

Education

- Jan 2019 - Present **Ph.D.**, Computer Science, University of Chicago, Chicago, IL.
Advisor: Assist. Prof. Pedro Lopes
Supported by a National Science Foundation Graduate Research Fellowship.
- 2012 - 2016 **B.Sc.**, Computer Science, University of Chicago, Chicago, IL.

Publications & Demos

Peer-Reviewed Conference Papers

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

- [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 by Design Honorable Mention in Experimental.
- [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](https://doi.org/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](https://doi.org/10.1145/3313831.3376806). **Best Paper Award** (top 1%).

Posters

AChemS Meeting is regarded as a premiere venue for Chemosensory research.

- [P.1] **Brooks, J.**, Lopes, P. "HC²I: Human-Computer Chemosensory Interfaces." *Association for Chemoreception Sciences 2021 Virtual Meeting*, April 2021.

Demos

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

Magazine Publications

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

Awards, Grants, Fellowships, & Residencies

Scientific Research - total awarded: \$140,100.

- 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 - 2023 **NSF Graduate Research Fellow**, National Science Foundation Graduate Research Fellowship Program, est. \$138,000.
- 2018 **Travel Award to MoBI 2018**, National Science Foundation, \$2,100.

Arts & Culture - total awarded: \$16,420.

- 2022 **Finalist for the Sadakichi Award** (for Experimental Work with Scent), "Scent in Cinema" and "Twitch & Sniff Along" series, 8th Art and Olfaction Awards.
- 2022 - Present **Graduate Fellow**, Media Arts, Data, and Design Center, University of Chicago.
- 2021 **Penny for your Thoughts**, *Scent Tech Histories: Creative Reinterpretations*, Mediamatic, 500€ (est. \$590).
With: Simon Niedenthal.
- 2021 **Laboratory Residency**, *Lilac Time (Virtual Smell Jockeying)*, Spokane Interactive Arts, \$600.
- 2021 **Institute for Art and Olfaction Accelerator Program**, *Scratch and Sniff Open Database*, Institute for Art and Olfaction, \$1,000.
- 2020 **Graduate Council Academic & Professional Funds**, *Scent in Cinema: A Tale of Old Whiff*, University of Chicago Graduate Council, \$750.
- 2020 **UChicago Arts Grant**, *Perfect Melon*, University of Chicago Arts, \$2,480.
With: Gabby Luu & Li Yao.
- 2019 - 2020 **ASCI Graduate Collaboration Grant**, *Subconscious influences on an Audience via Body Odors*, University of Chicago Arts, Science, & Culture Initiative, \$3,000.
With: Arianna Gass.
- 2019 **Chicago Awesome Foundation Grant**, *Community-Based Olfactory Education*, Chicago Awesome Foundation, \$1,000.

With: Eleonora Edreva.

- 2018 **Graduate Council Academic & Professional Funds**, *Smellcapes in Ancient Egypt talk*, University of Chicago Graduate Council, \$500.
- 2016 **Dean's Fund**, *Simulathon*, The College at the University of Chicago, \$500.
- 2015 - 2016 **Undergraduate Fellow**, University of Chicago Game Changer Chicago Design Lab, est. \$6,000.

Service & Outreach

Organizing Committee

- SIGCHI Operations Committee (Present-'21).
- AHs Social Media Chair ('21).
- UIST Video Chair ('19).
- UChicago [Humanities UX](#) Program Faculty Committee ('22-'23).

Program Committee

- UIST Papers ('22).
- CHI Late-Breaking Work Associate Chair ('22-'20).
- TEI Work In Progress Associate Chair ('22, '21).

Session Chair & Moderator

- CHI "Mouth-based Interaction" session chair (2022).
- UIST "Illustration and Information Management" session chair (2021).
- ECRO "Chemosenses beyond science: How the humanities and social sciences can inform science" session chair (2021).
- "Participatory Scented Cinema" panel moderator for Scent in Cinema series (2021).
- "Leisure Suit Larry: Love for Sail!" panel moderator for Twitch and Sniff Along series (2021).
- "Leather Goddesses of Phobos" panel moderator for Twitch and Sniff Along series (2021).
- "A Tale of Old Whiff" panel moderator for Scent in Cinema series (2021).

Peer Reviewing

I regularly review for conferences and journals (over 75 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).

Festival & Student Association Committees

- Commiserate Director ('21), Committee ('20).
- IFTSA Membership Engagement Committee ('21), Non-Affiliated Members Committee ('20).

Student Volunteer

- UIST 2018.

Teaching & Mentoring Experience

- Fall 2021 **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 60 students develop user interfaces for a VR diving simulation.
- Fall 2020 **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. Had 60 students create virtual interfaces for a diving experience.
- Spring 2019 **Teaching Assistant**, Inventing, Engineering and 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 **Adjunct Professor**, Virtual Reality (ATS 4135), Department of Arts & Technology Studies, School of the Art Institute of Chicago.
Teaching Assistant: Zhong Ren
Responsibilities: Designed and taught masters art course on VR (14 students; 6 hours per week). Offered optional, weekly introduction to programming concepts.

Mentoring during PhD at UChicago

- 2022 - Present Project-based mentorship. **Eva McCord**, undergraduate student, University of

Chicago, Neuroscience.

- 2021 - Present Project-based mentorship. **Noor Amin** ([website](#)), undergraduate student, University of Chicago, Neuroscience and Media Art, Data, & Design.
- 2021 - Present Independent mentorship. **Danna Kim**, undergraduate student, University of California Santa Cruz, Psychology. (RA, [Univ. of Minnesota's CFL Lab.](#))
- 2022 - Present Independent mentorship. **Louis Brooks**, undergraduate student, University of California Santa Cruz, Business Management Economics. (Culinary Intern, France.)
- Win - Spr 2022 Project-based mentorship. **Oishee Chakrabarti**, undergraduate student, University of Chicago, Computer Science and Economics.
- 2019 - 2020 Project-based mentorship. **Jingxuan Wen**, former predoctoral Masters student, University of Chicago, Computer Science. Stereo-smell.
- Spr 2019 Project-based mentorship. **Daniel Steinberg**, former undergraduate student, University of Chicago, Computer Science. Temperature Illusions.
- Win 2019 Project-based mentorship. **Nitesh Nath**, former Masters student, University of Chicago, Computer Science. Temperature Illusions.

Research Experience

- 2018 - Present **Graduate Research Assistant**, Human-Computer Integration Lab, Department of Computer Science, University of Chicago.
Advisor: Assist. Prof. Pedro Lopes
- 2019 - 2020 **Workshop Leader**, Community-Based Olfactory Research Group.
With: Eleonora Edreva
- 2017 - 2020 **Researcher**, STAGE Lab, University of Chicago.
With: Prof. Nancy Kawalek

Academic Workshops & Symposia Organized

- UIST 2021 UIST Haptics Meetup (Social). Co-organized with Jasmine Lu and Pedro Lopes.
- CHI 2021 [Smell, Taste, and Temperature Interfaces](#) (STT21): 3-day CHI workshop co-organized with Pedro Lopes, Judith Amores, Emanuela Maggioni, Haruka Matsukura, Marianna Obrist, Roshan Lalintha Peiris, and Nimesha Ranasinghe.
- UChicago [Ada Lovelace Week 2020](#) (AdaWeek): 4-day symposium celebrating minority-gender technologists from art, industry, and academia. Co-organized with Jasmine Lu, Yujie Tao, Dasha Shifrina, Zoe Liu, and Pedro Lopes.
- Independent [Smell, Taste, and Temperature Symposium](#) (STT20): 1-day symposium for CHI 2021 papers on smell, taste, and temperature. Co-organized with Pedro Lopes.

Curation & Media Archaeological Research

These endeavors are not part of my dissertation and tend to occupy my weekends. I am currently slowing down many of these projects to focus on my doctoral research until my graduation.

- 2021 - Present **Scent Tech Histories**
In collaboration with Prof Simon Niedenthal (Malmö University), I have been conducting oral history research and media archaeology on scent technologies and their companies from the turn of the 21st century.
- 2020 - Present **Smell-O-Vision Restoration**
In collaboration with Tammy Burnstock, Prof. Christy Spackman, and Lauryn Mannigel, I have been working on efforts to restore the last existing Smell-O-Vision system from the 1960s (also known as the Smell Brain) as well as the titular *Scent of Mystery* fragrance.
- 2020 - Present **AromaRama Media Archaeology**
In parallel, I have been completing original research on the history of AromaRama.
- 2021 - Present **Timeless Smell Archive**
Manage the [Timeless Smell Archive](#), a digital archive of scratch-and-sniff cards and scent-media related documents.
- 2021 - Present **Twitch and Sniff Along series**
Producing and curating 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).
- 2020 - Present **Scent in Cinema series**
Producing and co-curating 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 \(1960\)](#).
- 2018 - 2020 Organized media arts festival, Commiserate 2020, which took place at the University of Chicago.
Co-hosted (alongside the Oriental Institute) and organized talk accompanied by scents from Dora Goldsmith titled "Smellscapes in Ancient Egypt" (Nov 2018).

Working Experience

- 2021 - Present **Graduate Fellow**, MADD Center, UChicago, Chicago, IL, USA.
- 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 - 2018 **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 on VR amongst national laboratories.

Invited Talks

- [T.18] Brooks, J., Niedenthal, S. "The History of Scent Technologies: DigiScents' iSmell and TriSenx's Scent Dome at the Turn of the Century." *Digital Olfaction 2021 Annual Meeting*, November 2022 (forthcoming). [URL](#).
- [T.17] "To Believe, Breathe AromaRama". Presented as part of the "Medicine, Science, and Technology" session for the "What is Smell Studies?" workshop, hosted by Prof. William Tullett (ARU) and Ally Louks (Univ. of Cambridge), May 2022.
- [T.16] "To Believe, Breathe AromaRama: Cinema's Aerosol Age". Digital Media Workshop, University of Chicago, May 2022.
- [T.15] Rewriting the Code, University of Illinois at Chicago, December 2021.
- [T.14] "Feeling Touch and Temperature with Chemical Haptics". Haptics Club Podcast, November 2021.
- [T.13] School of the Art Institute of Chicago, hosted by Prof. Tedd Neenan, November 2021.
- [T.12] MIT Media Lab, hosted by Prof. Pattie Maes, November 2021.
- [T.11] "Meet a Nose: Jas Brooks". Institute for Art and Olfaction, moderated by Saskia Wilson-Brown, May 2021. [Recording](#).
- [T.10] Northwestern University, hosted by Prof. Nabil Alshurafa, March 2021.
- [T.09] "Touch, Scent, Temperature - Expanding the Frontiers of Virtual Reality" (panelist). VR/AR Association, moderated by Stephen H. Haliczzer, February 2021.
- [T.08] ACM Chicago CHI Chapter, hosted by Victor Mateevitsi, October 2020.
- [T.07] Aroma Discord, hosted by Chacha Sikes, September 2020.
- [T.06] Dagstuhl Seminar 2020 on "Physiological Interfaces". (Canceled due to COVID-19.)
- [T.05] University of Chicago, hosted by Prof. Nancy Kawalek, May 2019.
- [T.04] School of the Art Institute of Chicago, hosted by Prof. Tedd Neenan, October 2018.
- [T.03] University of Sussex, hosted by Prof. Marianna Obrist, May 2018.
- [T.02] School of the Art Institute of Chicago, hosted by Prof. Brenda Lopez, February 2018.

[T.01] School of the Art Institute of Chicago, hosted by Prof. Brenda Lopez, October 2017.

Workshops

[W.5] "Food as Game Mechanic," Weston Game Lab, University of Chicago, April 2020.
(Canceled due to COVID-19.)

[W.4] "sensing scents," Uncommon Makes '19, University of Chicago, November 2019.

[W.3] "scenting arduinos," Flood's Hall, April 2019.
With: Eleonora Edreva, as part of the Community-Based Olfactory Research Group.

[W.2] "DIY virtual reality peripherals," School of the Art Institute of Chicago, hosted by Prof. Brenda Lopez, October 2017.

[W.1] "ALCF Graduate Scholarship & Fellowship Workshop," Argonne Leadership Computing Facility, July 2017.

Guest Lectures

[L.3] "Activating new senses," University of Chicago, February 2021.

[L.2] "Activating new senses," University of Chicago, February 2020.

[L.1] "Introduction to Virtual Reality," University of Chicago, May 2019.

Selected Press & Exhibitions

Exhibitions

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

2020 *Download my food* in [Fixity Equals Death](#). Hybrid exhibition, Chicago, USA.

2020 *Perfect Melon* at the Altered Festival. Hybrid exhibition, Chicago, USA.

Press

2022/07/31 Stewart, J. "VR Still Stinks Because It Doesn't Smell", *WIRED*. [URL](#).

2022/03/17 Jiang, E. "What Will the Metaverse Smell Like?", *The Slowdown*. [URL](#).

2022/01/27 Gossett, S. "The Metaverse, in Glorious Smell-O-Vision!", *Built In*. [URL](#).

2021/08/19 Radio interview in "Wish You Were Here", *Perfume on the Radio*. [URL](#).

2021/06/09 Radio interview with Julie Rose. "Stereo Smell." *Top of the Mind with Julie Rose*. [URL](#).

- 2021/06/06 Dormehl, L. "Smell-O-Vision: This nose-zapping wearable simulates smell using electricity." *Digital Trends*. [URL](#).
- 2021/05/14 Atwell, C. "Self-Contained Device Lets Users Smell in Stereo." *Hackster.IO*. [URL](#).
- 2021/05/13 Ackerman, E. "Digital Nose Stimulation Enables Smelling in Stereo." *IEEE Spectrum*. [URL](#).
- 2020/12/15 "IAO Announces Accelerator Awardees." *Perfumer & Flavorist*. [URL](#).
- 2020/08/12 Yamashita, Y. "香料噴霧すれば火もまた涼し? 温冷覚を錯覚させる装置、シカゴ大が開発." *ITmedia NEWS*. [URL](#).
- 2020/07/02 N-O-D-E. "Robot Dolphins, Human Technology, 3D Printing Ink, Smart Wheelchairs." *Cyber Dump*, 70. [URL](#).
- 2020/06/30 Dormehl, L. "VR wearable can simulate temperature changes using odorless chemicals." *Digital Trends*. [URL](#).
- 2020/06/26 Ackerman, E. "VR System Hacks Your Nose to Turn Smells Into Temperatures." *IEEE Spectrum*. [URL](#).
- 2020/06/09 "香料により温冷感を感じさせるTemperature Illusions." *Auror Design*. [URL](#).
- 2020/05/24 Baker, H. "University Project Shows Hot And Cold Temperature Change VR Research." *UploadVR*. [URL](#).
- 2020/05/08 "UChicago CS Receives Several Awards, Presents Virtual Papers at CHI 2020." *UChicago CS News*. [URL](#).
- 2020/02/27 Kamp, J. "The 'Wrong Biennale' Seeks to Create the Right Conditions for Digital Art." *Hyperallergic*. [URL](#).
- 2020/04/07 Sula, M. "Join the virtual quest for the perfect melon." *Chicago Reader*. [URL](#).
- 2019/08/29 Searcy, M. "Instrumental: Computer scientist Pedro Lopes integrates technology with anatomy to reimagine the role of 'human' in human-computer interaction." *UChicago Magazine*, 112(3). [URL](#).

References

Prof. Pedro Lopes

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