

Jenna Kang

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EDUCATION

- New York University, NY, USA** Sept 2024 - Present
PhD in Computer Science
– Interests: Computer graphics, visual perception, psychophysics, generative AI, neural rendering, visualization
– Advisor: Qi Sun
- Georgia Institute of Technology, GA, USA** Aug 2021 - May 2024
B.S. Computer Science
– Advisor: Thad Starner
– **Highest Honor**

PUBLICATIONS

A full list of my publications can be found on my [Google Scholar](#) profile.

Journal and Conference Publications

- *GeneVA: A Dataset of Human Annotations for Generative Text to Video Artifacts* WACV 2026
J. Kang, M. B. Silva, P. Sangkloy, K. Chen, N. L. Williams, Q. Sun [link](#)
- *Perceptually Guided 3DGS Streaming and Rendering for Mixed Reality* WACV 2026
Y. Zhang, S. H. Mupparaju, K. Chen, J. Kang, X. Zhang, N. Omori, K. Arimatsu, Q. Sun [to appear](#)
- *Performance Analysis of Catch-Up Eye Movements in Visual Tracking* SIGGRAPH ASIA 2025
J. Kang, B. Duinkharjav, N.L. Williams, Q. Sun [link](#)
- *Towards Improving Real-Time Head-Worn Display Caption Mediated Conversations with Speaker Feedback for Hearing Conversation Partners* CHI 2024
J. Kang, E. Layton, D. Martin, T. Starner [link](#)
- *Evaluating Visual Perception of Object Motion in Dynamic Environments* SIGGRAPH Asia 2024
B. Duinkharjav, J. Kang, G. S. P. Miller, C. Xiao, Q. Sun [link](#)
- *Stepping into AR: Exploring Optimal Positioning for Monocular Head-Worn Displays for Reading on the Go* UBICOMP/ISWC 2024
P. Mosur, E. Kimmel, P. Arora, R. Singh, A. R. Madiwale, J. Kang, T. Starner [link](#)

Workshop Papers and Posters

- *Limits of Visual Saliency Models for AI-Generated Videos* VSS 2026
J. Kang, N. L. Williams, M. B. Silva, K. Chen, P. Sankloy, Q. Sun [to appear](#)
- *Graphical Perception: Alignment of Vision-Language Models to Human Performance* VSS 2025
J. Kang, G. Guo, R.S. Shah, H. Pfister, S. Varma [link](#)
- *Understanding Graphical Perception in Data Visualization through Vision-Language Models* Neurips Workshop 2024
J. Kang, G. Guo, R.S. Shah, H. Pfister, S. Varma [link](#)

RESEARCH EXPERIENCE

- Dolby Laboratories** Sunnyvale, GA USA
PhD Research Intern (Mentors: Timo Kunkel, Jake Zuena) May 2025 - Aug 2025

- Color Perception in Mesopic and Scotopic Regions
 - Assessed and modeled color perception in the mesopic and scotopic regions for content fidelity and optimization
 - Designed and conducted a psychophysical face-flip study to identify shifts in isoluminance for varying hues and chromas at low luminance levels
 - Modeled shifts in isoluminance to apply correction on real images
 - Wrote python/MATLAB API to automate PR740 photospectrometer measurements

Immersive Computing Lab, New York University Tandon CSE

New York, NY USA

PhD Student Researcher (Advisor: Qi Sun)

Sept 2023 - Present

- **Diffusion + Transformer-Based Modeling of Human Scanpaths and Saliency-Guided Generation**
 - Developed diffusion-based models for human scanpath prediction, modeling gaze trajectories as temporally structured stochastic processes
 - Integrated transformer architectures for long-range temporal dependency modeling in sequential gaze
 - Explored autoregressive and diffusion-forcing strategies to improve temporal consistency across extended scanpath rollouts
 - Investigated saliency latent guided generation, conditioning trajectory prediction on learned visual feature embeddings
 - Studied latent space alignment between saliency representations and human behavioral dynamics for perceptually grounded generation
- **Saliency and Gaze-Based Analysis of Artifacts in Real vs. AI-Generated Videos**
 - Designed controlled real vs generated video comparisons by conditioning generative models on the first frame and text description of real videos to enable side-by-side evaluation
 - Conducted user studies measuring gaze behavior and perceptual quality ratings to analyze how attention is allocated to artifacts
 - Compared gaze patterns and saliency distributions between real and AI-generated videos to identify perceptually salient failure modes
 - Analyzed image and video statistics (e.g., motion coherence, temporal frequency changes, spatial artifacts) to characterize systematic differences in generative artifacts
- **Dichoptic Foveation**
 - Defined application of blur to one eye, and a simultaneous sharpening filter to the other
 - Conducted 2AFC and fitted a 4D perceptual model parameterized by retinal eccentricity on appropriate blur and sharpen amounts
 - Allows for about 50% decreased sampling-rate in VR for power saving on displays
- **Object Motion Tracking**
 - Studied observers' ability to track objects at varying velocities and varying visibilities (luminance, color, noise contrasts)
 - Implemented and conducted a psychophysical Unity-based study with a GazePoint eye tracker
- **Perception of Object Heading Direction in Dynamic Environments**
 - Studied and modeled perceptual accuracy of object headings in 3D environments
 - Implemented and deployed a crowdsourcing-based psychophysical study on AWS, data collected through Prolific
- **Foveated Perceptual Gaussian Splatting**
 - Created dataset and trained MLP to predict optimal level-of-detail for a scene based on the FovVideoVDP metric, parameterized based on camera position, viewing direction, and eccentricity
 - Conducted a user study on a headworn display to evaluate visual quality and rendering efficiency

Visual Computing Group, Harvard University

& Cognitive Architecture Lab, Georgia Tech

New York, NY USA

PhD Student Researcher (Advisors: Hanspeter Pfister, Sashank Varma)

May 2024 - Present

- **Visual Language Models on Graphical Perception and Visual Question Answering**

- Recreated classic graphical perception stimuli from Cleveland and McGill to evaluate vision-language model (VLM) and human performance on visualization understanding (bar charts, pie charts)
- Queried VLMs, including GPT-4 and Claude, on comparison and proportion judgment tasks, comparing against human accuracy
- Designed and implemented a Prolific web-based study to collect human responses to VLAT-style questions on modified stimuli
- Aimed to bridge insights from VLAT and graphical perception literature for evaluating perceptual alignment in VLMs

Contextual Computing Group

Undergrad Student Researcher (Advisor: **Thad Starner**)

Atlanta, GA USA

Aug 2022 - May 2024

- **Surgery and Headworn Displays**

- Prototyped medical applications of head-worn displays projecting camera output for surgical zoom with a variety of sensors

Emory School of Medicine

Undergrad Student Researcher (Advisor: **Anthony Law**)

Atlanta, GA USA

Aug 2022 - May 2024

- **Paralysis Diagnostics**

- Trained a segmentation model for vocal folds with YOLOv8/PyTorch, implemented computer vision techniques to detect paralysis in vocal folds

WORK EXPERIENCE

Dolby Laboratories

PhD Research Intern (Mentors: **Timo Kunkel, Jake Zuena**)

Sunnyvale, CA USA

May 2025 - Aug 2025

- Assessed and modeled color perception in scotopic/mesopic regions
- MATLAB, PR740 Photospectrometer, Psychopy, Dolby PRM

Amazon Robotics

Software Engineer - Internship

Westborough, MA USA

May 2024 - Aug 2024

- Created a service to validate camera parameters for Amazon computer vision package scanning/detection
- Eliminated the need for specialized software engineering support at production sites, reducing the requirement for 1,000 planned workcell stations
- Conducted production-level set-up and testing, deployed work to Amazon warehouse
- Python, Python Websockets, Docker

Amazon Robotics

Software Engineer - Internship

North Reading, MA USA

May 2023 - Aug 2023

- Created a service to list teams' packages and dependencies by scanning a dependency graph with AWS Lambda
- Provided an architecture with an improvement of 4hrs to the runtime of the AWS Step Function cron job
- Created a React UI to visualize the packages and query with inputs such as tags, prefix, team name
- AWS: CDK, Step Functions, Lambda, DynamoDB, Cloudformation, Cloudwatch, Opensearch, API Gateway, S3, IAM

Amazon Robotics

Software Engineer - Co-op

North Reading, MA USA

Jan 2022 - Aug 2022

- Led design and implementation of a common software framework for reusable workflows at Amazon warehouses
- Associate Notification Service: built the first reusable workflow component for managers to inform associates working at warehouses of any notifications (safety, alerts, etc.), integrated with internal Amazon clients/services
- Scanner Calibration Service: created an algorithm to map scanners with a given configuration to their physical device IP address at a particular workflow, integrated with a React UI to drive the calibration process
- Kotlin, Docker, Typescript, Java, React

CyberCrucible
Part-time Frontend Engineer

Remote
Dec 2021 - Feb 2023

- Built charts and grids with AGGridReact, reusable React components, encrypted secure data
- Javascript, CSS, HTML, React, ReactJS

TEACHING EXPERIENCE

Course Assistant - Virtual and Augmented Reality (CS-GY 9223) Aug 2025 - Present
New York University *New York, NY USA*

- Gave instruction on using the Unity Engine for game development, graded Unity projects

Teaching Assistant - Computing and Society (CS 3001) Aug 2023 - May 2024
Georgia Institute of Technology *Atlanta, GA USA*

- Lead weekly student discussions on the ethics of computing, grade papers and debates in computing

SKILLS

Computing Skills Java, Kotlin, AWS, MATLAB, Python, C#, R, Unity3D, git, L^AT_EX, Windows, Linux, Docker, React, Javascript, HTML, CSS

Research Areas Virtual/augmented reality, visual perception, motion perception, psychophysics, human-computer interaction, statistical modeling, computer graphics, user interfaces

AWARDS & HONORS

Georgia Tech Presidential Undergraduate Research Award May 2024
New York University SoE Fellowship Aug 2024
New York University U.S. DoE Graduate Assistance in Areas of National Need Fellowship (GAANN) Aug 2025