

Jane Yang

San Diego, CA
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[Google Scholar](#)

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

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 DINOv2/v3 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

- **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

Publications

Peer-reviewed Conference Papers

Yang, J., Sepuri, T., Tan, A., Frank, M., 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*. [\[Link\]](#)

Technical Skills

Programming:	Python, C++, MATLAB, R, JavaScript, Java
Machine Learning:	PyTorch, TensorFlow, HuggingFace
Data Processing:	Multi-sensor fusion, video processing (FFMPEG)
Development Tools:	Git, MongoDB, Node.js, Unity, Blender, AutoCAD
NLP:	spaCy, NLTK, Whisper

Awards & Fellowships

Anderson Travel & Research Award , <i>UC San Diego</i>	2025
Norman Henry Anderson Fellowship , <i>UC San Diego</i>	2024
Triton Research and Experiential Learning Scholars Award , <i>UC San Diego</i>	2022
Distinction in Cognitive Science , <i>UC San Diego</i>	2022
Provost's Honors , <i>UC San Diego</i>	2019–2022
HackSC 1st Place , <i>USC</i>	2019

Research Interests

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