Yu Duan

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Education

Sep 2023 – **Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology**
- Ph.D. Program in Electrical Engineering and Computer Science

Sep 2019 – Jun 2023 **Institute for Interdisciplinary Information Sciences, Tsinghua University**
- B.Eng. in Computer Science and Technology
- GPA 3.89/4.0, last two year GPA 4.0/4.0

Feb 2022 – Jul 2022 **Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology**
- Visiting Student

Research Experiences

Feb 2022 – Ongoing **Human-like Capacity Limitation in Multi-system Models of Working Memory**
- Advised by Prof. Robert Yang at the MIT Department of Brain and Cognitive Sciences (BCS)

March 2023 – June 2023 **Predicting fMRI Response of Human Visual System with Pre-trained Visual-Textual Neural Networks**
- Advised by Prof. Pei Sun at Department of Psychology, Tsinghua University

Jun 2022 – Sep 2022 **Hebbian and Gradient-based Plasticity Enables Robust Memory and Rapid Learning in RNNs**
- Advised by Prof. Kaisheng Ma at Institute for Interdisciplinary Information Sciences (IIIS), Tsinghua University
- Co-advised by Prof. Yi Zhong at IDG/McGovern Institute and School of Life Sciences, Tsinghua University

Mar 2021 – Jan 2022 **Modeling the Fly Olfactory System with Plastic and Compartmentalized RNNs**
- Advised by Prof. Kaisheng Ma and Prof. Yi Zhong

Publication

2023 **Hebbian and Gradient-based Plasticity Enables Robust Memory and Rapid Learning in RNNs**
- **Yu Duan**, Zhongfan Jia, Qian Li, Yi Zhong, Kaisheng Ma
- Eleventh International Conference on Learning Representations (ICLR 2023)

2023 **Natural constraints explain working memory capacity limitations in sensory-cognitive models**
- Yudi Xie*, **Yu Duan***, Aohua Cheng, Pengcen Jiang, Christopher Cueva, Guangyu Robert Yang (*equal contribution)
- Computational and Systems Neuroscience (COSYNE 2023)
- Conference on Cognitive Computational Neuroscience (CCN 2022)

Honors

2022 | **Scholarship for Scientific Innovation, Tsinghua University**

2021 | **Scholarship for Academic Excellence, Tsinghua University**

2019 | **Freshman Scholarship, Tsinghua University**

2017 | **Gold Medal, National Olympiad in Informatics, China**