Yannan Chen

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Personal Site: https://yannan-chen.github.io/   Github: https://github.com/Yannan-Chen

EDUCATION

Columbia University   **New York, NY**

Ph.D. in Biomedical Engineering   Sep.2019-Feb.2024 (Expected)

GPA: 4.20/4.33

- 2022 AlleyCorp Math meets Bio Award
- Columbia Hackathon 2019 Top Prize
- Relevant coursework: Neurobiology, Biological Microscopy, Dynamical Systems

Columbia University   **New York, NY**

M.S. in Biomedical Engineering   Sep.2017-Dec.2018

GPA: 4.26/4.33

- EGSC Fall 2018 Professional Development Scholarship
- Relevant coursework: Neural Control Engineering, Brain Computer Interface, Machine Learning

Zhejiang University   **Zhejiang, CN**

B.Eng. in Biomedical Engineering/Chu Kochen Honors College   Sep.2013-Jun.2017

GPA: 3.67/4.00   GPA (major course): 3.83/4.00

- 2016, COMAP's Mathematical Contest in Modeling (MCM), Meritorious Winner
- 2015~2016, First-Class Scholarship for Outstanding Merits
- 2013~2014, 2014~2015, Third-Class Scholarship for Outstanding Merits
- Relevant coursework: Biomedical Signal Processing, Biomedical Imaging

PUBLICATIONS   * indicates co-first author

- Malika S. Datta*, **Yannan Chen***, Shradha Chauhan, Jing Zhang, Estanislao Daniel De La Cruz, Cheng Gong, and Raju Tomer. 2023. "Whole-Brain Mapping Reveals the Divergent Impact of Ketamine on the Dopamine System." *bioRxiv* 2023.04.12.536506; https://doi.org/10.1101/2023.04.12.536506.
- **Yannan Chen**, Cheng Gong, Shradha Chauhan, Estanislao Daniel De La Cruz, Malika S. Datta, and Raju Tomer. 2023. "Low-cost projected Light Sheet Microscopy for rapid high-resolution imaging of large biological samples." *bioRxiv* 2023.05.31.543173; https://doi.org/10.1101/2023.05.31.543173.
- Kechun Wen, **Yannan Chen**, Xin Meng, Samantha Botros, Wenting Dai, Milan N. Stojanovic, Raju Tomer, and Qiao Lin. 2023. "A Microfluidic Dual-Aptamer Sandwich Assay for Rapid and Cost-Effective Detection of Recombinant Proteins." *Microchemical Journal* 188 (May): 108454. https://doi.org/10.1016/j.microc.2023.108454.
- M. Angeles Rabadan, Estanislao Daniel De La Cruz, Sneha B. Rao, **Yannan Chen**, Cheng Gong, Gregg Crabtree, Bin Xu, et al. 2022. "An in Vitro Model of Neuronal Ensembles." *Nature Communications* 13 (1): 3340. https://doi.org/10.1038/s41467-022-31073-1.
- **Yannan Chen**, Mohammed Shaik, Kripa Patel, Carla Kim, Sam Benezra, Venkatakaushik Voleti, and Elizabeth Hillman. 2018. "Analysis of real-time 3D vascular network dynamics in the cortex during whisker stimulus using SCAPE microscopy" [Poster]. *SfN 2018*.

RESEARCH

Tools for uniform labeling, high-throughput imaging, and comparative analysis of large brain samples May.2019-Now
Tomer Lab, Columbia University
- Design of a rapid, quantitative labeling protocol for large intact cleared tissue.
- Projected Light Sheet Microscopy (pLSM) for high-resolution imaging of large biological samples.
- Whole brain unbiased, comparative analysis pipeline (suiteWB).

Neuro-Vascular Coupling Based on *In-vivo* Optical Microscopy Nov.2017-Apr.2019
Hillman Lab, Columbia University
- Utilized image processing algorithms to extract features of 3D vascular data from *in-vivo* imaging.
- Analyzed dynamic change in local blood flow accompany mice whisker stimulation.
- Explored correlations between vascular dilation and endothelial cell calcium concentration.

Mathematical Fractal Modeling on Microvascular Network Mar.2016-Jul.2017
MOE key laboratory of Biomedical Engineering, Zhejiang University
- Microvascular network model using the Fractal theory based on self-adaptation model.
- Designed a scaffold grid structure based on fractal theory for simulation of vascular trees.
- Simulated the angiogenesis process on the scaffold grid framework and evaluated the functional characteristics of the simulated vessel network.

TEACHING

- Teaching Assistant: Biophotonics; Computational Modeling of Physiological Systems; Biological Image Computing
- Guest Lecture: Biological Microscopy

CERTIFICATES

- Half Marathon, 2022 Yonkers Marathon.
- Convolutional Neural Networks by deeplearning.ai on Coursera.
- Fundamentals of Digital Image and Video Processing by Northwestern University on Coursera.
- Computer Vision and Image Analysis by Microsoft on edX.

COMMUNITY INVOLVEMENT

- Journal of Open Source Software (JOSS) reviewer
- Department of youth volunteers and summer social practice, Zhejiang University (2013-2015)
- Hongyuan volunteer teach team (2014)
  - Third prize of the national college students' social practice.

SKILLS

- Proficient: Python, Matlab, ImageJ
- Skilled: R, Julia, C, Batch
- Novice: C++, JAVA, SQL, Perl, Assembly