Holly Huey

hollyhuey.github.io | 360.544.2499 | hhuey@ucsd.edu
linkedin | google scholar

I am a research scientist investigating visual abstraction & design. I use **quantative** and **qualitative** methods to **understand how people communicate through visualizations**. I leverage my background in **experimental cognitive psychology** and **data science** to examine the diverse visualization strategies that people use to create and commuciate via visualizations (e.g., diagrams, data visualizations) to convey high-level knowledge to viewers. My work aims to better inform the development of human-centered visualization technologies and products.

Experience

Research Scientist | University of California San Diego

Sept 2019 – present, 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 unversities to investigate object recognition & abstraction across large-scale datasets
- Communicated findings to scientific and lay audiences through 5 peer-reviewed publications, posters, and 10+ invited talks (including Stanford, NYU, UC Berkeley, & Naval Research Lab)
- Teach undergrad classes of 300+ students covering statistics (using R), cognitive psychology, and child development

Research Scientist & 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, and trained teams of 10-15 researchers per semester
- 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 visuoperceptual experiments using multiple eye-tracking paradigms to probe reasoning about physical events
- Conducted pro-social behavior studies to investigate people's causal inferences about mental states 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
- Perfomed 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 in math & sciences, Philosophy
dual minor: Comparative literature, Classics

Skills

Research Methods
• mixed-methods • A/B testing • human factors
• wire framing • heuristic evaluation • gamification
• developmental methods • cultural considerations
• benchmarking • survey design • literature review

Experimental Programming & Software
• javascript • HTML • CSS • jsPsych • node.js • unix
• github • latex • matlab • mongoDB • AWS

Statistical Progamming & 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
• quantative data visualization • scientific writing
• research talks • workshop creation & organization

Selected Projects

Visual Communication Tradeoffs:
Conveying Object Identity vs. Object Function

- Spearheaded design, testing, & analysis of studies investigating how people priortize visual information depends on their communicative goals
- Crowdsourced text annotations & used computer vision techniques to quantify the visuospatial content

Semantic Structures in Visualizations

- Designed multiple annotation studies to analyze large-scale cross-cultural and developmental datasets to examine conceptual development about objects

Data Visualization Strategies across Varying Statistical Experience

- Analyze how novice and expert designers generate data visualizations and how their representational choices impact viewer interpretation & learning