Jane Yang

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Google Scholar

Research Interests

Egocentric vision, visual representation learning, and perception and interaction in naturalistic environments

Education

Ph.D. in Experimental Psychology 2024–present
UC San Diego
Advisor: Bria Long

B.S. in Cognitive Science 2018–2022
UC San Diego
Specialized in Machine Learning & Neural Computation
Minor: Computer Science

Publications & Presentations

Peer-reviewed Conference Papers

Yang, J., Sepuri, T., Tan, A.W.M., Aw, K.L., Frank, M.C., Long, B. (2026). Characterizing the inputs to infants' object category representations. *Vision Science Society.*

Yang, J., Sepuri, T., Tan, A., Frank, M.C., Long, B. (2025). Quantifying infants' everyday experiences with objects in a large corpus of egocentric videos. *Cognitive Computational Neuroscience.* [Link]

Yang, J., Zhang, Y., Yu, C. (2024). Learning semantic knowledge based on infant real-time attention and parent in-situ speech. *Cognitive Science Society.* [Link]

Yang, J., Smith, L., Crandall, D., Yu, C. (2023). Using manual actions to create visual saliency: an outside-in solution to sustained attention and joint attention. *Cognitive Science Society.* [Link]

Wang, H., **Yang, J.**, Tamari, R., Fan, J. (2022). Communicating understanding of physical dynamics in natural language. *Cognitive Science Society.* [Link]

Preprints

Tan, A.W.M.*, **Yang, J.***, Sepuri, T., Aw, K.L., Sparks, R.Z., Yin, Z., Marchman, V.A., Frank, M.C., Long, B. (2025). Assessing the alignment between infants' visual and linguistic experience using multimodal language models. [Link]

Yu, Z., Aubret, A., Raabe, M.C., **Yang, J.**, Yu, C., Triesch, J. (2025). Active Gaze Behavior Boosts Self-Supervised Object Learning. *Submitted.* [Link]

Selected Presentations

Characterizing the inputs to infants' object category representations. Talk at *Vision Science Society*. 2026

Characterizing the inputs to infants' object category representations. Talk at *Southern California Meeting for Investigations in Developmental Science*. 2026

Characterizing the inputs to infants' object category representations. Talk at *Egocentric Video Workshop at Stanford*. 2026

Quantifying infants' everyday experiences with objects in a large corpus of egocentric videos. Poster at *Cognitive Computational Neuroscience*. 2025

Quantifying infants' everyday experiences with objects in a large corpus of egocentric videos. Talk at *BabyView and 1kD Team Joint Lightning Talk*. 2025

Quantifying infants' everyday experiences with objects in a large corpus of egocentric videos. Talk at *BabyView Workshop: Understanding Infant Experience Through Egocentric Data*. 2025

Quantifying infants' everyday experiences with objects in a large corpus of egocentric videos. Poster at *Southern California Meeting for Investigations in Developmental Science*. 2025

Learning semantic knowledge based on infant real-time attention and parent in-situ speech. Talk at *46th Annual Meeting of the Cognitive Science Society*. 2024

Learning semantic knowledge based on infant real-time attention and parent in-situ speech. Talk at *2024 International Congress of Infant Studies*. 2024

Using manual actions to create visual saliency: an outside-in solution to sustained attention and joint attention. Talk at *45th Annual Meeting of the Cognitive Science Society*. 2023

Using manual actions to create visual saliency: an outside-in solution to sustained attention and joint attention. Poster at *COSMOS*. 2023

Using manual actions to create visual saliency: an outside-in solution to sustained attention and joint attention. Poster at *Workshop on Natural Environments Tasks and Intelligence*. 2023

Communicating understanding of physical dynamics in natural language. Poster at *44th Annual Meeting of the Cognitive Science Society*. 2022

Communicating understanding of physical dynamics in natural language. Talk at *UCSD 35th Annual Undergraduate Research Conference*. 2022

Research Experience

Graduate Student 2024–present

UC San Diego Visual Learning Lab *Principal Investigator: Bria Long*

- **Object Detection in Egocentric Video:** Implemented YOLOE for automated object detection in 868+ hours of infant egocentric video data from BabyView dataset (31 families)
- **Cross-Dataset Representational Analysis:** Extracted CLIP and DINOv3 embeddings from object images in BabyView vs. THINGS datasets to quantify distributional differences between infant visual experience and contemporary computer vision datasets
- **Visual-Linguistic Alignment Analysis:** Quantified visual-linguistic alignment in naturalistic infant egocentric video using CLIP model
- **Experimental Design:** Designed and conducted adult eye-tracking experiments investigating object interaction strategies based on information collection optimality

Lab Technician 2022–2024

UT Austin Developing Intelligence Lab *Principal Investigator: Chen Yu*

- **Naturalistic Data Collection:** Conducted multimodal data collection with 12-36 month infants and caregivers using head-mounted eye trackers, third-person cameras, IMUs, and lapel microphones in participants' homes
- **Multi-sensor Data Fusion:** Built Python pipelines to synchronize and process multimodal sensor streams from multiple recording devices

- **Pose Estimation:** Deployed MediaPipe and OpenPose for hand and face detection in egocentric video streams
- **Object Detection:** Fine-tuned YOLOv8 for object detection in infant/parent egocentric views
- **Speech Processing:** Integrated WhisperX for automated transcription and speaker diarization
- **Motion Tracking:** Generated skeletal motion tracking data for dyads' in-lab toy playing sessions
- **3D Modeling:** Created 3D experimental environments and stimuli using Unity, Blender, and Matterport 3D camera

Research Assistant 2021–2022
UC San Diego Cognitive Tools Lab *Principal Investigator: Judith Fan*

- **Honors Thesis:** Completed an honors thesis examining how people communicate abstract physics knowledge between individuals
- **Interactive Experiment Development:** Built web-based experiments for studying intuitive physics knowledge communication using JavaScript and Node.js
- **Natural Language Analysis:** Processed and analyzed 480+ participant responses using NLP methods and manual annotation

Research Assistant 2020–2021
UC San Diego Language and Comprehension Lab *Principal Investigator: Eva Wittenberg*

- **Psycholinguistic Experiments:** Built web-based experiments studying the effect of verbal reduplication on event conceptualization in Mandarin Chinese
- **Hardware Development:** Assisted development of a pen with pressure sensors to record participants' physiological reactions to linguistic stimuli

Teaching Experience

UC San Diego, Department of Psychology

PSYC 201B Quantitative Methods in Psychology II 2026
PSYC 201A Statistical Computing and Inference from Data I 2025
PSYC 168 Psychological Disorders of Childhood 2025
PSYC 181 Drugs and Behaviors 2025
PSYC 102 Sensory Neuroscience 2024

UT Austin, Department of Psychology

PSY 371M Introduction to Machine Learning 2023

UC San Diego, Department of Cognitive Science

COGS 189 Brain Computer Interfaces 2022
COGS 101C Language 2021

Mentorship

UC San Diego: Dora Deng, Mira Maeto 2024–present
UT Austin: Elton Martinez, Anagha Kenikar, Jacob Rivera, Ruchi Shah 2023–2024

Technical Skills

Programming:	Python, C++, C, MATLAB, R, JavaScript, Java, Clojure
Machine Learning:	PyTorch, TensorFlow, HuggingFace
Data Processing:	Multi-sensor fusion, video processing (FFMPEG)
Development Tools:	Git, MongoDB, Node.js, Unity, Blender, AutoCAD, SolidWorks
NLP:	spaCy, NLTK, Whisper
Other Software:	LaTeX, Datavyu, Audacity, ELAN, Illustrator
Languages:	English, Mandarin, Hokkien

Awards & Fellowships

National Eye Institute Early Career Scientist Travel Grant, *Vision Science Society* 2026

Anderson Travel & Research Award, *UC San Diego* 2025

Norman Henry Anderson Fellowship, *UC San Diego* 2024

Triton Research and Experiential Learning Scholars Award, *UC San Diego* 2022

Distinction in Cognitive Science, *UC San Diego* 2022

Provost's Honors, *UC San Diego* 2019–2022

HackSC 1st Place in Entrepreneurship, *USC* 2019

Last updated: February 22, 2026