**. Investigative Ophthalmology & Visual Science, 60(9), 5547–5547. [abstract] [poster]

Eguia, M., **Li, X.,** Joiner, D., Tsamis, E., Moraes, C. G. D., Ritch, R., & Hood, D. C. (2019). **Detecting progression on local areas of retinal nerve fiber layer in glaucoma suspects and early glaucoma using optical coherence tomography**. Investigative Ophthalmology & Visual Science, 60(9), 5594–5594. [abstract] [poster]

Sun, A., Tsamis, E., **Li, X.,** Tsang, K., Al-Aswad, L., Blumberg, D., Cioffi, G., Liebmann, J. M., Moraes, C. G. de, & Hood, D. C. (2019). **Detecting progression of early glaucoma using alternative methods with optical coherence tomography**. Investigative Ophthalmology & Visual Science, 60(9), 5545–5545. [abstract] [poster]

SCHOLARSHIPS AND MEMBERSHIPS

First Prize, CBS & EGSC HACKATHON 2019, Columbia University, US	2019
First Level Excellent Student Scholarship, Xiamen University, CN	2014, 2015, 2016
Outstanding Student Cadre, Xiamen University, CN	2014, 2015, 2016
Outstanding Graduate, Xiamen University, CN	2017
Vice President, Sunshine Psychology Volunteer Team, Xiamen University, CN	2013 – 2015