

Holly Huey

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[linkedin](#) | [google scholar](#)

I am a research scientist investigating visual abstraction & design. I use **quantitative** and **qualitative** methods to examine **how people use visualizations to create, communicate, and collaborate with each other**. Leveraging my background in **experimental cognitive psychology** and **data science**, my work aims to better inform the development of human-centered visualization technologies and products.

Experience

Graduate Research Scientist | University of California San Diego

Sept 2019 – expected graduation June 2024, San Diego, CA

- Lead end-to-end research of 20+ custom coded online experiments, leveraging large-scale crowdsourcing (mTurk, Prolific, SONA), computer vision, and machine learning techniques to quantitatively measure human behavior in visual content creation
- Perform statistical analyses (mixed-effects models, multilevel regression, GLM, ANOVA) and generate data visualizations (ggplot, seaborn) for talks & publications
- Collaborate with cross-functional teams spanning multiple universities to investigate object recognition & abstraction across large-scale datasets
- Teach undergrad classes of 300+ students covering statistics (using R), cognitive psychology, and child development
- Communicated findings to scientific and lay audiences through 8 peer-reviewed publications, 4 posters, and 10+ invited domestic & international talks (e.g., Stanford, NYU, UC Berkeley, & Naval Research Lab)

Lead Researcher & Lab Manager | New York University

July 2017 – Aug 2019, New York City, NY

- Led research and designed 3D animations for 12+ in-person/online studies investigating navigation, object recognition, and symbolic reasoning tasks with infants, children, and adults
- Mentored 8 honors thesis & grant-sponsored students, trained teams of 10-15 researchers per semester, and facilitated research collaborations with NYC museums and schools
- Launched biweekly workshop series to increase computational literacy and research design skills among undergrad researchers by teaching Adobe CC and experimental & statistical programs (R, Blender, PsychoPy)

Research Assistant | MIT & Harvard

Oct 2016 – June 2017, Boston, MA

- Designed 3D animations and conducted 3 visuoperceptual experiments using multiple eye-tracking paradigms to probe reasoning about physical events
- Conducted 7 pro-social behavior studies to investigate children's causal inferences about other agents' knowledge, behavior, and competence

Product Content Writer | Talla, AI chatbot startup

Oct 2016 – May 2017, Boston, MA

- Analyzed behavioral data on user responses and product performance, wrote 20+ workflow templates, e-books, and articles about the advantages and risks of introducing AI automation
- Performed comparative analyses & presented findings to stakeholders

Platform Intern | Pillar, Venture Capital Firm (specialized in AI startups)

Oct 2016 – May 2017, Boston, MA

- Analyzed investment value of 100+ startup companies (focused on NLP, IoT, autonomous vehicles, AI healthcare)

Education

University of California San Diego

Ph.D., Experimental Psychology | June 2024

M.A., Experimental Psychology | Feb 2022

St. John's College — Annapolis, MD

B.A., Liberal Arts | May 2016

Dual major: History of Math & Sciences, Philosophy

Dual minor: Comparative Literature, Classics

Skills

Research Methods

- mixed-methods • A/B testing • human factors
- wire framing • heuristic evaluation • gamification
- cross-cultural & developmental evaluations
- benchmarking • survey design • literature review

Experimental Programming & Software

- javascript • HTML • CSS • jsPsych • node.js • unix
- github • latex • matlab • mongoDB • AWS

Statistical Programming & Analysis

- R (tidyverse) • Python (pandas, numpy)
- model fitting • model comparisons
- hypothesis testing • population comparison
- time series analysis

Design Skills

- Adobe CC • Blender 3D modeling & animation
- Unity • video & audio editing • sketching

Communication

- quantitative data visualization • scientific writing
- research talks • workshop creation & organization

Selected Publications ^{*shared authorship}

Visual Abstraction & Communication

Huey, Lu, Walker, & Fan. (under review). Explanatory drawings prioritize functional properties at the expense of visual fidelity. [link](#)

Huey*, Yang*, & Fan. (in prep). Visual communication of object concepts at different levels of abstraction.

Semantic Structures in Visualizations

Huey*, Long*, Yang, George, & Fan. (2022). Developmental changes in the semantic part structure of drawn objects. *In CogSci*. [link](#)

Pragmatics in Communication & Behavior

Aboody, **Huey**, & Jara-Ettinger. (2022). Preschoolers decide who is knowledgeable, who to inform, and who to trust via a causal understanding of how knowledge relates to action. *Cognition*. [link](#)

Jara-Ettinger, Floyd, **Huey**, Tenenbaum, & Schulz. (2020). Social pragmatics: Preschoolers rely on commonsense psychology to resolve referential underspecification. *Child Dev*. [link](#)