

SHAoyi LIU

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Education

Carnegie Mellon University, Pittsburgh, PA 2025 — 2027

M.S. in Biomedical Engineering

University of Pittsburgh, Pittsburgh, PA 2021 — 2025

B.S. in Neuroscience, *summa cum laude*

Minors: Bioengineering, Chemistry

Research Experience: University of Pittsburgh

Sensory Motor Integration Lab and Engineering 2024 — 2025

- Analyzed neurophysiological data for non-human primate brain computer interface (BCI) - reaching experiment, using dimensionality reduction, linear regression, and statistical inference
- Helped setting up intramuscular electromyography (EMG) system to record muscle activity
- Investigated the relationship between neuronal and muscle activity during BCI learning in non-human primate

Sensorimotor Learning Lab 2022 — 2024

- Assisted and monitored motor and cognitive experiments involving human subjects
- Processed and analyzed (lower limb) kinematics (i.e., gait) as well as neuropsychological data
- Explored relationship between age-induced motor and cognitive perseveration in a group of older adults

Awards: University of Pittsburgh

Brackenridge (Research) Fellowship Frederick Honor College, 2024

FHC Research Fellowship Frederick Honor College, 2023

First Price of Koloc Award in English Composition Department of English, 2022

Dean's List, Dietrich School of Arts and Science Fall 2021 — Fall 2025

Publication & Presentation

Liu, S., Liu, S., and Torres-Oviedo, G. "Cognitive Perseveration Is Not Associated with a Reduction in Motor Perseveration in Older Adults." *INGENIUM*, 2024, pp. 61–65

2024 Frederick Honor College Research Symposium 2024

- Present my research "Cognitive Perseveration Is Not Associated with Training-Induced Improvements in Motor Perseveration in Older Adults" as an undergraduate presenter at the University of Pittsburgh

Skills

- **Programming & Software:** MATLAB, Python, and C++; Adobe Illustrator and Microsoft Excel
- **Data Processing:** Dimensionality Reduction, signal filtering, neural spike sorting, imaging denoising
- **Others:** Team communication & collaboration, scientific and interdisciplinary communication, ethics of conducting human-involved and animal-involved research