Brenna Li

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Summary

I am a Postdoctoral Scholar at Stanford University working at the intersection of Human-Computer Interaction (HCI) and Health Informatics. My research focuses on understanding how intelligent conversational systems can be designed, implemented and evaluated in real-world clinical settings to enhance patient-provider communication and optimize clinical workflows. My long-term vision is to create a seamless, personalized healthcare experience in which patients and providers are supported at every stage of their clinical journey and workflow. I am passionate about finding solutions to enhance existing interactions, ensuring that technology empowers rather than diminishes human connections.

Education

Stanford University– Postdoctoral Scholar Present

- Understanding and evaluating clinicians' use of conversational agents for information retrieval, documentation, and collaborative decision making.
- Designing workflow-aligned guardrails to enable safe, efficient, and human-centered deployment of agentic tools in clinical practice.
- Advisor: Professor Nigam Shah

University of Toronto – PhD. in Computer Science 10/2025

- *Enhancing Patient-Centered Care: Examining the Design and Evaluation of Conversational Agents for Clinical Pre-Consultation*
- Advisors: Professor Khai Truong and Professor Alex Mariakakis

University of Toronto – MSc. in Computer Science 06/2020

- *Understanding the impact of ambient digital scribes on physicians' workflows*
- Advisor: Professor Khai Truong

University of British Columbia – BSc. in Integrated Sciences 06/2017

- Computer Science, Neuroscience, and Human Physiology
- Advisor: Professor Paul Pavlidis

Work Experience

Google – Health AI Student Researcher 07/2023 - 12/2023

- Developed user-based evaluation metrics of medical large language models.
- Performed qualitative and quantitative analysis comparing patient-bot and patient-doctor conversations.
- First-authored a CHI Late-breaking-work submission.

University of Toronto – Graduate Application Reviewer 10/2022 – 02/2023

- Reviewed, ranked and assessed incoming graduate student applications for the computer science department.

Samsung AI Research – Research Intern 06/2022 – 12/2022

- Studied machine and human comprehension of narrative image descriptions to inform design improvements for the Gallery application.

BC Cancer Agency – Computational Biologist (Developer) 09/2017 – 09/2018

- Developed features to track samples for the Laboratory Information Management Systems team using Python, SQL, and R.
- Developed a central authentication service for all web services at the Genome Sci-

ence Centre (GSC) in javascript using expressJS.

Awards and Recognition

CHI Doctoral Colloquium 2024
- One of twenty-one students (19% acceptance) selected to present my thesis topic.

Natural Science and Engineering Research Council of Canada (NSERC) – CGS D 2022
- National scholarship awarded to top 10% PhD applicants ($105,000 over 36 months)

Ontario Graduate Scholarship (OGS) 2022
- Province of Ontario scholarship – awarded but declined ($15,000)

Mitacs Accelerate 2019
- Industry partnership research award ($15,000)

UBC Undergraduate Research Competition 2016
- Best poster and undergraduate thesis award ($100)

Natural Sciences and Engineering Research Council of Canada (NSERC) - USRA 2015
- Undergraduate Student Research Award ($4500)

IEEE World Haptics Conference 2015 Chicago 2015
- 1st place in the student innovation challenge ($1500)

Presentations, Invited Talks and Demos

Tsinghua University – Guest speaker May 2025
University of Zurich School of Information – Guest speaker Jan 2025
Google Research Health AI Group – Guest speaker July 2024
Simon Fraser University ixlab – Guest speaker March 2024
University of British Columbia eDapt Group – Guest speaker March 2024
University of Toronto ARIA Conference – Demo presenter November 2023
Telus Health Medical Board – Guest speaker December 2021
CRA-Graduate Student Women's Workshop – Poster presenter April 2021

Publications – Papers in Progress

1. Katherine Jelich, Nina Huang, Khai Truong, Alex Mariakakis, and **Brenna Li**. *AI scribes in practice – understanding how general practitioners incorporate the technology into their workflow.* (In preparation for CHI'27)
2. Nina Huang, Katherine Jelich, Khai Truong, Alex Mariakakis, and **Brenna Li**. *The ambient listener in the room – understanding the impact of AI scribes on patient-physician relationships*. (In preparation for JAMA)
3. Jeb Thomas, Khai Truong, Alex Mariakakis, and **Brenna Li**. *Bridging the Communication gap with Pre-consultation Summaries - Design Workshop with Patients and Physicians Understanding their Consultation Needs.* (In preparation for CHI'27)

Publications – Full Papers

1. **Brenna Li**, Liam Bakar, Anna Kirik, Jiaqi Guo, Khai Truong and Alex Mariakakis. *Digitizing the Clinical Pre-Consultation Experience: Impacts and Design Recommendations*. In Proceedings of the 2026 ACM Conference on Human Factors in Computing Systems (CHI). Article 1079, April 2026. (Acceptance rate 25%)
2. Tao Tu, Mike Schaekermann, Anil Palepu, Khaled Saab, Jan Freyberg, Ryutaro Tanno, Amy Wang, **Brenna Li**, Mohamed Amin, Yong Cheng, et al. 2025. *Towards conversational diagnostic artificial intelligence.* Nature (2025), 1–9. (Cited over 300 times)
3. **Brenna Li**, Saba Tauseef, Khai Truong, Alex Mariakakis. *A Comparative Analysis of Information Gathering by Chatbots, Questionnaires, and Humans in Clinical Pre-Consultation*. In Proceedings of the 2025 ACM Conference on Human Factors in Computing Systems (CHI). Article 639, April 2025. (Acceptance rate 25%)
4. Georgianna Lin, **Brenna Li**, Jin Yi Li, Chloe Zhao, Khai Truong, and Alexander Mariakakis. *Users' Perspectives on*

Multimodal Menstrual Tracking Using Consumer Health Devices. In Proceedings of the ACM Interaction Mobile Wearable Ubiquitous Technology (IMWUT). Article 116, August 2024.

5. **Brenna Li**, Ofek Gross, Noah Crampton, Mamta Kapoor, Saba Tauseef, Mohit Jain, Khai N. Truong, and Alex Mariakakis. *Beyond the Waiting Room: Patient's Perspectives on the Conversational Nuances of Pre-Consultation Chatbots*. In Proceedings of the 2024 ACM Conference on Human Factors in Computing Systems (CHI). Article 438, May 2024. (Acceptance rate 26%)
6. Georgianna Lin, Pierre-William Lessard, Minh Ngoc Le, **Brenna Li**, Fanny Chevalier, Khai N. Truong, and Alex Mariakakis. *Functional Design Requirements to Facilitate Menstrual Health Data Exploration*. In Proceedings of the 2024 ACM Conference on Human Factors in Computing Systems (CHI). Article 687, May 2024.(Acceptance rate 26%)
7. **Brenna Li**, Tetyana Skoropad, Puneet Seth, Mohit Jain, Khai Truong, and Alex Mariakakis. *Constraints and Workarounds to Support Clinical Consultations in Synchronous Text-based Platforms*. In Proceedings of the 2023 ACM Conference on Human Factors in Computing Systems (CHI). Article 342, April 2023. (Acceptance rate 24%)
8. **Brenna Li**, Noah Crampton, Sophie Yu, Simon Tian and Khai Truong. *Automating Clinical Documentation with Digital Scribes: Understanding the Impact on Physicians*. In Proceedings of the 2021 SIGCHI Conference on Human Factors in Computing Systems (CHI). Article 658, May 2021. (**Best Paper Honorable Mention**, Top 5%)
9. Dmitry Tebaykin, Shreejoy Tripathy, Nathalie Binnion, **Brenna Li**, Richard C. Gerkin, and Paul Pavlidis. *Modeling sources of interlaboratory variability in electrophysiological properties of mammalian neurons.* Journal of neurophysiology Volume 119, Article 4. 2018.
10. Ogan B. Mancarci, Lilah Toker, Shreejoy Tripathy,**Brenna Li**, Rocco, B.R., Sibille, E.L., Pavlidis, P. *Cross-laboratory analysis of brain cell type transcriptomes with applications to interpretation of bulk tissue data*. eNeuro. 2017.
11. Shreejoy Tripathy, Lilah Toker, **Brenna Li**, Cindy Crichlow, Dmitry Tebaykin, Ogan B. Mancarci, and Paul Pavlidis. *Transcriptomic correlates of neuron electrophysiological diversity.* PLos Computational Biology. Volume 13, Article 10. 2017.

Publications - Short Papers and Extended Abstracts

1. Nina Huang[1], Katherine Huang[1], **Brenna Li**, Khai Truong, and Alex Mariakakis *Physicians' lived experiences with AI Scribes.* In CHI '25 Workshop on Envisioning the Future of Interactive Health, Yokohama, Japan 2025.
2. **Brenna Li**. *Designing Conversational Agents to Facilitate Patient-Physician Communication and Clinical Consultation.* In Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems (CHI EA'24). May 2024.
3. **Brenna Li**, Amy Wang, Patricia Strachan, … Christopher Semturs, and Mike Schaekermann. *Conversational AI in health: Design considerations from a Wizard-of-Oz dermatology case study with users, clinicians and a medical LLM*. In Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems (CHI EA'24). May 2024.
4. Yuyang Liu, Jienan Yao, **Brenna Li**, Zhen Gou, Chloe Pou-Prom, Joshua Murray, Amol Verma, Muhammad Mamdani and Marzyeh Ghassemi. *Visualization of deep models on nursing notes and physiological data for predicting health outcomes through temporal sliding windows.* In Explainable AI in Healthcare and Medicine. Pages 115-129. 2021.
5. Lillio Mok, **Brenna Li**, Stephen Gou and, Joseph J. Williams. *Understanding and Correcting Inaccurate Calorie Estimations on Amazon Mechanical Turk.* In Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems (CHI EA'19). May 2019.

Teaching Experience

Teaching Assistant for CSC 318 – Introduction to User-centered Design — 2018 – Present

- Served as Teaching Assistant for over 10 terms, holding roles as Course TA, Lead TA, and Course Prep TA.
- Course TA: Supervised a class of over 30 students, managing up to 6 project groups per term. Guided each group through the iterative design process, conducted in-class tutorials, provided detailed project feedback, and graded assignments.
- Lead TA: Supported the course instructor in preparing materials, revamped the grading rubric to enhance consistency among TAs, and led tutorials and grading sessions to train and assist other TAs.

- Course Prep TA: Dedicated a summer term to developing new presentation materials, creating sample projects, and designing assignments to support a flipped classroom model.

Teaching Assistant for CSC 207 – Software Design 2019 – 2021

- Served as Teaching Assistant for 4 terms, taking on roles as Course TA and Lead TA.
- Course TA: Conducted weekly tutorials to support students in individual assignments and guided project groups in software design principles. Reviewed and graded group projects, supervised exams, and marked assignments.
- Lead TA: Assisted the course instructor with material preparation and led tutorial and grading sessions to train and support other TAs.

Teaching Assistant for CSC 108 – Introduction to Programming with Python 2019

- Course TA: Held weekly office hours to support students with assignment completion, actively engaged in answering questions on Piazza, and graded assignments and exams.

Mentoring Experience

Current Mentees

- Jeb Thomas – UofT Computer Science PhD Student
- Katherine Jelich – UofT Computer Science MSc Student
- Nina Huang – UofT BSc., Double Major in Computer Science & Psychology Student

Past Mentees

- Saba Tuseef – Now: Medical Resident at Toronto Metropolitan University
- Liam Bakar – Now: MSc., Computer Science at University of Washington
- Jiaqi Guo – Now: MSc., Computer Science at Mcgill University
- Ofek Gross – Now: MScAC in Health AI at University of Toronto
- Mitsuka Kyokara – Now: UofT BSc., Computer Science Specialist
- Mamta Kapoor - Now: Medical Resident at Northern Ontario School of Medicine
- Anna Kirik – Now Product Designer at Geolab
- Tetiana Skoropad – Now Front-end Developer for Cuberic
- Sophia (Yu) Xia – Now: Data Analytic Manager at Yorkville University
- Simon (Xirong) Tian – Now: Data Analyst at Jitech

Community Involvement

Academic

- Organizing Committee (Tutorial Co-Chair) for ACM UbiComp Conference 2026 - Present
- Associate Chair (ie, Associate Editor) for ACM CHI Health Subcommittee 2025 - Present
- Associate Chair (ie, Associate Editor) for ACM CUI
- Reviewer for ACM CHI, ACM IMWUT, ACM CSCW, NPJ Digital Medicine 2021 - Present

External Service

- Graduate Application Assistance Program (GAAP) – Mentor 2022 - 2023
- Prime Mentors of Canada – Mentored students in the TDSB on conducting research 2021 - 2022
- UofT Computer Science Graduate Student Society – Social Coordinator 2018 - 2022
- UofT DGP Social – Social Coordinator 2018 - 2021
- HerCodeCamp, coding workshop for high school students - Director of Finance 2019 - 2021
- UBC Korle-Bu Neuroscience Club – President 2013 - 2017