

Jas Edouard Bordeau Brooks

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Jas Brooks is an Assistant Professor at MIT EECS/CSAIL, where they lead the [Perceptual Engineering Lab](#). They recently completed a Ph.D. in Computer Science at the University of Chicago, 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.

Appointments

2026– **Assistant Professor**, Massachusetts Institute of Technology, Cambridge, US
KDD Career Development Professor in Communications and Technology
Department of Electrical Engineering & Computer Science
Principal Investigator, Computer Science & Artificial Intelligence Laboratory (CSAIL)
Director, [Perceptual Engineering Lab](#)

Education

2025 **Ph.D., Computer Science**, University of Chicago, Chicago, US
Thesis: *Expanding Human and Computer Senses via Perceptual Engineering*
Advisor: Pedro Lopes
Committee: Pattie Maes (MIT), Tanzeem Choudhury (Cornell), 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, fully peer-reviewed venues for technical Human-Computer Interaction (HCI), with acceptance rates of 20–25%. They are considered top-tier in the field (even relative to HCI journals) as Computer Science is a conference-focused discipline. ★ denotes an award.

Fully Refereed Publications

- 2026 [P.15] Aggarwal, A., Woodruff, S., **Brooks, J.**, Kleinberger, R. “BearBubbles: Interactive Olfactory Enrichment to Encourage Foraging in Zoo Animals.” *In Proc. ACM CHI*. doi:10.1145/3772318.3790842
- [P.14] Chien, L., Tanaka, Y., Amin, N., **Brooks, J.**, Lopes, P. “Increasing Input Accuracy of Embodied Devices via Electrical Muscle Stimulation.” *In Proc. ACM CHI*. doi:10.1145/3772318.3791134
- 2025 [P.13] **Brooks, J.**, Kucirkova, N., Spence, C. “How Scratch-and-Sniff Books Encode Smell Across Development.” *Multisensory Research*. doi:10.1163/22134808-bja10176
- [P.12] Choudhary, S., Nith, R., **Brooks, J.**, Ho, Y., Guruvugari, M., Lopes, P. “Adaptive Electrical Muscle Stimulation Improves Muscle Memory.” *In Proc. ACM CHI*. doi:10.1145/3706598.3713676
- [P.11] 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. ACM CHI*. doi:10.1145/3706598.3713964
- 2024 [P.10] **Brooks, J.**, Mazursky, A., Hixon, J., Lopes, P. “Augmented Breathing via Temperature Feedback in the Nose.” *In Proc. ACM UIST*. doi:10.1145/3654777.3676438
- [P.9] Mazursky, A., **Brooks, J.**, Desta, B., Lopes, P. “ThermalGrasp: Enabling Thermal Feedback even while Grasping and Walking.” *In Proc. IEEE VR*. doi:10.1109/VR58804.2024.00056
- [P.8] 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*. doi:10.1177/20416695241257566

- 2023 [P.7] **Brooks, J.**, Amin, N., Lopes, P. "Taste Retargeting via Chemical Taste Modulators." *In Proc. ACM UIST*. doi:10.1145/3586183.3606818 ★ **Jury's Honorable Mention, Best Demonstration.**
- [P.6] **Brooks, J.**, Lopes, P. "Smell & Paste: Low-Fidelity Prototyping for Olfactory Experiences." *In Proc. ACM CHI*. doi:10.1145/3544548.3580680 ★ **Art and Olfaction Award for Experimental Work.**
- 2021 [P.5] **Brooks, J.**, Teng, S., Wen, J., Nith, R., Nishida, J., Lopes, P. "Stereo-Smell via Electrical Trigeminal Stimulation." *In Proc. ACM CHI*. doi:10.1145/3411764.3445300
- [P.4] Lu, J., Liu, Z., **Brooks, J.**, Lopes, P. "Chemical Haptics: Rendering Haptic Sensations via Topical Stimulants." *In Proc. ACM UIST*. doi:10.1145/3472749.3474747
- [P.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. ACM CHI*. doi:10.1145/3411764.3445761 ★ **Best Paper Award (top 1%).**
- [P.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. ACM CHI*. doi:10.1145/3411764.3445454
- 2020 [P.1] **Brooks, J.**, Nagels, S., Lopes, P. "Trigeminal-Based Temperature Illusions." *In Proc. ACM CHI*. doi:10.1145/3313831.3376806 ★ **Best Paper Award (top 1%).**

Other Publications

- 2023 **Brooks, J.** "Chemical Interfaces: New Methods for Interfacing with the Human Senses." *In Proc. ACM UIST*. doi:10.1145/3586182.3616711 (Doctoral Symposium)
- 2022 Lu, J., Liu, Z., **Brooks, J.**, Lopes, P. "Learning to work with chemicals as a haptic technology." *ACM Interactions*, Vol. 29, Iss. 4. doi:10.1145/3542651 (Magazine Article)
- 2021 **Brooks, J.**, Lopes, P. "HC²I: Human-Computer Chemosensory Interfaces." *Association for Chemoreception Sciences (ACheMS) Virtual Meeting*. (Poster)
- 2019 **Brooks, J.** "Promises of the virtual museum." *ACM Crossroads Magazine for Students*. doi:10.1145/3301483 (Magazine Article)

Pre-Prints

- 2026 Wen, Y., Chen, A., Yu, J., **Brooks, J.**, Ishii, H., Liang, P. P. "AromaGen: Interactive Generation of Rich Olfactory Experiences with Multimodal Language Models." *arXiv*. doi:10.48550/arXiv.2604.01650
- 2023 **Brooks, J.**, Hernandez, J., Czerwinski, M., Amores, J. "Affective Air Quality Dataset: Personal Chemical Emissions from Emotional Videos." *arXiv*. doi:10.48550/arXiv.2509.15774

Honors, Awards, & Fellowships

- 2024 **Art and Olfaction Award for Experimental Work** ("Smell and Paste"), Institute for Art and Olfaction.
- 2023 **Siebel Scholar**, Thomas and Stacey Siebel Foundation.
Rising Star in EECS, Georgia Institute of Technology.
Jury's Honorable Mention for Best Demonstration ("Taste Retargeting"), ACM UIST.
- 2022 **Graduate Fellowship**, University of Chicago Media Arts, Data, & Design Center.
Snap Creative Challenge, Snap Inc.
Scientific Award ("Scent Tech at the Turn of the Century" talk), Digital Olfaction Society.
Finalist for Art and Olfaction Award for Experimental Work ("Scent in Cinema" & "Twitch & Sniff Along" series), Institute for Art and Olfaction.
- 2021 **Best Paper Award** ("Increasing Electrical Muscle Stimulation's Dexterity"), ACM CHI.
Innovation by Design, Honorable Mention in Experimental Design ("Stereo-Smell"), Fast Company.
Art & Olfaction Accelerator Program, Institute for Art and Olfaction.
- 2020 **Best Paper Award** ("Trigeminal-based Temperature Illusions"), ACM CHI.
Graduate Council Academic & Professional Funds, University of Chicago Graduate Council.
- 2019 **ASCI Graduate Collaboration Grant**, University of Chicago Arts, Science, & Culture Initiative.
Chicago Awesome Foundation Grant, Chicago Awesome Foundation.

2018 **NSF Graduate Research Fellow**, National Science Foundation.
NSF Travel Award to MoBI conference, National Science Foundation.
Graduate Council Academic & Professional Funds, University of Chicago Graduate Council.

Funding

Grants & Research Funding

2026–27	[G.6]	MIT Research Support Committee	\$90,000
2026–27	[G.5]	MIT ORCD Seed Fund	\$60,000

Selected Student Awards

Includes awards where I actively mentored the student through the application process.

2026	[G.4]	MIT HEALS Biswas Fellowship — Dr. Tai Le	\$360,000
	[G.3]	Wallenberg Foundation & WASP Fellowship — Dr. Baichuan Huang	\$175,000
	[G.2]	Wallenberg Foundation Fellowship — Dr. Peng Kuang	\$175,000
	[G.1]	MIT METEOR Fellowship — Dr. MacKenzie Harnett	\$80,000

Mentoring & Advising

Postdocs

2026–30	Dr. Tai Le, MIT EECS. [web] · [scholar]
2027–29	Baichuan Huang, MIT EECS. [web] · [scholar]
2026–28	Dr. MacKenzie Harnett, MIT EECS. [scholar]
2026–28	Dr. Peng Kuang, MIT EECS. [web] · [scholar]

PhD Students

2026–	Riley Lawson, MIT EECS. [scholar]
2026–	Yuting Tang, MIT EECS. [web] · [scholar]
2026–	Gene Kim, MIT EECS. [web] · [scholar] Co-advised with Prof. Arvind Satyanarayan.
2026–	Alejandro López-Rodríguez, MIT EECS. [web] · [scholar]
2025–	Sol Choi, MIT EECS. [web] · [scholar]

Master's Students

2026	Terry Kim, MIT EECS.
2026	Suk Min Hwang, UC Berkeley HCI.
2025	Hui-Ju Fan, UT Dallas Marketing.
2024	Gordon Yu, Tsinghua University Engineering.
2024	Woosang Kim, University of Electro-Communications Informatics.
2019–20	Jinxuan Wen, University of Chicago Computer Science.
2019	Nitesh Nath, University of Chicago Computer Science.

Undergraduate Students

2024	Janice Hixon, University of Chicago Computer Science.
2023–24	Katherine Waterman, University of Chicago MADD.
2021–23	Noor Amin, University of Chicago MADD & Neuroscience. <i>After:</i> Riot Games.
2022	Beza Desta, University of Chicago Computer Science. <i>After:</i> Princeton University.
2022	Eva McCord, University of Chicago Neuroscience.
2021	Oishee Chakrabarti, University of Chicago Computer Science. <i>After:</i> Deloitte.
2019	Daniel Steinberg, University of Chicago Computer Science. <i>After:</i> Accenture.

Invited Talks & Panels

Panels

- 2024** [Pa.1] Panelist, “Re-conceptualizing the experience of architecture as tangible object,” AIS Week.
- 2023** [Pa.2] Panelist and lead co-organizer, “Third Wave or Winter? The Past and Future of Smell in HCI,” ACM CHI — with Dr. Jofish Kaye (Elevance Health), Prof. Marianna Obrist (UCL), Dr. Judith Amores (Microsoft Research), and Prof. Pedro Lopes (UChicago).

Selected Invited Talks

- 2026** [T.38] Lund Univ. (SE), hosted by Profs. Emma Söderberg & Amir Aminifar
 [T.37] Malmö Univ. (SE), hosted by Prof. Simon Niedenthal
 [T.36] Harvard Univ. GSD (US), hosted by Prof. Allen Sayegh
- 2025** [T.35] Univ. of California San Diego (US), hosted by Prof. Ryan Kastner
 [T.34] MIT CSAIL (US), hosted by Prof. David Karger
 [T.33] Northwestern Univ. (US), hosted by Profs. Michael Horn & Karan Ahuja
 [T.32] Columbia Univ. (US), hosted by Prof. Brian Smith
 [T.31] Univ. of New Mexico (US), hosted by Prof. Lydia Tapia
 [T.30] Univ. of Texas Dallas (US), hosted by Prof. Jin Ryong Kim
 [T.29] Smell & AR Symposium (keynote) at GLUON (BE)
- 2024** [T.28] Univ. of Pittsburgh (US), hosted by the Rehab Neural Engineering Labs
 [T.27] Malmö Univ. (SE), hosted by Prof. David Kadish
 [T.26] Cornell Tech (US), hosted by Prof. Tanzeem Choudhury
 [T.24] Harvard Univ. GSD (US), hosted by Prof. Allen Sayegh
- 2023** [T.23] MIT Media Lab (US), hosted by Prof. Pattie Maes
 [T.22] Odeuropa Smell Culture Fair (NL), hosted by Prof. Inger Leemans (KNAW)
 [T.21] MO.CA Centro per le Nuove Culture (IT), hosted by curator Elena Giulia Abbiatici
 [T.20] Odeuropa (EU/Virtual), hosted by Prof. William Tullett (Univ. of York)
- 2022** [T.19] Smart Haptics 2022 (US) — industry conference
 [T.18] Digital Olfaction Society (JP), with Prof. Simon Niedenthal
 [T.17] Anglia Ruskin Univ. & Univ. of Cambridge (UK), hosted by Prof. William Tullett and Ally Louks
- 2021** [T.12] MIT Media Lab (US), hosted by Prof. Pattie Maes
 [T.10] Northwestern Univ. (US), hosted by Profs. Nabil Alshurafa & Josiah Hester
 [T.9] Rewriting the Code at the Univ. of Illinois at Chicago (US)
- 2020** [T.6] Dagstuhl Seminar (DE) on “Physiological Interfaces” (Canceled due to COVID-19)
- 2018** [T.2] Univ. of Sussex (UK), hosted by Prof. Marianna Obrist

Professional Service

Grant Review

- 2026** [GP.1] NSF Panel

Program Committee (Associate Chair or Editor)

- 2026** [PC.21] ACM CHI Papers
 [PC.20] ACM UIST Papers
 [PC.19] ACM DIS Papers
 [PC.18] ACM TEI Papers
 [PC.17] ACM C&C Papers

	[PC.16]	Haptics Symposium Papers
2024	[PC.15]	ACM CHI Papers
	[PC.14]	ACM UIST Papers
	[PC.13]	ACM DIS Papers
	[PC.12]	ACM TEI Pictorials
2023	[PC.11]	ACM DIS Papers
	[PC.10]	ACM TEI Papers
	[PC.9]	MUM Papers
	[PC.8]	ACM CHI Late-Breaking Work
2022	[PC.7]	ACM UIST Papers
	[PC.6]	ACM CHI Late-Breaking Work
	[PC.5]	ACM TEI Work-In-Progress
2021	[PC.4]	ACM CHI Late-Breaking Work
	[PC.3]	ACM TEI Work-In-Progress
2020	[PC.2]	ACM CHI Late-Breaking Work

Organizing Committee

2026	[OC.7]	ACM CHI, Technical Program Chairs (TPC) Assistant
	[OC.6]	ACM TEI, Student Design Challenge (SDC) Chair
2021	[OC.5]	ACM AHs, Social Media Chair
	[OC.4]	SIGCHI Operations Committee, Member
	[OC.3]	Institute of Food Technologists Student Association, Membership Engagement Committee Member
2020	[OC.2]	Institute of Food Technologists Student Association, Non-Affiliated Members Committee Member
2019	[OC.1]	ACM UIST, Video Chair

Workshops, Symposia, & Meet-ups Organized

2025	[W.5]	Lead Co-organizer, ACM UIST “Everyday Perceptual and Physiological Augmentation” Workshop
	[W.4]	Lead Co-organizer, ACM CHI “Smell, Taste, & Temperature Interfaces” (STT) Workshop
2021	[W.3]	Lead Co-organizer, ACM CHI “Smell, Taste, & Temperature Interfaces” (STT) Workshop
	[W.2]	Co-organizer, ACM UIST Haptics Social Meet-up
2020	[W.1]	Lead Co-organizer, “Smell, Taste, & Temperature Interfaces” (STT) Symposium (Independent)

Session Chair

2026	[SC.9]	ACM CHI “Perception & Cognition in Data Visualization”
	[SC.8]	ACM TEI “Assistive Tech & Body”
2024	[SC.7]	ACM CHI “Flavor & Food Interactions”
	[SC.6]	ACM UIST “Body as the Interface”
2023	[SC.5]	ACM CHI “VR/AR/XR Play Experiences”
2022	[SC.4]	ACM CHI “Mouth-based Interaction”
	[SC.3]	ACM UIST “Mind & Body”
2021	[SC.2]	ACM UIST “Illustration & Information Management”
	[SC.1]	ECRO “Chemosenses Beyond Science”

Peer Reviewing

Since 2018, regularly reviewing for leading conferences and journals (over 300 reviews), including ACM CHI, UIST, DIS, TEI, CSCW, IMWUT, IUI, IMX, VRST, AHs, MUM, MobileHCI, ISS; Haptics Symposium; SIGGRAPH Asia; IEEE VR, WHC, Access; Frontiers in VR; IHJCS; TOCHI; TOHRI; THMS; Vernon Press.

Special recognitions (28) for outstanding paper reviews: ACM CHI (6), ACM UIST (9), IEEE WHC (1), ACM DIS (9), and ACM C&C (3).

Teaching & Prior Experience

Teaching

2018 **Lecturer (Instructor of Record)**, Virtual Reality (ATS 4135), School of the Art Institute of Chicago
Designed and taught a graduate art studio course on virtual reality (14 students; 6 hrs/week) integrating theory and practice, plus an optional weekly introduction to programming.

Teaching Assistant

2020–25 **Teaching Assistant**, Introduction to Human-Computer Interaction (CMSC 20300), University of Chicago
Instructor of Record: Prof. Pedro Lopes.
Designed the major project assignment and Unity template for HCI design (laptop + Oculus Quest 2); 100+ students built interfaces for a VR diving simulation. Authored an optional interactive-haptics assignment.

2019 **Teaching Assistant**, Engineering Interactive Devices (CMSC 23220), University of Chicago
Instructor of Record: Prof. Pedro Lopes.
Designed a lecture and problem set introducing Unity for VR; 35 students built a complete VR experience (visuals, haptics, wireless microcontroller link) in one week.

Research & Professional

2018–25 **Graduate Research Assistant**, Human-Computer Integration Lab, University of Chicago, Chicago, US
Advisor: Prof. Pedro Lopes

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

2016–18 **Associate Software Developer**, Leadership Computing Facility, Argonne National Laboratory, Lemont, US
Advisors: Joseph Insley, Silvio Rizzi.

Selected Press

2024 [Pr.18] “Could scented books encourage more kids to read?”, *Science Norway*.

2023 [Pr.17] “Finally, the Scratch-and-Sniff Cassette Tapes You Crave Are Here”, *Hackster.IO*.

2022 [Pr.16] “VR Still Stinks Because It Doesn’t Smell”, *WIRED*.
[Pr.15] “The Metaverse, in Glorious Smell-O-Vision!”, *Built In*.

2021 [Pr.7] “Smell-O-Vision: nose-zapping wearable simulates smell,” *Digital Trends*.
[Pr.6] “Self-Contained Device Lets Users Smell in Stereo,” *Hackster.IO*.
[Pr.5] “Digital Nose Stimulation Enables Smelling in Stereo,” *IEEE Spectrum*.

2020 [Pr.2] “VR wearable can simulate temperature changes using chemicals,” *Digital Trends*.
[Pr.1] “VR System Hacks Your Nose to Turn Smells Into Temperatures,” *IEEE Spectrum*.