

Jas Brooks

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Jas Brooks (they/them) is an incoming Assistant Professor at MIT EECS/CSAIL (starting July 2026), where they will lead the [Perceptual Engineering Lab](#). They recently completed a Ph.D. in Computer Science at the University of Chicago, where they were advised by Professor Pedro Lopes. **They envision a future where people can adjust their senses as easily as they tweak their phone settings**, empowering them to modify their smell, taste, temperature, or touch for health, comfort, or safety. For example, users might reduce sweetness perception to avoid unhealthy drinks or use a nose clip to detect noxious gases that are otherwise imperceivable. However, today's interfaces struggle to incorporate these senses due to challenges like power inefficiency and miniaturization. **Their research overcomes these barriers through perceptual engineering**: the design of interfaces that precisely modulate human sensory perception, such as temperature, touch, taste, and smell. **These interfaces are power-efficient, compact, versatile, and selective, enabling new interactive applications** from health interventions to immersive experiences.

Education & Experience

- 2026 **Incoming Assistant Professor**, Massachusetts Institute of Technology, Cambridge, US
Department of Electrical Engineering & Computer Science
Principal Investigator, Computer Science & Artificial Intelligence Laboratory
- 2025 **Ph.D.**, Computer Science, University of Chicago, Chicago, US
Thesis: Expanding Human and Computer Senses via Perceptual Engineering
Advisor: Pedro Lopes (UChicago)
Committee: Pattie Maes (MIT), Tanzeem Choudhury (Cornell Tech), Ben Zhao (UChicago)
- 2023 **M.Sc.**, Computer Science, University of Chicago, Chicago, US
- 2016 **B.Sc.**, Computer Science, University of Chicago, Chicago, US

Publications

ACM CHI and UIST are the premier venues for technical Human-Computer Interaction (HCI) publications, which are fully peer-reviewed and have an acceptance rate of 20-25%. These are considered top-tier in the field, even when considering HCI journals, and Computer Science is a conference-focused discipline.

Fully Refereed Publications

- Brooks, J.**, Kucirkova, N., Spence, C. "How Scratch-and-Sniff Books Encode Smell Across Development." *Multisensory Research*, 2025. [doi:10.1163/22134808-bja10176](https://doi.org/10.1163/22134808-bja10176)
- Aggarwal, A., Woodruff, S., **Brooks, J.**, Kleinberger, R. "BearBubbles: Interactive Olfactory Enrichment to Encourage Foraging in Zoo Animals." *In Proc. CHI 2026. Forthcoming.*
- Chien, L., Tanaka, Y., Amin, N., Brooks, J., Lopes, P. "Increasing Input Accuracy of Embodied Devices via Electrical Muscle Stimulation." *In Proc. CHI 2026. Forthcoming.*
- Choudhary, S., Nith, R., **Brooks, J.**, Ho, Y., Guruvugari, M., Lopes, P. "Adaptive Electrical Muscle Stimulation Improves Muscle Memory." *In Proc. CHI 2025.* [doi:10.1145/3706598.3713676](https://doi.org/10.1145/3706598.3713676)
- Li, J., Wang, Y., Cui, Z., **Brooks, J.**, Yan, Y., Lou, Z., Li, Y. "Mid-Air Gestures for Proactive Olfactory Interactions in Virtual Reality." *In Proc. CHI 2025.* [doi:10.1145/3706598.3713964](https://doi.org/10.1145/3706598.3713964)
- Brooks, J.**, Mazursky, A., Hixon, J., Lopes, P. "Augmented Breathing via Temperature Feedback

in the Nose.” *In Proc. UIST 2024*. [doi:10.1145/3654777.3676438](https://doi.org/10.1145/3654777.3676438)

Mazursky, A., **Brooks, J.**, Desta, B., Lopes, P. “ThermalGrasp: Enabling Thermal Feedback even while Grasping and Walking.” *In Proc. IEEE VR 2024*. [doi:10.1109/VR58804.2024.00056](https://doi.org/10.1109/VR58804.2024.00056)


Spence, C., Kucirkova, N., Campbell, J., Gao, Y., **Brooks, J.** “Narrative historical review of scratch-and-sniff books and their key storytelling features.” *i-Perception*, 2024. [doi:10.1177/20416695241257566](https://doi.org/10.1177/20416695241257566)

 **Brooks, J.**, Amin, N., Lopes, P. “Taste Retargeting via Chemical Taste Modulators.” *In Proc. UIST 2023*. [doi:10.1145/3586183.3606818](https://doi.org/10.1145/3586183.3606818). **Jury’s Honorable Mention for Best Demonstration.**


Brooks, J., Lopes, P. “Smell & Taste: Low-Fidelity Prototyping for Olfactory Experiences.” *In Proc. CHI 2023*. [doi:10.1145/3544548.3580680](https://doi.org/10.1145/3544548.3580680).

Brooks, J., Teng, S., Wen, J., Nith, R., Nishida, J., Lopes, P. “Stereo-Smell via Electrical Trigeminal Stimulation.” *In Proc. CHI 2021*. [doi:10.1145/3411764.3445300](https://doi.org/10.1145/3411764.3445300).

Lu, J., Liu, Z., **Brooks, J.**, Lopes, P. “Chemical Haptics: Rendering Haptic Sensations via Topical Stimulants.” *In Proc. UIST 2021*. [doi:10.1145/3472749.3474747](https://doi.org/10.1145/3472749.3474747).

 Takahashi, A., **Brooks, J.**, Kajimoto, H., Lopes, P. “Increasing Electrical Muscle Stimulation’s Dexterity by means of Back of the Hand Actuation.” *In Proc. CHI 2021*. [doi:10.1145/3411764.3445761](https://doi.org/10.1145/3411764.3445761). **Best Paper Award** (top 1%).

Je, S., Lim, H., Moon, K., Teng, S., **Brooks, J.**, Lopes, P., Bianchi, A. “Elevate: A Walkable Pin-Array for Large Shape-Changing Terrains.” *In Proc. CHI 2021*. [doi:10.1145/3411764.3445454](https://doi.org/10.1145/3411764.3445454).

 **Brooks, J.**, Nagels, S., Lopes, P. “Trigeminal-Based Temperature Illusions.” *In Proc. CHI 2020*. [doi:10.1145/3313831.3376806](https://doi.org/10.1145/3313831.3376806). **Best Paper Award** (top 1%).

Other Publications

Lu, J., Liu, Z., **Brooks, J.**, Lopes, P. “Learning to work with chemicals as a haptic technology.” *ACM Interactions*, Vol. 29, Iss. 4. (Magazine Article)

Brooks, J. “Promises of the virtual museum.” *ACM Crossroads Magazine for Students*, January 2019. [doi:10.1145/3301483](https://doi.org/10.1145/3301483). (Magazine Article)

Brooks, J. “Chemical Interfaces: New Methods for Interfacing with the Human Senses.” *UIST 2023*, November 2023. (Part of the UIST Doctoral Symposium)

Brooks, J., Lopes, P. “HC²I: Human-Computer Chemosensory Interfaces.” *Association for Chemoreception Sciences 2021 Virtual Meeting*, April 2021. (Poster)

Demos

Augmented Breathing, ACM UIST 2024.

Taste Retargeting, ACM UIST 2023.

Stereo-smell & Trigeminal-based Temperature Illusions, ACM CHI 2021.

Awards, Grants, & Fellowships

2023–24 **Siebel Scholar**, Thomas and Stacey Siebel Foundation.

2023 **Rising Star in EECS**, Georgia Institute of Technology.

2018–23 **NSF Graduate Research Fellow**, National Science Foundation.

2023 **Jury’s Honorable Mention for Best Demonstration**, ACM UIST 2023 for “Taste Retargeting via Chemical Taste Modulators.”



- 2022 **Snap Creative Challenge**, Snap Inc. for “Re-Experiencing Moments via Smell.”
- 2021 **Innovation by Design Award Honorable Mention in Experimental Design**, Fast Company for “Stereo-Smell.”
- 2021 **Best Paper Award**, ACM CHI 2021 for “Increasing Electrical Muscle Stimulation’s Dexterity by means of Back of the Hand Actuation.”
- 2020 **Best Paper Award**, ACM CHI 2020 for “Trigeminal-based Temperature Illusions.”
- 2018 **NSF Travel Award** to MoBI 2018.

Selected Talks

Panels

- 2024 [Pa.3] Panelist, “Re-conceptualizing the experience of architecture as tangible object,” AIS Week 2024.
- 2023 [Pa.1] Panelist and lead co-organizer, “Third Wave or Winter? The Past and Future of Smell in HCI,” **ACM CHI 2023**, with Dr. Jofish Kaye (Elevance Health), Prof. Marianna Obrist (UCL), Dr. Judith Amores (Microsoft Research), and Prof. Pedro Lopes (UChicago).

Invited Talks

- 2026 [T.37] Lund University (SE), hosted by Profs. Emma Söderberg & Amir Aminifar
- 2026 [T.36] Harvard GSD (US), hosted by Prof. Allen Sayegh
- 2025 [T.35] University of California San Diego (US), hosted by Prof. Ryan Kastner
- 2025 [T.34] MIT CSAIL (US), hosted by Prof. David Karger
- 2025 [T.33] Northwestern University (US), hosted by Profs. Michael Horn & Karan Ahuja
- 2025 [T.32] Columbia University (US), hosted by Prof. Brian Smith
- 2025 [T.31] University of New Mexico (US), hosted by Prof. Lydia Tapia
- 2025 [T.30] University of Texas Dallas (US), hosted by Prof. Jin Ryong Kim
- 2025 [T.29] Smell & AR Symposium (keynote) at GLUON (BE)
- 2024 [T.28] University of Pittsburgh (US), hosted by the Rehab Neural Engineering Labs
- 2024 [T.27] Malmö University (SE), hosted by Prof. David Kadish
- 2024 [T.26] Cornell Tech (US), hosted by Prof. Tanzeem Choudhury
- 2024 [T.24] Harvard GSD (US), hosted by Prof. Allen Sayegh
- 2023 [T.21] MIT Media Lab (US), hosted by Prof. Pattie Maes
- 2022 [T.18] Smart Haptics 2022 (US) – industry conference
- 2021 [T.12] MIT Media Lab (US), hosted by Prof. Pattie Maes
- 2021 [T.10] Northwestern University (US), hosted by Profs. Nabil Alshurafa & Josiah Hester
- 2020 [T.06] Dagstuhl Seminar (DE) on “Physiological Interfaces” (Canceled due to COVID-19)
- 2018 [T.03] University of Sussex (UK), hosted by Prof. Marianna Obrist

Service & Outreach

Program Committee (Associate Chair or Editor)

ACM UIST Papers (2024, 2022, 2026).



ACM CHI Papers (2026, 2024), Late-Breaking Work (2020–23).

ACM DIS Papers (2023–26).

ACM TEI Pictorials (2024), Papers (2026, 2023), Work-In-Progress (2021–22).

ACM C&C Papers (2026).

Haptics Symposium Papers (2026).

MUM Papers (2023).

Organizing Committee

2026 ACM CHI Technical Program Chairs Assistant

2026 ACM TEI Student Design Challenge Chair

2021 SIGCHI Operations Committee

2021 Augmented Humans Social Media Chair

2019 ACM UIST Video Chair

Session Chair

2022–24 **ACM CHI** “Flavor and Food Interactions” (2024), “VR/AR/XR Play Experiences” (2023), “Mouth-based Interaction” (2022).

2021–24 **ACM UIST** “Body as the Interface” (2024), “Mind & Body” (2022), “Illustration & Information Management” (2021).

2021 European Chemoreception Research Organization (**ECRO**): “Chemosenses beyond science.”

Peer Reviewing

Since 2018, I regularly review for leading conferences and journals related to my field (over 190 reviews), including: ACM CHI, ACM UIST, SIGGRAPH Asia, IEEE VR, ACM CSCW, ACM TEI, ACM VRST, ACM DIS, IEEE WHC, ACM IMWUT, ACM IUI, ACM IMX, Frontiers in VR, IEEE Access, IHJCS, Vernon Press, and AHs. I received four special recognitions for outstanding reviews from ACM CHI, four from ACM UIST, one from IEEE WHC, and seven from ACM DIS.

Academic Workshops & Symposia Organized

2025 Lead Co-organizer, ACM UIST [Everyday Perceptual and Physiological Augmentation Workshop](#)

2023 Lead Co-organizer, ACM CHI [Smell, Taste, & Temperature Interfaces Workshop](#)

2021 Co-organizer, ACM UIST Haptics Social Meetup

2021 Lead Co-organizer, ACM CHI [Smell, Taste, & Temperature Interfaces Workshop](#)

2020 Lead Co-organizer, [Smell, Taste, & Temperature Symposium](#) (Independent)

Selected Outreach

2020–Present Arts & Cultural research and collaborations ([see Arts & Culture CV: jasbrooks.net/culture-cv](https://jasbrooks.net/culture-cv)).

2025 Invited panelist, “Interview Stories from Recent Hires” for the Academic Job Market Camp, University of Chicago.

2022 Committee member, Humanities UX Program, University of Chicago.

2021 Invited speaker, Rewriting the Code, University of Illinois at Chicago.

2020 Co-organizer, [Ada Lovelace Week](#), University of Chicago (4-day symposium)



celebrating minority-gender technologists in art, industry, and academia).

2020–21 Membership Engagement Committee (2021) and Non-Affiliated Members Committee (2020) member, Institute of Food Technologists Student Association.

Experience (cont.)

Research

2018–Present **Graduate Research Assistant**, Human-Computer Integration Lab
Department of Computer Science, University of Chicago
Advisor: Prof. Pedro Lopes

2023 **Research Intern**, Microsoft Research
Mentor: Dr. Judith Amores

Teaching

2020–Present **Teaching Assistant**, Introduction to Human-Computer Interaction (CMSC 20300)
Department of Computer Science, University of Chicago
Instructor of Record: Pedro Lopes
Responsibilities: Designed major project assignment and Unity template for HCI design. Adapted to work both on laptops and port to the Oculus Quest 2. Had 100+ students develop user interfaces for a VR diving simulation. Designed an optional assignment and Unity template for interactive haptic design with Oculus Quest 2.

Spring 2019 **Teaching Assistant**, Engineering & Understanding Interactive Devices (CMSC 23220)
Department of Computer Science, University of Chicago
Instructor of Record: Pedro Lopes
Responsibilities: Assisted with assignment grading and office hours. Designed lecture and problem set introducing students to Unity for VR. Had 35 students successfully create a VR experience including visuals, haptics, and wireless communication to a microcontroller in under one week.

Fall 2018 **Lecturer**, Virtual Reality (ATS 4135)
Department of Arts & Technology Studies, School of the Art Institute of Chicago
Teaching Assistant: Zhong Ren
Responsibilities: Designed and taught Master’s art course on VR (14 students; 6 hours per week) integrating both theory and practice. Additionally offered optional, weekly introduction to programming concepts.

Mentoring

Undergraduate Students

- 2024 Janice Hixon (CS), University of Chicago (co-author on “Augmented Breathing,” ACM UIST 2024, and major contributor to ongoing project).
- 2023–24 Katherine Waterman (MADD), University of Chicago (contributed to ongoing project).
- 2021–23 Noor Amin (MADD & Neuroscience), University of Chicago (co-author on “Taste Retargeting,” ACM UIST 2023). Now at Riot Games.
- 2022 Beza Desta (Computer Science), University of Chicago (co-author on “ThermalGrasp,” IEEE VR 2024). Now graduate student at Princeton.
- 2022 Eva McCord (Neuroscience), University of Chicago (contributed to pilot project).
- 2021 Oishee Chakrabarti (Computer Science), University of Chicago (contributed to pilot project).



Now at Deloitte.

2019 Daniel Steinberg (Computer Science), University of Chicago (collaborated on demonstration scenes for paper, “Trigeminal-based Temperature Illusions,” ACM CHI 2020 Best Paper). Now at Accenture.

Master’s Students

2025 Hui-Ju Fan (Marketing), University of Texas Dallas.

2024 Gordon Yu (Engineering), Tsinghua University (major contributor to ongoing project).

2024 Woosang Kim (Informatics), University of Electro-Communications (major contributor to ongoing project).

2019–20 Jinxuan Wen (Computer Science), University of Chicago (co-author on “Stereo-Smell,” ACM CHI 2021).

2019 Nitesh Nath (Computer Science), University of Chicago (contributed to pilot project).

Professional

2016–18 **Associate Software Developer**, Argonne Leadership Computing Facility, Argonne National Laboratory, Lemont, IL, USA.

Advisors: Joseph Insley, Silvio Rizzi

Responsibilities: Co-advised undergraduate interns. Explored immersive visualizations and simulations primarily using Kasthuri Lab’s electron microscopy imaging of a mouse’s brain. Represented Argonne at a military conference amongst national labs.

Selected Press

2024 [Pr.21] “Could scented books encourage more kids to read?,” *Science Norway*.

2023 [Pr. 20] “Finally, the Scratch-and-Sniff Cassette Tapes You Crave Are Here”, *Hackster.IO*.

2022 [Pr. 19] “VR Still Stinks Because It Doesn’t Smell”, *WIRED*.

2022 [Pr. 17] “The Metaverse, in Glorious Smell-O-Vision!”, *Built In*.

2021 [Pr. 14] “Smell-O-Vision: nose-zapping wearable simulates smell.” *Digital Trends*.

2021 [Pr. 13] “Self-Contained Device Lets Users Smell in Stereo.” *Hackster.IO*.

2021 [Pr. 12] “Digital Nose Stimulation Enables Smelling in Stereo.” *IEEE Spectrum*.

2020 [Pr. 8] “VR wearable can simulate temperature changes using chemicals.” *Digital Trends*.

2020 [Pr. 7] “VR System Hacks Your Nose to Turn Smells Into Temperatures.” *IEEE Spectrum*.

Last Update: April 10th, 2026