

# Jas Brooks

they/them/their 🌱 [jasbrooks.net](http://jasbrooks.net) 🍌 [jasbrooks@uchicago.edu](mailto:jasbrooks@uchicago.edu)

## Education

- Ph.D., University of Chicago** (Chicago, US): Computer Science. 2019 - Exp. 2025  
Advisor: Prof. Pedro Lopes
- B.Sc., University of Chicago** (Chicago, US): Computer Science. 2012 - 2016
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## Publications

### *Peer-Reviewed Conference Papers*

ACM CHI and UIST are regarded as premiere venues for Human-Computer Interaction research with a 20-25% acceptance rate.

- 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.5]
- 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). [C.4]
- Fast Company Innovation by Design Honorable Mention in Experimental.**
- 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.3]
- 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). [C.2]
- 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%). [C.1]

### *Posters*

ACM S Meeting is regarded as a premiere venue for Chemosensory research.

- Lu, J., Liu, Z., **Brooks, J.**, Lopes, P. "Chemical Haptics." *In Proc. UIST 2022*. [P.2]
- Brooks, J.**, Lopes, P. "HC<sup>2</sup>I: Human-Computer Chemosensory Interfaces." *Association for Chemoreception Sciences 2021 Virtual Meeting*, April 2021. [P.1]

### *Demonstrations*

- Stereo-Smell & Trigeminal Temperature, ACM SIGCHI 2021. [D.1]

### *Magazine Publications*

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

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

[M.1]

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## Awards, Grants, Fellowships, & Residencies

### *Scientific Research*

- NSF Graduate Research Fellow (ending Spr. 2023)**, National Science Foundation. 2018 - 2023  
On Reserve for 2023 (no funding from NSF GRFP).
- Scientific Award**, Digital Olfaction Society for "Scent Tech at the Turn of the Century". 2022
- Snap Creative Challenge**, Snap Inc. for "Re-Experiencing Moments via Smell." 2022
- Innovation by Design Award Honorable Mention in Experimental Design**, Fast Company for "Stereo-Smell". 2021
- Best Paper Award**, ACM CHI for "Increasing Electrical Muscle Stimulation's Dexterity by means of Back of the Hand Actuation" (top 1%). 2021
- Best Paper Award**, ACM CHI for "Trigeminal-based Temperature Illusions" (top 1%). 2020
- NSF Travel Award to MoBI 2018.** 2018

### *Arts & Culture*

- Finalist for the Sadakichi Award** (for Experimental Work with Scent), "Scent in Cinema" and "Twitch & Sniff Along" series, 8th Art and Olfaction Awards. 2022
- Graduate Fellow**, Media Arts, Data, and Design Center, UChicago. 2022 - Present
- Penny for your Thoughts**, *Scent Tech Histories*, Mediamatic. 2021
- Laboratory Residency**, *Smell Jockeying*, Spokane Interactive Arts. 2021
- Institute for Art and Olfaction Accelerator Program**, *Scratch and Sniff Open Database*, Institute for Art and Olfaction. 2021
- Academic & Professional Funds**, *Scent in Cinema*, UChicago Graduate Council. 2020
- Arts Grant**, *Perfect Melon*, UChicago Arts. 2020
- Graduate Collaboration Grant**, UChicago Arts, Science, & Culture Initiative. 2019 - 2020
- CAF Grant**, *Community-Based Olfactory Education*, Chicago Awesome Foundation. 2019
- Academic & Professional Funds**, UChicago Graduate Council. 2018

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## Service & Outreach

### *Organizing Committee*

- SIGCHI Operations Committee 2021 - Present

Augmented Humans Social Media Chair 2021  
ACM UIST Video Chair 2019

### *Program Committee*

ACM UIST Papers 2022  
ACM CHI Late-Breaking Work subcommittee 2020 - 2022  
ACM TEI Works In Progress subcommittee 2021 - 2022

### *Session Chairing*

ACM CHI: "Mouth-based Interaction" 2022  
ACM UIST: "Illustration and Information Management" 2021  
European Chemoreception Research Organization: "Chemosenses beyond science" (Premiere chemosensory research venue) 2021

### *Peer Reviewing*

I regularly review for conferences and journals (over 80 reviews since 2018). I received two special recognitions for outstanding reviews (formal distinction) from ACM CHI and four from ACM UIST. This includes: CHI ('19-'22), UIST ('18-'22), IEEE VR ('20), IEEE WHC ('21), IMWUT ('22), CSCW ('22), AHs ('19), DIS ('19, '21), Frontiers in VR ('20), IUI ('20-'21), SIGGRAPH Asia ('21), TEI ('21-'22), VRST ('20).

### *Selected Outreach*

Committee member, Humanities UX Program, University of Chicago 2022  
Invited speaker, Rewriting the Code, University of Illinois at Chicago 2021  
Co-organizer, Ada Lovelace Week, University of Chicago (4-day symposium celebrating minority-gender technologists in art, industry, and academia) 2020  
Membership Engagement Committee ('21) and Non-Affiliated Members Committee ('20) member, Institute of Food Technologists Student Association 2020 - 2021

### *Academic Workshops & Symposia Organized*

Co-organizer, ACM UIST Haptics Social Meetup 2021  
Co-organizer & lead, ACM CHI [Smell, Taste, & Temperature Interfaces](#) Workshop 2021  
Co-organizer & lead, Independent [Smell, Taste, & Temperature](#) Symposium 2020

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## **Professional Experience**

### *Research*

**Graduate Research Assistant**, Human-Computer Integration Lab, Department of 2018 - Present

Computer Science, University of Chicago.

Advisor: Assist. Prof. Pedro Lopes

**Researcher**, STAGE Lab, University of Chicago.

2017 - 2020

Supervisor: Prof. Nancy Kawalek

### *Teaching & Mentoring*

**Teaching Assistant**, Introduction to Human-Computer Interaction (CMSC 20300),  
Department of Computer Science, University of Chicago.

Fall 2020 - Present

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 the Oculus Quest 2.

**Teaching Assistant**, Inventing, Engineering and Understanding Interactive Devices (CMSC 23220), Department of Computer Science, University of Chicago.

Spring 2019

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.

**Lecturer**, Virtual Reality (ATS 4135), Department of Arts & Technology Studies, School of the Art Institute of Chicago.

Fall 2018

Responsibilities: Designed and taught masters art course on VR (14 students; 6 hours per week). Offered optional, weekly introduction to programming concepts.

### *Mentoring during Ph.D. at UChicago*

**Undergraduate students:** Eva McCord (UChicago, '22); Noor Amin (UChicago, '21-'22); Danna Kim (UCSC, '21-'22); Oishee Chakrabarti (UChicago, '21); Daniel Steinberg (UChicago, '19).

**Master's students:** Jinxuan Wen (UChicago, '19-'20); Nitesh Nath (UChicago, '19).

### *Professional*

**Guest Artist Guide**, Wrightwood 659, Chicago, IL, USA.

2020

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.

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

2016 - 2018

Supervisors: 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 on VR amongst national laboratories.

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## Selected Talks

Anglia Ruskin Univ. & Univ. of Cambridge, hosted by Prof. William Tullett (ARU) and Ally Louks (Univ. of Cambridge)	2022 [T.17]
School of the Art Institute of Chicago, hosted by Prof. Tedd Neenan	2021 [T.13]
MIT Media Lab, hosted by Prof. Pattie Maes	2021 [T.12]
Northwestern University, hosted by Prof. Nabil Alshurafa	2021 [T.10]
Dagstuhl Seminar on "Physiological Interfaces" (Canceled due to COVID-19)	2020 [T.06]
University of Sussex, hosted by Prof. Marianna Obrist	2018 [T.03]

## Guest Lectures

"Activating new senses," University of Chicago	2020, 2021
"Introduction to Virtual Reality," University of Chicago	2019

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## Selected Press

"VR Still Stinks Because It Doesn't Smell", <i>WIRED</i> .	2022
"What Will the Metaverse Smell Like?", <i>The Slowdown</i> .	2022
"The Metaverse, in Glorious Smell-O-Vision!", <i>Built In</i> .	2022
"Smell-O-Vision: This nose-zapping wearable simulates smell using electricity", <i>Digital Trends</i> .	2021
"Self-Contained Device Lets Users Smell in Stereo", <i>Hackster.IO</i> .	2021
"Digital Nose Stimulation Enables Smelling in Stereo", <i>IEEE Spectrum</i> .	2021
"VR wearable can simulate temperature changes using odorless chemicals", <i>Digital Trends</i> .	2020
"VR System Hacks Your Nose to Turn Smells Into Temperatures", <i>IEEE Spectrum</i> .	2020

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## Curation & Media Archaeological Research

These endeavors are not part of my dissertation and occupy my weekends, when not in ACM CHI or ACM UIST deadline-mode.

### Scent Tech Histories

2021 - Present

Collaboration with: Prof. Simon Niedenthal (Malmö Univ.).

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".

### Smell-O-Vision Restoration

2020 - Present

Collaboration with: Tammy Burnstock, Prof. Christy Spackman (ASU), Lauryn

Mannigel (ASU), Olivia Jezler, and MANE.

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.

**AromaRama Media Archaeology**

2020 - Present

Conduct original research on the history of AromaRama, Smell-O-Vision's competitor, and its sole film, *Behind the Great Wall*.

**Timeless Smell Archive**

2021 - Present

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

**Twitch and Sniff Along series**

2021 - 2022

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.

**Scent in Cinema series**

2020 - 2022

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.

**Commiserate Chicago**

2020

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