Holly Huey

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Building tools to enhance human creativity. I specialize in large-scale human crowdsourcing for GenAI image & video model evaluations. My research statistically compares human vs. model behavior to improve creative technologies related to: *text-to-visual & visual-to-visual systems, semantic editing, object recognition, user intentions*

Experience

Applied Scientist | Adobe
Jan 2025 – present, San Francisco, CA

- Evaluate GenAI image & video systems by developing large-scale benchmarks to statistically measure model improvements & regressions
- Develop custom experiments for Firefly, Photoshop, Illustrator, and Adobe Research teams to fine-tune models for market & enterprise client needs
- Build teams of professional photographers & editors, graphic designers, and video creators/editors to design custom assets and critique models
- Collaborate closely with AI Ethics team to block harmful model outputs

Graduate Research Scientist | UC San Diego
Sept 2019 – Aug 2024, San Diego, CA

- Led 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
- Performed statistical analyses (mixed-effects models, GLM, ANOVA) & generated data visualizations (ggplot, seaborn) for publications & talks
- Collaborated with cross-functional teams spanning multiple universities to investigate object recognition & abstraction across large-scale datasets
- Taught UG classes of 300+ students covering UXR, stats, cognitive psychology, and child development
- Visiting Reseacher at Stanford (Jan – March 2024)

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

- Led user research developing system parameters for video editing style transfer LLM models by interviewing video creators, editors & directors

March – Aug 2024, remote

- Evaluated suite of text-to-image models on fine-grain prompt coherence related to understanding of e.g., number, physics, & spatial reasoning

June – Dec 2023, San Francisco, CA

- Led user research evaluating how video creators' different workflows and goals impact their text-to-image preferences, relative to LLM predictions

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 (Created interdepartmental workshop series aimed at increasing UG computational literacy & research skills by teaching R, PsychoPy, Adobe CC, Blender)

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

- Conducted 3 eye-tracking studies investigating collision event inferences
- Conducted 7 pro-social studies investigating children's inferences about other agents' mental models from agent behaviors

Education

UC San Diego | 2019-2024
PhD in Experimental Psychology
MA in Experimental Psychology

St. John's College | 2012-2016
BA in Liberal Arts
Dual major: History of Math & Sciences, Philosophy
Dual minor: Comparative Literature, Classics

Skills

Research Methods
• behavioral benchmarking • A/B model testing
• 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) • Cursor
• model fitting & comparisons • time series analysis
• hypothesis testing • population comparison

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

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

Selected Publications *shared authorship

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

Mukherjee*, **Huey***, 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

Data Visualization Design
Brockbank, Verma, Lloyd, **Huey**, Padilla, & Fan. (2025). *Cognitive Research: Principles & Implications.* 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