ZHAOYU LIU

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Johns Hopkins University

EDUCATION

The Johns Hopkins University *August 2023 - July 2025(expected)*
Masters Student, Biomedical Engineering Overall GPA: 3.90/4.0
Whiting School of Engineering, Biomedical Engineering

Chinese University of Hong Kong *September 2019 - July 2023*
Undergraduate, Bachelor of Biomedical Engineering Overall GPA: 3.72/4.0
Faculty of Engineering, Department of Biomedical Engineering First Honor

ETH Zürich (Eidgenössische Technische Hochschule Zürich) *February 2022 - September 2022*
Term Exchange
Faculty of Engineering, Department of Information Technology and Electronic Technology

Highschool Affilated to Shannxi Normal University *2016-2019*
Higher Secondary Education

RESEARCH EXPERIENCE

Johns Hopkins University Baltimore, MD, USA
Department of Chemical and Biomolecular Engineering, Prof. David H. Gracias's Lab *September 2023 - Present*

- Developing foldable microelectrode arrays for organoid research
- Conducting 3D mapping of cardiac organoids

Chinese University of Hong Kong Hong Kong, China
Department of Biomedical Engineering, Prof. Raymond Tong's Lab *September 2022 - April 2023*

- Final Year Project: Developed a Virtual Reality system for stroke rehabilitation using Unity3D and Oculus Quest 2
- Project awarded Silver Award at the 48th Geneva International Exhibition of Inventions

Chinese University of Hong Kong Hong Kong, China
Department of Psychology, Prof. Urs Maurer's Lab *September 2022 - April 2023*

- Implemented Graph Neural Network code for EEG data processing

University of Zürich Zürich, Switzerland
Clinic for Child and Adolescent Psychiatry and Psychotherapy, Prof. Silvia Brem's Lab *June 2022 - September 2022*

- Intern in Developmental Neuroimaging
- Explored EEG and fMRI data processing techniques
- Investigated correlation between dyslexia classification accuracy using Riemannian Classifier and subjects' reading abilities

Chinese University of Hong Kong Hong Kong, China
Department of Biomedical Engineering, Prof. GAO Zhaoli's Lab *September 2021 - December 2021*

· Student Helper
· Assisted in sweat sensor fabrication
· Developed MATLAB program for heart rate data collection from wearable devices

Chinese University of Hong Kong Hong Kong, China
Department of Biomedical Engineering, Prof. Raymond Tong's Lab *May 2021 - August 2021*

· Summer Research Student
· Gained expertise in EEG signal processing, deep learning, machine learning, and Riemannian-based classifiers
· Participated in a group study comparing Chinese and English language processing using EEG

Chinese University of Hong Kong Hong Kong, China
Department of Biomedical Engineering, Prof. DUAN Liting's Lab *March 2020 - March 2021*

· Student Helper
· Acquired skills in cell culture, transfection, amplification, Southern blot, Western blot, and imaging
· Gained knowledge in optogenetics

PUBLICATIONS

Jan, H.*, **Zhaoyu, L.***, Tommaso, S.*,& Pietro, P*. (2022). A Trainable Sequence that Learns and Recognizes Two-Input Sequence Patterns. *TENCON 2022*, November 2022.

Yang, Yaqi; **Liu, Zhaoyu**; Wong, Brian W.L.; Huo, Shuting; Wang, Jie; Lee, Tan; Hoeft, Fumiko; Maurer, Urs‡. Screening for Developmental Dyslexia in Hong Kong Chinese Children Using Resting- and Task-State EEG with Convolutional Neural Networks. *Under review at Journal of Child Psychology and Psychiatry.*

Liu, Zhaoyu; Chen, Jingxun; Xu, Mingkun; Gracias, David H.; Yong, Ken-Tye‡; Wei, Yuanyuan‡; Ho, Ho-Pui‡. (2024). Programmable Lipid Nanoparticles for Precision Drug Delivery: A Four-Domain Model Perspective. *arXiv preprint arXiv:2408.05695.*

‡Corresponding authors

* Indicates equal contribution

PRESENTATIONS

Presenter: Zhaoyu Liu. Jan, H.*, **Zhaoyu, L.***, Tommaso, S.*, & Pietro, P*. (2022). A Trainable Sequence that Learns and Recognizes Two-Input Sequence Patterns. PowerPoint presented at *TENCON 2022*, November 2022.

Presenter: Yang, Yaqi. Yang, Yaqi; **Liu, Zhaoyu**; Wong, Brian W.L.; Huo, Shuting; Wang, Jie; Lee, Tan; Hoeft, Fumiko; Maurer, Urs. Screening for Developmental Dyslexia in Hong Kong Chinese Children Using Resting- and Task-State EEG with Convolutional Neural Networks. Poster presented at *The Association for Reading and Writing in Asia (ARWA) 8th Annual Conference*, February 29 - March 1, 2024.

* Indicates equal contribution

HONORS AND AWARDS

1. Received **Academic Excellence Scholarship for Non-local Fee-paying Students 2022/23** at the Chinese University of Hong Kong, on **June, 2023**

2. Received **Silver Award** in 48th Geneva International Exhibition of Inventions for my final year project, on **May, 2023**

3. Received **Chung Chi College Departmental Prize Biomedical Engineering** at the Chinese University of Hong Kong, on **March, 2023**

4. Received **BME Outstanding Achievement Scholarship 2021-22** at the Chinese University of Hong Kong, on **Aug, 2022**

5. Received **Yasumoto Int'l. Exchange Scholarship.(NL)** at the Chinese University of Hong Kong, on **Aug, 2021**

6.Selected as **Dean's List, 2020-2021** at the Chinese University of Hong Kong, Faculty of Engineering, on **July, 2021**

7. Received **Class of 1977 Fortieth Graduation Anniversary Scholarship** at the Chinese University of Hong Kong, Chung Chi College, on **April, 2021**

8. Received **Chung Chi College Class Scholarship** at the Chinese University of Hong Kong, Chung Chi College, on **Oct, 2020**

9. Selected as **Dean's List, 2020-2021** at the Chinese University of Hong Kong, Faculty of Engineering, on **Jan, 2020**

RELEVANT COURSES

1. At CUHK
Separately in the transcript.
2. At ETH Zürich
Neural Systems
Neuromorphic Engineering
Semiconductors
Optics and Photonics
3. Others
Machine learning by Andrew Ng
Deeplearning by Andrew Ng
Probability and Statistics
Python Programming

SKILLS

Programming skills:
Python, C, Matlab, HTML and JavaScript, LaTex, Unity (C#)

Electrical Engineering:
Cadence Virtuoso
Micro-fabrication and Photo-lithography

Biomedical Engineering skills:
EEG and fMRI signal processing
Biology knowledge exposure (Physiology, Ethology, etc.)
Deeplearning and Principle of statistics
Cell Culture and related techniques

Extracurricular:
Public Speaking, Swimming, Table Tennis.

Languages:
Chinese (Native), English (C1, IELTS: 7.5).

MISCELLANEOUS

I love traveling, trekking, hiking, singing, playing sports, playing video games, and thinking about psychology-related phenomena.
Past President of Chung Chi College Toastmasters Club

last updated on 2024, August 12th