Gene S-H Kim

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Research Summary

Human-Computer Interaction researcher with a strong accessibility background demonstrated through ten publications (six full papers + four posters) and two first-author submissions at top-teer computing research conferences. Seeking to leverage an interdisciplinary mindset, technical skillset, and non-profit leadership experience to make high-impact contributions to academia. Investigating how technology can deliver multi-modal information to empower greater creativity, joy, and inclusion, particularly for disabled people in STEM.

Education

B.S.H. Symbolic Systems

Concentration: Human-Computer Interaction and Accessibility

Stanford University – Stanford, CA

Expected Graduation: June 2025

Advisor: Sean Follmer

Publications

[154 citations, H-Index 5 on Google Scholar]

In Submission:

[1] Kim, G. S-H., Oskiper, N., Follmer, S., Hofmann, M. (2025). Beyond Being Accurate: Design and Technical Implications for Using Natural Language Descriptions for Accessible 3D Modeling with Blind and Low Vision Makers. In submission to CHI 2025

[2] Kim, G. S-H.*, Teng, S-Y.*, Liu, X.*, Lopes, P. (2025). Seeing with the Hands: Adding a New Perspective to Sensory Substitution. In submission to CHI 2025

[3] Fan, D., Tomassetti, O., Mouallem, A., Kim, G. S-H., ... & Follmer, S. (2025) Promoting Comprehension and Engagement in Introductory Data and Statistics for Blind and Low-Vision Students: A Co-Design Study. In submission to CHI 2025

[4] Mouallem, A., Pons, M., Malik, A., Rogando, T., Kim, G. S-H., ... & Sheppard, S. D. IncluSim: An Accessible Educational Electronic Circuit Simulator for Blind and Low-Vision Learners. In submission to CHI 2025.

Full Papers:

[1] Zhang, Z., **Kim, G. S-H.**, & Wobbrock, J. O. (2023, October). Developing and Deploying a Real-World Solution for Accessible Slide Reading and Authoring for Blind Users. In Proceedings of the 25th International ACM SIGACCESS Conference on Computers and Accessibility (pp. 1-15).

[2] Fan, D., Fay Siu, A., Rao, H., **Kim, G. S. H.**, Vazquez, X., Greco, L., ... & Follmer, S. (2023). The accessibility of data visualizations on the web for screen reader users: Practices and experiences during covid-19. ACM Transactions on Accessible Computing, 16(1), 1-29.

[3] Hofmann, M., Auradkar, N., Birchfield, J., Cao, J., Hughes, A. G., **Kim, G. S.**, ... & Hudson, S. E. (2023, April). OPTIMISM: Enabling Collaborative Implementation of Domain Specific Metaheuristic Optimization. In Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (pp. 1-19).

[4] Siu, A., Kim, G. S-H., O'Modhrain, S., & Follmer, S. (2022, April). Supporting accessible data visualization through audio data narratives. In Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (pp. 1-19).

[Co-Presenter]

[5] Siu, A. F., Fan, D., Kim, G. S-H., Rao, H. V., Vazquez, X., O'Modhrain, S., & Follmer, S. (2021, April). COVID-19 highlights the issues facing blind and visually impaired people in accessing data on the web. In Proceedings of the 18th International Web for All Conference (pp. 1-15).

[best technical paper nominee]

[6] Siu, A. F., Chase, E. D., Kim, G. S-H., Boadi-Agyemang, A., Gonzalez, E. J., & Follmer, S. (2021).

Haptic guidance to support design education and collaboration for blind and visually impaired people. Design Thinking Research: Translation, Prototyping, and Measurement, 167-180.

Posters:

[1] Fan, D., Kim, G. S-H., Tomassetti, O., Patel, S. N., O'Modhrain, S., Lee, V. R., & Follmer, S. (2024, May). Tangible Stats: An Embodied and Multimodal Platform for Teaching Data and Statistics to Blind and Low Vision Students. In Extended Abstracts of the CHI Conference on Human Factors in Computing Systems (pp. 1-9).

[2] Kulkarni, T., Kim, G. S-H., & Mouallem, A. (2023, October). A Case for Improving the Accessibility of Electrical and Computer Engineering Education–Starting with a Blind Student's Autoethnography. In Proceedings of the 25th International ACM SIGACCESS Conference on Computers and Accessibility (pp. 1-8).

[3] Kim, G. S-H.*, Seehorn, M. E.*, Desai, A., Hofmann, M., & Mankoff, J. (2022, October). Enhancing access to high quality tangible information through machine embroidered tactile graphics. In Proceedings of the 7th Annual ACM Symposium on Computational Fabrication (pp. 1-3).

[4] Chase, E. D.*, Siu, A. F.*, Boadi-Agyemang, A.**, Kim, G. S-H**, Gonzalez, E. J., & Follmer, S. (2020, October). PantoGuide: A Haptic and Audio Guidance System To Support Tactile Graphics

Exploration. In Proceedings of the 22nd International ACM SIGACCESS Conference on Computers and Accessibility (pp. 1-4).

Research Experience

Research Intern

Human-Computer Integration Lab, University of Chicago – Chicago, IL

June 2024 – September 2024

PI: Prof. Pedro Lopes

- Co-designed and co-developed a hand-wearable sensory substitution device to enable blind people to tactilely perceive objects at a distance via an electrotactile display, wrist-mounted camera, Python, and Arduino; Co-first author submission to ACM CHI 2025.
- Literature review, academic writing, haptics, human-centered design, behavioral study design, qualitative analysis

Research Intern and Research Collaborator

Accessible Creative Technologies Lab, Northeastern University – Boston, MA

June 2023 – September 2024

PI: Prof. Megan Hofmann

- Investigated the potential for and limitations of natural language descriptions to facilitate accessible 3D model understanding and modification by blind individuals through novel qualitative methodology and pilot system implementation/LLM prototyping; articulated design/technical implications for Generative AI + accessibility tools in first author submission to ACM CHI 2025.
- Python, OpenAI API, Research through design, autoethnography, wizard of oz, reflexive thematic analysis, accessibility, explainable AI

Research Collaborator

Accessible Computing Experiences Lab, University of Washington – Remote

October 2022 – March 2024

PI: Prof. Jacob Wobbrock

- Co-designed and validated utility of accessible Google Slides design tool for blind users, resulting in second author publication; executed/qualitatively analyzed case study results.
- Interaction design, sound design, research through design

Undergraduate Researcher

Designing Education Lab, Stanford University – Stanford, CA

September 2022 – March 2024

PI: Prof. Sheri Sheppard

- Guided design of accessible circuit simulation tool for blind electrical engineering learners through lived experiences as a blind student and synthesis of prior accessible making/learning sciences work. Resulted in second-author short paper publication and fifth author submission to ACM CHI 2025.
- Interaction design, literature review, articulating design frameworks, learning sciences, autoethnography, personal fabrication

Research Intern

Make4all Lab, University of Washington – Seattle, WA

June 2022 – September 2022

PI: Prof. Jennifer Mankoff

- Designed, engineered, and studied semi-automated workflow for producing tangible graphics for the blind using machine embroidery; built simple scalable vector graphics parser and supported implementation of texture contrast optimization algorithm for a variety of embroidery stitch types; resulted in a co-first author poster publication.
- Python, XML, parsing, optimization, validation study design, reflexive thematic analysis, academic writing

Undergraduate Researcher

Shape Lab, Stanford University – Stanford, CA

June 2020 – Present

PI: Sean Follmer

- Supporting and collaborating with accessibility researchers through interaction/experience design, literature review, user study design, software development, and disabled lived experience contributions; resulted in six publications and one middle author submission to ACM CHI 2025.
- Most involved project includes designing and validating "Audio Data Narratives", which are accessible data visualizations through interleaved sonification, and natural language descriptions automatically generated through dynamic programming, psychoacoustic literature, and co-design workshops; co-presented as second author at ACM CHI 2022

Other Work Experience:

Software Engineering Summer Intern

New Haptics – Ann Arbor, MI

August 2023 – September 2023

- Spearheaded design of 10+ interactive touch gestures/tangible UI hardware for startup's next major multi-line braille

display prototype using UX research from six users

- Began engineering custom design tool akin to Figma using Python to enable rapid prototyping/evaluation of UI/UX concepts;

demoed tool with non-visually accessible slideshow design UI on multi-line display

CS106 Section Leader

Stanford Department of Computer Science – Stanford, CA

September 2022 – Present

- Teaching 8 - 14 students per quarter with minimal CS experience foundational programming skills (e.g., data structures, recursion, object-oriented programming, graphs, sorting algorithms, etc.) through inclusive weekly hour-long lecture review/problem solving.

Meeting students weekly for one-on-one interactive grading

- Co-lead training and on-boarding for seven new section leaders

Frontend Developer Intern

R.D. Partners – Remote

October 2020 – February 2021

- Prototyped screen reader accessible UI for omnichannel request management for blind customer service representatives.

Honors and Awards

Research and Technical:

1st Place at AccessHack

Northeastern University and Hamilton College – July 2023

- Awarded $500 for securing 1st of 12 teams competing in an accessibility/assistive technology hackathon as an individual participant. Project entailed novel keyboard input on mobile/wearable devices for blind people with multiple disabilities.

Best Technical Paper Nominee

Proceedings of the 18th International Web for All Conference – May 2021

- Awarded to top 4% of papers. Publication highlighted data accessibility barriers faced by blind people during the COVID-19 pandemic through a survey (n=127) and contextual inquiry (n=12) and implications for disseminating data-driven information accessibly.

Oracle Scholarship for Excellence in Computer Science

Oracle and the National Federation of the Blind – July 2019

- Awarded $8000 as top 4 of 30 scholarship recipients from over 700 applicants to the most competitive scholarship program for blind students in postsecondary education.

Leadership and Service:

Kenneth Jernigan Leadership in Service Program Scholar

National Federation of the Blind – July 2024

- 1 of 15 selected nationwide to receive intensive civil rights activism, non-profit governance, and strategic leadership training by the National Federation of the Blind, the largest blindness civil rights organization in the world.

Lime Connect Fellow

Lime Connect – July 2022

- 1 of 25 rising juniors with disabilities selected nationwide by Google, Microsoft, and other Lime Connect Foundation partner corporations based on academic merit , disability advocacy, and leadership. Invited to fully funded five day professional development symposium in NYC.

College Admissions Mentor of the Year

Project Access International – April 2021

- 1 of 7 Project Access International college admissions mentors recognized globally for outstanding dedication to/impact on leveling the playing field for underrepresented minorities in top tier college admissions.

Lighthouse Guild Scholar

Light House Guild – June 2019

- Awarded $7500 as 1 of 18 incoming blind college students recognized nationally for academic excellence and community service. Articulated gratitude for high school teacher in a compelling nomination, recognizing her as the sole teacher of the year amongst cohort.

3rd Place at the 27th Annual National Japan Bowl Competition

Japan-America Society of Washington D.C. – April 2019

- Placed 3rd of 25+ teams in America's premier Japanese language, history, and culture competition. Earned a fully-funded, government-sponsored trip to Japan for cultural/language immersion and U.S.-Japan relations building with First Lady Akia Abe and Princess Takamado.

Speaking Engagements

Student Advocacy Liaison and Speaker

NFB of Nebraska – Gering, NE

April 2024

- Invited to speak at annual statewide blindness conference (150+ attendees) on personal disability journey/national resources for blind students; re-launched state student division.

Disability Advocate Representative

National Federation of the Blind – Baltimore, MD

January 2024

- Invited to meet with California congressmen and legislators in Washington, D.C. to garner support for disability rights bills, including the Websites and Software Applications Accessibility Act.

Student Advocacy Liaison and Speaker

NFB of Michigan – Dearborn, MI

November 2023

- Invited to speak at annual statewide blindness conference (100+ attendees) on personal disability journey and national resources for blind students; re-launched state student division.

College Readiness Instructor

NFB of Mississippi – Gulfport, MS

August 2023

- Designed and delivered day-long college readiness program for local high school students

General Conference Chairperson

NABS Pacific Student Seminar – Portland, OR

- Organized three-day empowerment, public speaking, and self-advocacy conference for 40+ student attendees across the western U.S.; managed team of 10 planning committee members to help secure hotel contract, hospitality offerings, guest speakers and activities, etc.

Gen-Z and Disability Panelist

AstraZeneca – remote

October 2022

- Invited to speak on an internal corporate panel at AstraZeneca, organized by the neurodiversity ERG, to share reflections of Gen-Z and disability intersectionality, inclusive work environments, and the future of accessibility.

Student Advocacy Liaison and Speaker

NFB of New Mexico – Albuquerque, NM

August 2022

- Invited to speak at annual statewide blindness conference (200+ attendees) on personal disability journey and national resources for blind students; revitalized existing student group.

Service

Student Volunteer

ACM Symposium on User Interface Software and Technology – Pittsburgh, PA

October 2024

- Helped facilitate logistics for conference operations

STEM Instructor

Nevada STEM2U – Reno, NV

August 2024

- Invited to teach blind youth ages 8 - 16 about outer space, the James Webb telescope, properties of light/sound waves, and other STEM concepts through interactive, day-program activities.

STEM Instructor

Indiana STEM2U – West Lafayette, IN

July 2024

- Invited to teach blind youth ages 6 - 13 about outer space, the James Webb telescope, properties of light/sound waves, and other STEM concepts through interactive, day-program activities.

Science and Engineering Division Board Member

National Federation of the Blind – remote

July 2024 – Present

- Nominated and elected to serve on the leadership team of the largest advocacy organization of blind scientists and engineers in America.

Affinity Group Founder and Director

Stanford Institute for Human-Centered Artificial Intelligence – Stanford, CA

October 2024 – June 2024

- Created community for disabled students and allies to reflect on the promise and concerns of Generative AI's impact on accessibility through speaker events and dinner conversations.

Secretary and Membership Building Chairperson

National Association of Blind Students – remote

July 2021 - February 2024

- Spearheaded national advocacy, personal development, and resource-building activities as a leader on the largest organized blind student community in the world.

Co-Founder and Co-director

Systemic Access – remote

November 2021 – Present

- Fostering intimate community of blind scientists and engineers to network non-visual STEM strategies and receive/provide mentorship; cohort represents 30+ U.S. states and 4+ countries

College Admissions Mentor

Project Access International – remote

September 2020 - August 2021

- Mentored prospective international aerospace engineering student through the American undergraduate admissions process. Helped secure admission to top 10 engineering school.

Conferences

SV, 2024 ACM Symposium on User Interface Software and Technology – Pittsburgh, PA

Co-Presenter, 2022 ACM Conference on Human Factors in Computing Systems – New Orleans, LA

Participant, 2020 ACM SIGACCESS Conference on Computers and Accessibility – Remote

Languages

English: Native/bilingual

Korean advanced

Japanese intermediate