

I am a second year Clinical & Developmental Psychology PhD student that combines neuroscience, psychology, data science and statistical approaches to study the impacts of early life adversity (ELA) on brain development, neurocognition, and resilience.

EDUCATION

University of Pittsburgh

Ph.D., Clinical & Developmental Psychology
Minor in Quantitative Methodology
Graduate Advisor: Jamie Hanson, Ph.D.

2023 - Present
Pittsburgh, PA

Rice University

B.A. Cognitive Science, concentration in
Neuroscience
B.A. Visual and Dramatic Arts, concentration in
Theatre

2015 - 2019
Houston, TX
Cumulative GPA: 3.80 / 4.0
Cognitive Science GPA: 3.97 / 4.0

PUBLICATIONS

PEER-REVIEWED JOURNAL ARTICLES

1. Hanson, J. L., Kahhalé, I., & Sen, S. (2024). Integrating data science and neuroscience in developmental psychopathology: Formative examples and future directions. *Development and Psychopathology*, 1-8.
2. Zur, N., Liu, Y., Sen, S., Khalsa, N. N., Culham, J., & Striem-Amit, E. (2023). Abstract representations of grasping action parameters in the dorsal stream. *Journal of Vision*, 23(9), 5937-5937.
3. Addiego, F. M., Liu, Y., O'Brien, C., Sen, S., Khalsa, N. N., Riesenhuber, M., ... & Striem-Amit, E. (2023). The visual dorsal stream processes tool-use actions regardless of body part even in people born without hands. *Journal of Vision*, 23(9), 5497-5497.
4. Sen, S., Khalsa, N. N., Tong, N., Ovadia-Caro, S., Wang, X., Bi, Y., & Striem-Amit, E. (2022). The role of visual experience in individual differences of brain connectivity. *Journal of Neuroscience*, 42(25), 5070-5084.
5. Striem-Amit, E., Sen, S., Tong, N., Wang, X., Gandhi, T., Mahajan, V., ... & Sinha, P. (2022). Individual differences of brain plasticity in early visual deprivation and sight restoration. *Journal of Vision*, 22(14), 3483-3483.
6. Liu, Y., Caracoglia, J., Sen, S., Freud, E., & Striem-Amit, E. (2022). Are reaching and grasping effector-independent? Similarities and differences in reaching and grasping kinematics between the hand and foot. *Experimental Brain Research*, 240(6), 1833-1848.
7. Liu, Y., Caracoglia, J., Sen, S., Freud, E., & Striem-Amit, E. (2020). Similar kinematics of grasping behavior across the hand and foot. *Journal of Vision*, 20(11), 1351-1351.

MANUSCRIPTS IN PREPARATION

1. Sen, S., Gard., A.M. (in preparation, writing). Testing the structural invariance of the bifactor model of psychopathology and its association with language across childhood. Manuscript in preparation.

2. Martinez-Addiego, F. *, Liu, Y. *, Moon, K., Shytle, E., Amaral, L., O'Brien, C., **Sen, S.**, Riesenhuber, M., Culham, J.C., Striem-Amit, E. (*submitted*). Tool-use brain regions are independent of the acting body part and motor experience.

PRESENTATIONS

POSTERS

1. **Sen, S.**, Gard., A.M. (2022, November 9-11) Testing the structural invariance of the bifactor model of psychopathology and its association with language across childhood [Conference poster]. Annual Meeting of the International Society for Developmental Psychobiology, San Diego, CA, United States.
2. Liu, Y., Caracoglia, J., **Sen, S.**, Freud, E., Striem-Amit, E. (2020, June 19-24). Similar kinematics of grasping behavior across the hand and the foot [Conference poster]. Vision Sciences Society. Online.
3. **Sen, S.**, Rahman, S., Yau, J. (2019, March 20-25). Bimanual perceptual interactions in the frequency domain differ for flutter and vibration cues [Conference poster]. Cognitive Neuroscience Society, San Francisco, CA, United States.
4. **Sen, S.** (2019, April). Bimanual perceptual interactions in the frequency domain differ for flutter and vibration cues [Symposium poster]. Rice Undergraduate Research Symposium, Houston, Texas, United States.
5. **Sen, S.**, Asson, S., Chen, F. (2017, April). The Power of Underwear [Symposium poster]. Rice Undergraduate Research Symposium, Houston, Texas, United States.

TALKS

Sen, S., Caracoglia, J. (2020, January 24). Action representation for reaching/grasping is similar across the hand and foot [Conference presentation]. Capital Area Cognition, Action, and Perception, Washington, DC, United States.

RESEARCH EXPERIENCE

Data Manager - Growth and Resilience across Development Lab

University of Maryland, Department of Psychology, PI: Dr. Arianna Gard

2021 - 2023
College Park,
MD

- Scripted, organized, and executed MATLAB pipelines to filter and clean Adolescent Brain Cognitive Development (ABCD) imaging data based on factors like coverage score, motion censoring, and task-related performance
- Scripted codes and analyzed public data to identify neighborhoods in DC with high Black non-Hispanic populations and low household income, managed a team of undergrads to conduct observational data collection within the neighborhoods, created demographic maps in ArcGIS, generated surveys in ArcGIS and Qualtrics, and led workshops for a youth participatory action research project for the Community and Resilient Environments (CARE) study
- Executed admin tasks, mentored undergraduate students, organized and engaged in outreach events, maintained github and website, and set up data protocols for lab

Lab Manager - Sensory and Motor Plasticity Lab

Georgetown University Medical Center, Department of Neuroscience,

PI: Dr. Ella Striem-Amit

2019 - 2021
Washington, D.C.

- Scripted / executed codes and analyzed data on project investigating the resting state functional connectivity profiles in the blind versus the sighted
- Recruited / managed subjects, conducted experiments, and analyzed data on project examining action representation for hand vs feet effectors in control vs dysplastic subjects
- Executed all lab admin tasks and set up foundational protocols for lab

Undergraduate Research Assistant - Yau Lab

Baylor College of Medicine, Department of Neuroscience,

PI: Dr. Jeffrey Yau

2017- 2019
Houston, Texas

- Conducted a personal project studying human tactile sense perception of flutter frequencies on a target hand, as modulated by the spatial distance of distractor hand
- Scripted MATLAB codes for data collection, recruited, scheduled, and tested all participants, analyzed data in MATLAB, and presented results at Cognitive Neuroscience Society

Leadership Rice Mentorship Experience, UTHealth Public Health**Undergraduate Research Intern, PI: Dr. Kayo Fujimoto**2017
Houston, Texas

- Recruited subjects and conducted phone surveys for project studying the population of men who have sex with men (MSM) in Houston and examined the network data on the places, spaces, and people they frequent and interact with

Rice's Center for Civic Leadership, Fall Project**Houston Action Research Team, Undies for Everyone (UFE)**2016
Houston, Texas

- Consulted to optimize the efficiency of a local non-profit UFE that distributes free underwear to underprivileged school children
- Presented recommendations to UFE in the form of a research report and oral presentation via data results from a Qualtrics survey created and administered to nurses across Title 1 schools in the HISD school district

Rice University, Department of Industrial and Organizational Psychology,**Undergraduate Research Assistant, PI: Dr. Mikki Hebl**2015
Houston, Texas

- Conducted meta-analysis by reviewing studies investigating the effectiveness of diversity training in workplace settings
- Collected field data for a project studying peoples' willingness to offer help based on another's perceived race and appearance

TEACHING AND MENTORING

Hot Metal Bridge Post-Baccalaureate Fellowship Program Mentor

2024-2025

- Providing one-on-one mentoring to underrepresented students in academia in order to bridge the gap between an undergraduate degree and graduate training

GARD Lab Undergrad Mentoring and Teaching

2021- 2023

- Project manager for observational data collection team of CARE project that involves 3 research assistants
- Youth participatory action research mentor for 6 adolescents collecting data on how neighborhoods affect well-being
- Mentored research assistants on lab website, blog posts, coding for experiments, and data cleaning procedures for longitudinal datasets

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| Course Instructor of Self-Created Course, COLL 185: The Crossroads between Cognitive Neuroscience and Theatre | 2018 - 2019 |
| <ul style="list-style-type: none"> - Underwent rigorous application process to be granted opportunity to teach a 1 credit self-created course to fellow Rice students in Spring 2019 | |
| Teaching Assistant, PSYC 203: Cognitive Psychology, Fall 2018 and Spring 2019 | 2018 - 2019 |
| America Reads Math and Science Tutor | 2018 - 2019 |
| <ul style="list-style-type: none"> - Tutored elementary school students in Math and Science at local Houston America Reads center | |
| Tapia STEM Camp Counselor | 2018 |
| <ul style="list-style-type: none"> - Counselor for group of 8th - 12th graders at camp focused on STEM accessibility for underrepresented students | |
| Academic Fellows and Mentors Society | 2017- 2019 |
| <ul style="list-style-type: none"> - Selected based on academic performance to tutor fellow students enrolled in Intro Linguistics, Intro Psychology, and Cognitive Psychology | |
| Rice Peer Academic Advisor | 2017 - 2019 |
| <ul style="list-style-type: none"> - Selected to advise a group of 8 students on academic planning, organization, and activities throughout the school year | |

DATA SCIENCE / STATISTICS TRAINING

WORKSHOPS

Group Iterative Multiple Model Estimation, Statistics, Methods, and Research Training Workshop, June 2024
Dr. Kathleen M. Gates

Introduction to Machine Learning in R, Statistics, Methods, and Research Training Workshop, May 2024
Dr. Shirley B. Wang, Dr. Jeffrey M. Girard

Group Iterative Multiple Model Estimation, APA Workshop, Spring 2023
Dr. Kathleen M. Gates

Introduction to Structural Equation Modeling Workshop, CenterStat, Spring 2022
Dr. Daniel J. Bauer, Dr. Patrick J. Curran

GRADUATE COURSEWORK

Advanced Statistics II, Spring 2024

Advanced Statistics I, Fall 2023

EXTERNAL COURSEWORK

INNS 541, MATLAB for Neuroscientists, Georgetown University, Spring 2020

VOLUNTEERING

Homeless Children's Education Fund Volunteer

2024 - Present
Pittsburgh, PA

- Volunteer with local organization by teaching children housed in community shelters around Pittsburgh

Psychin Out Student Mentor

2023 - Present

- Help prospective students mock interview for Clinical Psychology graduate application process
- Volunteer to meet with students interested in applying to Clinical Psychology programs

Street Outreach Volunteer

2021- 2023
Washington, DC

StandUp for Kids

- Volunteer with local organization on a weekly basis to serve unaccompanied homeless and at risk youth

Rice Alternative Spring Break Participant - Homelessness and Incarceration

2017
Houston, TX

Rice University

- Studied the homelessness and incarceration cycle for a semester via weekly meetings and readings for a service trip to NYC
- Engaged in conversations with community non-profits as well as formerly incarcerated populations

SKILLS

Computer:

Advanced: Qualtrics, Microsoft Office programs

Intermediate: MATLAB, R, JASP, Brain Voyager, Optitrack, Wordpress, Adobe suite

Basic: ArcGIS, Unix/Linux, Python, SPSS, Git / Github

Laboratory:

- Neuroimaging data collection and analysis
- Longitudinal data cleaning and analysis
- Designing surveys and questionnaires
- Motion tracking
- Psychophysical testing
- Human participant recruitment and testing
- IRB protocol
- Community engagement and science outreach

Data Analysis:

- OLS Regression
- Regularized Regression
- Structural Equation Modeling
- Principal Components Analysis
- Hierarchical Clustering
- Random Forests
- Support Vector Machine
- Group Iterative Multiple Model Estimation

Language:

- Native in Bengali
- Intermediate in German

HONORS AND AWARDS

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| E.B. Huey Research Grant, University of Pittsburgh (\$600) | 2024 |
| Graduate Research Fellowships Program Honorable Mention, National Science Foundation | 2024 |
| Arts and Sciences Fellowship, University of Pittsburgh (\$25,000) | 2023 |
| Graduate School Application Scholarship, American Academy of Clinical Neuropsychology (\$500) | 2022 |
| President's Honor Roll, Rice University | 2017 - 2019 |
| Best Poster in the Natural Sciences Division, Rice University Undergraduate Research Symposium | 2019 |
| Rice Undergraduate Scholars Program, Rice University (\$2000) | 2018 - 2019 |
| Barbara Chilton Long Memorial Award in Theatre, Rice University (\$500) | 2018 |
| International Baccalaureate Diploma Recipient | 2015 |

PROFESSIONAL MEMBERSHIPS

1. American Psychological Association
2. American Psychological Society
3. International Society for Developmental Psychobiology

PERSONAL FACTORS OF IMPORTANCE

1. Open science
2. Involving underrepresented populations in neurobiological/ psychological research
3. Challenging the deficit model within psychology research
4. Building community trust in science