Holly Huey

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Applied Research Scientist. I specialize in **large-scale human crowdsourcing for GenAI image & video model evaluation**. My research statistically compares human vs. model behaviors to improve human-centered techologies & computational algorithms related to: *text-to-visual systems, visual design, object identification, semantic segmentation, user intentions*

Experience

Graduate Research Scientist | UC San Diego
Sept 2019 – present, San Diego, CA

- Lead end-to-end research of 20+ custom coded online experiments using large-scale crowdsourcing (e.g., >90K human & GenAI sketches via mTurk, Prolific, SONA) & computer vision techniques to evaluate visual content creation
- Perform statistical analyses (mixed-effects models, multilevel regression, GLM, ANOVA) and generate data visualizations (ggplot, seaborn)
- Collaborate with cross-functional teams spanning multiple universities to investigate object recognition & abstraction across large-scale datasets
- Teach undergrad classes of 300+ students covering UXR, stats, cognitive psychology, and child development
- Published 12 peer-reviewed conference & journal publications and presented 7 posters, and 10 domestic/international talks
- Visiting Researcher at Stanford University (Jan - March 2024)

Research Scientist/Engineer Intern | Adobe
May 2024 – present, New York City, NY

- Lead qualitative user study investigating video editing styles by interviewing video content creators, video editors, and video directors
- Develop system parameters for video editing style transfer models

March – May 2024, remote

- Led design & analysis of 3 online studies evaluating accuracy of GenAI text-to-image models (N>2.5K images) related to text prompt coherence (results helped exec teams choose which model to publically launch)

June – Dec 2023, San Francisco, CA

- Led qualitative user study evaluating YouTube creators' video production workflows & used insights to develop an online text-task to crowdsource (N>800 participants) how user intentions impact image preferences
- Performed comparative analysis of human video creators' text-to-image preferences against heuristic models & LLMs

Lead Researcher & Lab Manager | NYU
July 2017 – Aug 2019, New York City, NY

- Led research and designed 3D animations for 12+ studies investigating navigation, object recognition, & symbolic reasoning in children & adults
- Mentored 8 honors thesis & grant-sponsored students & trained teams of 10-15 researchers. (Taught interdepartmental workshop series to increase undergrad computational literacy & research design skills by teaching Adobe CC, Blender, and R)

Research Assistant | Harvard & MIT
Oct 2016 – June 2017, Boston, MA

- Conducted 3 eye-tracking studies investigating collision event inferences
- Conducted 7 pro-social behavior studies investigating children's inferences about others' mental models & behavior

UX Writer & Product Content Writer (Contractor) | Talla, AI chatbot
Oct 2016 – May 2017, Boston, MA

- Analyzed user responses to evaluate chatbot performance, conducted comparative analysis of competitors, and wrote 20+ work templates & 5+ online articles about the advantages/risks of AI automation

Education

UC San Diego
Ph.D., Experimental Psychology | Aug 2024
M.A., Experimental Psychology | Feb 2022

St. John's College
B.A., Liberal Arts | May 2016
Dual major: History of Math & Sciences, Philosophy
Dual minor: Comparative Literature, Classics

Skills

Quantitative & Qualitative Methods
• behavioral benchmarking • human factors
• A/B testing • heuristic evaluation • prototyping
• survey design • 1:1 user interviews • gamification
• cross-cultural & developmental evaluations

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 & comparisons • time series analysis
• hypothesis testing • population comparison

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

Communication
• data visualization • scientific writing/social media
• research talks • workshop creation & organization

Selected Publications *shared authorship

Semantic Structure in Sketches
Mukherjee*, **Huey***, Lu*, Vinker, Aguina-Kang, Shamir, & Fan. (2023). SEVA: Leveraging sketches to evaluate alignment between human and machine visual abstraction. *NeurIPS Datasets & Benchmarks*. link

Huey, Lu, Walker, & Fan. (2022). Explanatory drawings prioritize functional properties at the expense of visual fidelity. *Cognition*. link

Long, Fan, **Huey**, Chai, & Frank. (2024). Parallel developmental changes in children's production and recognition of line drawings of visual concepts. *Nature Communications*. link

Data Visualization Design
Huey*, Oey*, Lloyd, & Fan. (2023). How do communicative goals guide which data visualizations people think are effective? *CogSci*. link

Video Production & Editing
Huey, Leake, Aneja, Fisher & Fan. (2024). How do video content creation goals impact which concepts people prioritize for generating B-roll imagery? *Creativity & Cognition*. link