

Romain Nith

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Research interests

Human-computer interaction (HCI), haptics, force feedback, wearables, virtual/augmented reality (VR/AR)

Education

University of Chicago , Chicago, U.S. Ph.D., Computer Science <u>Advisor</u> : Prof. Pedro Lopes	2023 – Current
University of Chicago , Chicago, U.S. M.S., Computer Science <u>Advisor</u> : Prof. Pedro Lopes	2020 – 2023
McGill University , Montreal, Canada B.Eng., Computer Engineering	2013 – 2019

Publications

- Adaptive Electrical Muscle Stimulation Improves Muscle Memory
Siya Choudhary*, **Romain Nith***, Yun Ho*, Jas Brooks, Mithil Guruvugari, Pedro Lopes
ACM CHI 2025 Paper
- SplitBody: Reducing Mental Workload while Multitasking via Muscle Stimulation
Romain Nith, Yun Ho Pedro Lopes
ACM CHI 2024 Paper– **Best Paper Award** (top 1%)
- ecoEDA: Recycling E-waste During Electronics Design
Jasmine Lu, Beza Desta, K.D. Wu, **Romain Nith**, Joyce Passananti and Pedro Lopes
ACM UIST 2023 Paper– **Best Paper Honorable Mention Award**
- JumpMod: Haptic Backpack that Modifies Users' Perceived Jump
Romain Nith, Jacob Serfaty, Samuel Shatzkin, Alan Shen and Pedro Lopes
ACM CHI 2023 Paper
- DigituSync: A Dual-User Passive Exoskeleton Glove That Adaptively Shares Hand Gestures
Jun Nishida, Yudai Tanaka, **Romain Nith**, Pedro Lopes
ACM UIST 2022 Paper
- DextrEMS: Increasing Dexterity in Electrical Muscle Stimulation by Combining it with Brakes
Romain Nith, Shan-Yuan Teng, Pengyu Li, Yujie Tao, Pedro Lopes
ACM UIST 2021 Paper – **Best Demo Award (people's choice)**
Guinness World Record for *Most Precise Bionic Hand Controller* in 2021
- Touch&Fold: A Foldable Haptic Actuator for Rendering Touch in Mixed Reality
Shan-Yuan Teng, Pengyu Li, **Romain Nith**, Joshua Fonseca, Pedro Lopes
ACM CHI 2021 Paper – **Best Paper Honorable Mention Award** (top 5%)
- MagnetIO: Passive yet Interactive Soft Haptic Patches Anywhere
Alex Mazursky, Shan-Yuan Teng, **Romain Nith**, Pedro Lopes
ACM CHI 2021 Paper
- Stereo-Smell via Electrical Trigeminal Stimulation
Jas Brooks, Shan-Yuan Teng, Jingxuan Wen, **Romain Nith**, Jun Nishida, Pedro Lopes
ACM CHI 2021 Paper

A stretchable and strain-unperturbed pressure sensor for motion interference-free tactile monitoring on skins
Qi Su, Qiang Zou, Yang Li, Yuzhen Chen, Shan-Yuan Teng, Jane T Kelleher, **Romain Nith**, Ping Cheng, Nan Li,
Wei Liu, Shilei Dai, Youdi Liu, Alex Mazursky, Jie Xu, Lihua Jin, Pedro Lopes, Sihong Wang
Science Advances 2021

Demonstrations and extended abstracts

Adaptive Electrical Muscle Stimulation Improves Muscle Memory
Siya Choudhary*, **Romain Nith***, Yun Ho*, Jas Brooks, Mithil Guruvugari, Pedro Lopes
ACM CHI 2025 Interactivity

SplitBody: Reducing Mental Workload while Multitasking via Muscle Stimulation.
Romain Nith, Yun Ho Pedro Lopes
ACM CHI 2024 Interactivity

Demonstrating ecoEDA: Recycling E-waste During Electronics Design
Jasmine Lu, Beza Desta, K.D. Wu, **Romain Nith**, Joyce Passananti and Pedro Lopes
ACM UIST 2023

Demonstrating JumpMod: Haptic Backpack that Modifies Users' Perceived Jump
Romain Nith, Jacob Serfaty, Samuel Shatzkin, Alan Shen and Pedro Lopes
SIGGRAPH 2023 and ACM CHI 2023

Demonstrating the Integration of Real-World Distractions in Virtual Reality
Yujie Tao, **Romain Nith**, Pedro Lopes
ACM CHI 2022 Interactivity

Demonstrating DextrEMS: Increasing Dexterity in Electrical Muscle Stimulation by Combining it with Brakes
Romain Nith, Shan-Yuan Teng, Pengyu Li, Yujie Tao, Pedro Lopes
ACM UIST 2021 Demo (virtual) – **Best Demo Award (people's choice)**

Falconer: A Tethered Aerial Companion for Enhancing Personal Space
Romain Nith, Jun Rekimoto
IEEE VR 2019 Workshop and CHI HDi 2019 Workshop

Research and work experience

Human Computer Integration Lab – University of Chicago Research Assistant in HCI and Teaching Assistant <u>Advisor</u> : Prof. Pedro Lopes	Sept 2020 – Current Chicago, USA
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Reality-Lab Research – Meta Haptics Research Scientist Intern	June – Dec 2024 Redmond, USA
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TMW Center for Early Learning + Public Health Part-time Research Assistant	Oct 2020 – Jun2024 Chicago, USA
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Human Computer Integration Lab – University of Chicago Visiting Research Assistant in HCI <u>Advisor</u> : Prof. Pedro Lopes	June – Aug 2019 Chicago, USA
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Sony Computer Science Laboratories Research Assistant Intern in HCI <u>Advisor</u> : Prof. Jun Rekimoto	May – Aug 2018 Tokyo, Japan
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Shared Reality Lab – McGill University Senior engineering research project <u>Advisor</u> : Prof. Jeremy Cooperstock, in collaboration with Prof. Pedro Lopes	Jan – Dec 2018 Montreal, Canada
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Sony Computer Science Laboratories

Research Assistant Intern in HCI

Advisor: Prof. Jun Rekimoto

May – Aug 2017

Tokyo, Japan

Teaching and mentoring

Teaching assistant	Engineering Interactive Electronics onto PCB (CMSC 23230/33230)	Spring 2025
	Department of Computer Science, The University of Chicago <u>Instructor:</u> Prof. Pedro Lopes	
	Engineering Interactive Electronics onto PCB (CMSC 23230/33230)	Spring 2024
	Department of Computer Science, The University of Chicago <u>Instructor:</u> Prof. Pedro Lopes	
	Inventing, Engineering and Understanding Interactive Devices (CMSC 23220)	Winter 2022
	Department of Computer Science, The University of Chicago <u>Instructor:</u> Prof. Pedro Lopes <u>Noticeable contribution:</u> Designed major assignments, including pong game with microcontroller communicating wirelessly with opponent, self-balancing ball on a rail using PID controller. Had 20 undergraduate students design and build their first wearable device.	
	Engineering Interactive Electronics onto PCB (CMSC 23230/33230)	Spring 2021
	Department of Computer Science, The University of Chicago <u>Instructor:</u> Prof. Pedro Lopes <u>Noticeable contribution:</u> Co-designed entire class with instructor from the ground up, including lecture material and assignments. Had 20 undergraduate and graduate students design and make their first printed circuit boards. Class was taught virtually.	
	Introduction to Human Computer Interaction (CMSC 20300)	Fall 2020
	Department of Computer Science, The University of Chicago <u>Instructor:</u> Prof. Pedro Lopes	
Graduate students	Pengyu Li (U'Chicago, '19-'20)	Mithil Guru (UIUC, '24-)
	Yujie Tao (U'Chicago, '20)	Peili Jiang (U'Chicago, '25)
	Alan Shen (U'Chicago, '21-'23)	Jingfeng Pan (U'Chicago, '25)
	Philip Chmielowiec (U'Chicago, '24)	Nandini Gandhi (U'Chicago, '25)
	Micheal Berg (U'Chicago, '24)	
Undergraduate students	Jersey Fonseca (U'Chicago, '20)	Yun Ho (NTU, '23-'24)
	Sam Shatzkin (U'Chicago, '21-'22)	Alicia Chun (U'Chicago, '24)
	Jacob Serfaty (U'Chicago, '22-'24)	Gus Waldspurger (U'Chicago, '24).
High school students	Siya Choudhary (James B. Conant, '23-'24)	
	Hunter Mathews (IMSA, '23-'24)	

Services

Program Committee	ACM CHI Late-Breaking Work AC (2023) ACM CHI Late-Breaking Work AC (2024) ACM Augmented Humans Paper AC (2025)
Paper Reviewer	ACM CHI, UIST, DIS, ISWC, TEI, SUI, SIGGRAPH, SIGGRAPH ASIA
Student volunteer	ACM UIST 2021 (virtual)

Extra-curricular activities

McGill Formula Racing Team FSAE	Montreal, Canada
(SAE International Formula Program: Engineering design competition consisting of designing, building, and racing a formula race car)	
Electronics Advisor of an electric racing car	2018 – 2019
- Designed custom CAN node PCB and software to facilitate data acquisition and transfer across devices on the car - Lead team strategies for dynamic events at competitions such as setup, battery management, driver order - Lead testing sessions for car's durability and implementation of new features	
Electronics Subteam Leader of an electric and a combustion racing car	2016 – 2018
- Lead and managed the electronics subsystem as well as took part in the upper-level decisions of the team - Collaborated with other subsystems to meet requirements and improve performance - Mentored new members by teaching design and manufacturing skills	
Electronics Subteam Member of a combustion racing car	2013 – 2016
Designed and manufactured complete electronic system with custom built motorsport-grade electronic harness and PCBs with NX (CAD) and Altium (PCB)	