Jas Brooks

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Jas Brooks (they/them) is a Computer Science Ph.D. student at the University of Chicago, advised by Professor Pedro Lopes. Their research focuses on engineering devices that chemically stimulate and manipulate the human senses. These **chemical interfaces** have **reduced power consumption** for thermal feedback, **miniaturized feedback mechanisms** for haptic wearables, **created novel** modes of **interaction** for taste, and **inspired new sensations** like stereo-smell. Jas has published work at top Human-Computer Interaction (HCI) venues, including ACM CHI and UIST, of which 2 received Best Paper Awards. Their work has also been awarded an Honorable Mention in the Fast Company Innovation by Design Award for Experimental Design and covered in media publications like *WIRED*, *Fast Company*, *Digital Trends*, and *IEEE Spectrum*. Jas is a 2023 Rising Star in EECS and a 2024 Siebel Scholar, was a UChicago Media Arts, Data, and Design Graduate Fellow, and received support for their research from a National Science Foundation Graduate Research Fellowship.

Education

Exp. 2025 **Ph.D.**, Computer Science, University of Chicago, Chicago, US.
Advisor: Pedro Lopes. *Committee:* Pattie Maes, Tanzeem Choudhury, Ben Zhao.

2023 **M.Sc.**, Computer Science, University of Chicago, Chicago, US.

2016 **B.Sc.**, Computer Science, University of Chicago, Chicago, US.

Publications

Peer-Reviewed Conference Papers
ACM CHI and UIST are premiere Human-Computer Interaction research venues with a 20-25% acceptance rate.

[C.8] Mazursky, A., **Brooks, J.**, Desta, B., Lopes, P. "ThermalGrasp: Enabling Thermal Feedback even while Grasping and Walking." *In Proc. IEEE VR 2024.* (Forthcoming.)

🏵 [C.7] **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 Demo.

[C.6] **Brooks, J.**, Lopes, P. "Smell & Paste: Low-Fidelity Prototyping for Olfactory Experiences." *In Proc. CHI 2023.* [doi:10.1145/3544548.3580680](https://doi.org/10.1145/3544548.3580680).

[C.5] 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).

🏵 [C.4] **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).
Fast Company Innovation Honorable Mention in Experimental Design.

🏆 [C.3] 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%).

[C.2] 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](doi:10.1145/3411764.3445454).

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

Magazine Publications

[M.2] Lu, J., Liu, Z., **Brooks, J.**, Lopes, P. "Learning to work with chemicals as a haptic technology." *ACM Interactions*, Vol. 29, Iss. 4.

[M.1] **Brooks, J.** "Promises of the virtual museum." *ACM Crossroads Magazine for Students*, January 2019. [doi:10.1145/3301483](doi:10.1145/3301483).

Posters

[P.3] **Brooks, J.** "Chemical Interfaces: New Methods for Interfacing with the Human Senses" *UIST 2023*, November 2023. (Part of the UIST Doctoral Symposium.)

[P.2] Lu, J., Liu, Z., **Brooks, J.**, Lopes, P. "Chemical Haptics: Rendering Haptic Sensations via Topical Stimulants." *UIST 2022*, November 2022.

[P.1] **Brooks, J**, Lopes, P. "HC^{2}I: Human-Computer Chemosensory Interfaces." *Association for Chemoreception Sciences 2021 Virtual Meeting*, April 2021.

Demos

[D.2] Taste Retargeting, ACM UIST 2023.

[D.1] Stereo-smell & Trigeminal-based Temperature Illusions, ACM SIGCHI 2021.

Awards, Grants, & Fellowships

Scientific Research

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 Demo**, 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.

Arts & Culture

2022–23 **Graduate Fellow**, Media Arts, Data, and Design Center, UChicago.

2022 **Scientific Award**, Digital Olfaction Society for "Scent Tech at the Turn of the Century" talk with Prof. Simon Niedenthal (Malmö University).

2022 **Finalist for the Sadakichi Award** (for Experimental Work with Scent), "Scent in

Cinema" and "Twitch & Sniff Along" series, 8th Art and Olfaction Awards.

2021 **Penny for your Thoughts**, Mediamatic.

2021 **Laboratory Residency**, Spokane Interactive Arts.

2021 **Art & Olfaction Accelerator Program**, Institute for Art and Olfaction.

2020 **Graduate Council Academic & Professional Funds**, UChicago Graduate Council.

2020 **UChicago Arts Grant**, UChicago Arts.

2019–20 **ASCI Graduate Collaboration Grant**, UChicago Arts, Science, & Culture Initiative.

2019 **Chicago Awesome Foundation Grant**, Chicago Awesome Foundation.

2018 **Graduate Council Academic & Professional Funds**, UChicago Graduate Council.

2016 **Dean's Fund**, UChicago College.

2015–16 **Undergraduate Fellow**, UChicago Game Changer Chicago Design Lab.

Selected Talks

Panels

2023 [Pa. 2] Invited Speaker and Exhibitor, Odeuropa Smell Culture Fair organized by the Odeuropa Project and Prof. Inger Leemans (KNAW).

2023 [Pa. 1] Panelist and lead co-organizer, "Third Wave or Winter? The Past and Future of Smell in HCI" at ACM CHI 2023, alongside Dr. Jofish Kaye (Elevance Health), Prof. Marianna Obrist (UCL), Dr. Judith Amores (Microsoft Research), and Prof. Pedro Lopes (UChicago).

Invited Talks

2023 [T.22] Odeuropa (EU/Virtual), hosted by Prof. William Tullett (University of York)

2023 [T.21] MIT Media Lab (US), hosted by Prof. Pattie Maes

2023 [T.20] MO.CA Centro per le Nuove Culture (IT), hosted by curator Elena Giulia Abbiatici

2022 [T.18] Smart Haptics 2022 (US)

2022 [T.17] Anglia Ruskin University & University of Cambridge (UK), hosted by Prof. William Tullett (ARU) and Ally Louks (University of Cambridge)

2021 [T.13] School of the Art Institute of Chicago (US), hosted by Prof. Tedd Neenan

2021 [T.12] MIT Media Lab (US), hosted by Prof. Pattie Maes

2021 [T.10] Northwestern University (US), hosted by Prof. Nabil Alshurafa

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

ACM UIST Papers (2022).

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

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

ACM DIS Papers (2023–24).

MUM Papers (2024).

Organizing Committee

2021 SIGCHI Operations Committee

2021 Augmented Humans Social Media Chair

2019 ACM UIST Video Chair

Session Chair

2022–23 **ACM CHI** "VR/AR/XR Play Experiences" (2023), "Mouth-based Interaction" (2022).

2021–22 **ACM UIST** "Mind and Body" (2022), "Illustration and Information Management" (2021).

2021 European Chemoreception Research Organization (**ECRO**): "Chemosenses beyond science: How the humanities and social sciences can inform science."

Peer Reviewing

I regularly review for conferences and journals (over 130 reviews since 2018). I received special recognition for outstanding reviews (formal distinction): three from ACM CHI, four from ACM UIST, and one from IEEE WHC. I have reviewed for ACM CHI, ACM UIST, IEEE VR, IEEE WHC, ACM IMWUT, ACM CSCW, AHs, ACM DIS, Frontiers in VR, ACM IUI, SIGGRAPH Asia, ACM TEI, ACM VRST, ACM IMX, and IEEE Access.

Academic Workshops & Symposia Organized

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 last section).

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

Research

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

2023 **Research Intern**, Microsoft Research

2017–20 **Researcher**, STAGE Lab
University of Chicago
Principal Investigator: Prof. Nancy Kawalek

Teaching

Fall 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

2023–Present Katherine Waterman (MADD), University of Chicago

2023–Present Danna Kim (Psychology & Economics), University of California, Santa Cruz

2021–23 Noor Amin (MADD & Neuroscience), University of Chicago

2022 Eva McCord (Neuroscience), University of Chicago

2021 Oishee Chakrabarti (Computer Science), University of Chicago

2019 Daniel Steinberg (Computer Science), University of Chicago

Master's Students

2019–20 Jinxuan Wen (Computer Science), University of Chicago

2019 Nitesh Nath (Computer Science), University of Chicago

Professional

2020 — **Guest Artist Guide**, Wrightwood 659, Chicago, IL, USA.
Responsibilities: Co-led tour (with Elenora Edreva) for Wrightwood 659's "Allure of Matter" exhibition, focusing on engaging visitors with the exhibition through olfaction, sniffing, and discussion of materials.

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 & Exhibitions

Press

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.*

Exhibitions

2022 [Ex. 3] Stereo-smell in [De geur van kleur](#) (The color of smell). Online exhibition curated by the Smell Yourself Healthy student group at Wageningen University.

Curation & Media Archaeological Research

In their spare time, Jas independently explores media archaeology, focusing on historical scent technologies and associated media from the 20th century onwards. Their research involves conserving AromaRama and Smell-O-Vision! (1960 cinematic scent technologies), capturing oral histories from dot-com era scent tech companies, and uncovering scented film exhibitions from 1900-1959. Their co-curatorial work was a finalist for the 2022 Sadakichi Award for Experimental Use of Scent.

2021–Present **Scent Tech Histories**
Collaboration with: Prof. Simon Niedenthal (Malmö University).
Conduct oral history research and media archaeology on scent technologies and their companies from the turn of the 21st century. Presentation at Digital Olfaction Society 2022 received "Scientific Award".

2020–Present **Smell-O-Vision Restoration**
Collaboration with: Tammy Burnstock, Olivia Jezler.
Lead conservation of the last existing Smell-O-Vision system from the 1960s as well as the titular *Scent of Mystery* fragrance worn by Elizabeth Taylor.

2020–Present **AromaRama Media Archaeology**
Conduct original research on the history of AromaRama, Smell-O-Vision's competitor, and its sole film, *Behind the Great Wall*. Most recently presented this work at Uncommon Senses IV, a premiere conference for Sensory Studies.

2021–Present **Timeless Smell Archive**
Manage the [Timeless Smell Archive](#), a digital archive of scratch-and-sniff cards and scent-media related documents.

2021–22 **Twitch and Sniff Along series**
Produced and curated the ["Twitch and Sniff Along" series](#) for the Weston Game Lab at the University of Chicago, featuring playthroughs (with scratch and sniff) and discussions of smell-based video games such as *Leather Goddesses of Phobos* (1986) and *Leisure Suit Larry: Love for Sail!* (1996). Recognized as a Finalist for the Sadakichi Award (for Experimental Work with Scent) at the 8th Art and Olfaction Awards.

2020–22 **Scent in Cinema series**

Produced and co-curated the ["Scent in Cinema" series](#) with [Tammy Burnstock](#), featuring screenings (with scratch and sniff) and discussions of scented cinema such as *[A Tale of Old Whiff (1960)](#)*. Recognized as a Finalist for the Sadakichi Award (for Experimental Work with Scent) at the 8th Art and Olfaction Awards.

2020 **Commiserate Chicago**
Organized media arts festival, which took place at the University of Chicago.

Last Update: Jan. 2024