# Jenna Kang

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## EDUCATION

**New York University**, NY, USA — Sept 2024 - Present
*PhD in Computer Science, 4.00 GPA*
– Research interests: Computer graphics, visual perception, psychophysics, generative ai, neural rendering
– Advisor: Qi Sun

**Georgia Institute of Technology**, GA, USA — Aug 2021 - May 2024
*B.S. Computer Science, 3.94 GPA*
– Advisor: Thad Starner
– **Highest Honor**

## PUBLICATIONS

### Journal and Conference Publications

- **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

- **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

- **Graphical Perception: Alignment of Vision-Language Models to Human Performance** — *VSS 2025*
  **J. Kang**, G. Guo, R.S. Shah, H. Pfister, S. Varma — link

## WORK EXPERIENCE

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

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

**Amazon Robotics** — Westborough, MA USA
*Software Engineer - Internship* — *May 2024 - Aug 2024*

- Created a camera validation 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 in production

- Python, Python Websockets, Docker

**Amazon Robotics** North Reading, MA USA
*Software Engineer - Internship* *May 2023 - Aug 2023*

- Created a service to list a team's packages and their dependencies by scanning a dependency graph with AWS Lambda
- Hosted a web application for customers to find information on packages available to them
- 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, to an AWS API Gateway
- AWS: CDK, Step Functions, Lambda, DynamoDB, Cloudformation, Cloudwatch, Opensearch, API Gateway, S3, IAM

**Amazon Robotics** North Reading, MA USA
*Software Engineer - Co-op* *Jan 2022 - Aug 2022*

- Led design and implementation for a common software framework facilitating the creation of reusable workflow components at Amazon warehouses
- Vended components with Docker, iterated closely with customers on design structure
- 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** Remote
*Part-time Frontend Engineer* *Dec 2021 - Feb 2023*

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

## RESEARCH EXPERIENCE

**Immersive Computing Lab, New York University Tandon CSE** New York, NY USA
*PhD Student Researcher (Advisor: **Qi Sun**)* *Sept 2023 - Present*

- Object Motion Tracking
  - Studied observers' ability to track objects at varying velocities and varying visibilities (luminance, color, noise contrasts)
  - Implemented and conducted psychological Unity-based study with 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 crowdsourcing-based psychophysical study on AWS, data collected through Prolific
- Artifacts in AI Generated Videos
  - Studied artifacts in AI generated videos to understand how they impact visual quality and perceived realism of the videos
  - Implemented and deployed crowdsourcing web-based video-annotator on AWS
- Foveated Perceptual Gaussian Splatting
  - Created dataset and trained MLP to predict optimal level-of-detail for a scene based on perceptual FovVideoVDP JND metric, parameterized based on camera position, viewing direction, eccentricity
  - Conducted user study on 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*

- Graphical Perception and Visual Question Answering
  - Recreated classic graphical perception stimuli from Cleveland and McGill to evaluate model and human performance
  - Queried vision-language models (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

**Emory School of Medicine** Atlanta, GA USA
*Undergrad Student Researcher (Advisor: **Anthony Law**)* *Aug 2022 - May 2024*

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

**Contextual Computing Group** Atlanta, GA USA
*Undergrad Student Researcher (Advisor: **Thad Starner**)* *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

## 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 on ethical issues and debates in computing

## SKILLS

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|---|---|
| **Computing Skills** | Java, Kotlin, AWS, Matlab, Python, C#, R, Unity3D, git, LaTeX, 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

New York University SoE Fellowship Aug 2024
New York University U.S. DoE Graduate Assistance in Areas of National Need Fellowship (GAANN) Aug 2025