A Biographical Information

1 Personal

Alex Mariakakis
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Personal webpage: http://mariakakis.github.io/
Lab webpage: https://chai.cs.toronto.edu/

2 Degrees

Ph.D.: Computer Science & Engineering, University of Washington, 2019
Thesis: "Making Medical Assessments Available and Objective Using Smartphone Sensors"
Supervisors: Shwetak Patel, Jacob O. Wobbrock

M.S.: Computer Science & Engineering, University of Washington, 2015

B.S.E.: Electrical & Computer Engineering, Duke University, 2013

B.S.: Computer Science, Duke University, 2013

3 Employment

Aug 2020–present: Assistant Professor in Department of Computer Science, Full Membership in School of Graduate Studies (SGS), University of Toronto

4 Honours

Oct 2024: Distinguished Paper Award from the Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)

Oct 2024: Best Workshop Paper at the EarComp Workshop within the ACM International Conference on Pervasive and Ubiquitous Computing (UbiComp)

Apr 2024: Two Honorable Mention Paper Awards at the ACM Conference on Human Factors in Computing Systems (CHI)

Apr 2023: Best Paper Award at the ACM Conference on Human Factors in Computing Systems (CHI)

Jul 2021: Best Paper Award at the ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS)

Sep 2020: Best Paper Runner-Up Award from IEEE Pervasive Computing

Apr 2019: Best Paper Finalist at the IEEE International Conference on Radio-Frequency Identification (RFID)

Sep 2018: Gaetano Borriello Outstanding Student Award at the ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)

Oct 2015: Honorable Mention Award at the ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)

5 Professional Affiliations and Activities

Memberships

2025–present: Education Faculty Affiliate, Temerty Centre for Artificial Intelligence Research and Education in Medicine (T-CAIREM)

2025–present: Affiliate Scientist, KITE, University Health Network

2023–present: Member, TRANSFORM HF

2023–present: Member, Institute for Pandemics, University of Toronto

2021–2025: Affiliate Scientist, Techna, University Health Network

2023–present: Member, Data Science Institute, University of Toronto

2021–present: Member, Temerty Centre for Artificial Intelligence Research and Education in Medicine (T-CAIREM), University of Toronto

Major Journal Review Activities

2022–2023: Editor for Frontiers in Digital Health Special Issue on Digital Public Health Surveillance

2021–present: Associate Editor for the Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)

Major Conference Review Activities

2022–present: Associate Chair for the ACM Conference on Human Factors in Computing Systems (CHI), Health Subcommittee

2021–2022: Associate Chair for the ACM International Conference on Mobile Human-Computer Interaction (MobileHCI)

2020: Associate Chair for the ACM Conference on Human Factors in Computing Systems (CHI), Interaction Techniques Subcommittee

2019: Associate Chair for the ACM Conference on Human Factors in Computing Systems Late-Breaking Work (CHI LBW)

2019: Associate Chair for the ACM Symposium on User Interface Software and Technology (UIST)

B Academic History

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A Primary Research Endeavors

Accurate, Inclusive, and Accessible Menstrual Tracking: Investigating ways in which wearable sensors can be used to predict menstrual symptoms and cycle timing

Chatbots for Patient-Physician Communication: Generating design recommendations for chatbot services that collect patient information before in-person consultations

Continuous Monitoring of Chronic Obstructive Pulmonary Disease: Leveraging speech analysis, cough detection, and vital sign monitoring to identify heightened COPD symptoms

Accessible Multimodal Blood Pressure Estimation: Exploring how multiple sensor streams gathered across the body can be used to estimate blood pressure noninvasively

B Research Awards (past 5 years)

[G21] *Development of an Artificial Intelligence Core Lab for Electrocardiographic Analysis and to Predict with Long-Term Cardiovascular Outcomes*. JP Bickell Foundation, Medical Research Grant. Aug 2025–Aug 2028. $70,000 CAD. Role: Co-PI

[G20] *Making Oscillometry More Accurate, Reliable, and Accessible for COPD Patients*. Lung Health Foundation, Hope Innovation Research Grant. Jul 2025–Jul 2027. $100,000 CAD. Role: Lead PI

[G19] *Automated Multi-modal Forensic Analysis on Biological Evidence*. University of Toronto, Faculty of Arts & Science Collaborative Research Fund. May 2025–May 2027. $70,000 CAD. Role: Co-PI

[G18] *Health Outpatient Monitoring Evaluation (HOME)*. University of Toronto, Department of Medicine Research Network Seed Funding. Feb 2025–Feb 2027. $100,000 CAD. Role: Co-I

[G17] *Development of Normal Physiological Behaviour Classification Using Multi-modal Biomarker Dataset Towards Machine Learning-Driven Medical Devices*. Mitacs, Accelerate. Jun 2024–Oct 2024. $10,000 CAD. Role: Co-PI

[G16] *Connected, at-Home, Accessible Remote Monitoring in COPD (CHARM-COPD): A Program of Care in COPD that Ensures Digital Health Equity, Improves Continuity of Care, Improves Access to Care, That is Scalable and Enables Data for Discovery*. University Health Network, Alternative Funding Program. Apr 2024–Mar 2026. $186,743 CAD. Role: Co-PI

[G15] *Oscillometry for Remote Clinical Monitoring of Patients with COPD*. Sunnybrook Medical Services, Alternative Funding Program. Mar 2024–Mar 2026. $157,100 CAD. Role: Co-I

[G14] *Chatbots for Patient Intake*. Mitacs, Accelerate International. Jan 2024–Jan 2025. $30,000 CAD. Role: Lead PI

[G13] *Machine-learning-assisted Seizure Annotation User Interface*. Mitacs, Accelerate. Jul 2023–Jan 2024. $12,000 CAD. Role: Co-PI

[G12] *Connected, at-Home, Accessible Remote Monitoring in COPD (CHARM-COPD): a Program of Care in COPD involving Virtual Pulmonary Rehabilitation, Integrated Care and Remote Clinical Monitoring*. AGE-WELL & Canada Frailty Network, Catalyst Funding Program in Healthy Aging. Apr 2023–Apr 2024. $49,177 CAD. Role: Co-PI

[G11] *Can I Trust an AI Chatbot with My Sensitive Health Information? An Exploratory Study on the Impact of Cultural Influence on the Perception and Sharing of Sensitive Health Information with AI Chatbots*. Toronto Metropolitan University, TRSB Research Advancement Grant. Mar 2023–Jul 2025. $15,000 CAD. Role: Co-PI

[G10] *Accessible Blood Pressure Estimation with Earbuds*. TRANSFORM HF, Seed Grant. Feb 2023–Sep 2025. $70,000 CAD. Role: Lead PI

[G9] *Cognitive Assessments in Virtual Reality*. Mitacs, Globalink. Jan 2023–Dec 2023. $12,000 CAD. Role: Lead PI

[G8] *Accessible Women's Health*. Google, Unrestricted Gift. Nov 2022–unrestricted. $266,300 CAD. Role: Lead PI

[G7] *Automatic Seizure Detection, Prediction, and Mitigation Using Minimally Invasive Implantable Bioelectrical Sensors*. Mitacs, Accelerate. May 2022–Aug 2022. $40,000 CAD. Role: Co-PI

[G6] *Capillary Refill Time Measurement Utilizing Mobile Application (CapApp) in Children*. University of Minnesota, Pediatric Device Innovation Consortium. Jan 2022–Apr 2023. $34,621 USD. Role: Co-PI

[G5] *Accessible Women's Health*. Google, Unrestricted Gift. Dec 2021–unrestricted. $200,000 CAD. Role: Lead PI

[G4] *Continuous Passive Sensing for Bayesian Diagnostics in Mobile Health*. University of Toronto, Connaught New Researcher Award. Sep 2021–Sep 2023. $20,000 CAD. Role: Lead PI

[G3] *Earbuds as a Sensing Platform for Physical and Mental Wellbeing*. University of Toronto, Tsinghua University Joint Research Fund. Jul 2021–Jul 2022. $40,000 CAD. Role: Lead PI

[G2] *Continuous Passive Sensing for Bayesian Diagnostics in Mobile Health*. NSERC, Discovery Grant. Apr 2021–Apr 2026. $132,500 CAD. Role: Lead PI

[G1] *Extending the Use of Time-of-Flight Cameras for Mobile Health*. University of Toronto, Mobile AI Innovation Lab. Nov 2020–Nov 2022. $193,000 CAD. Role: Lead PI

C Patents (past 5 years)

[P2] Lynn McGrath, Anthony Law, Randy Bly, Shwetak Patel, **Alex Mariakakis**, and Jacob Baudin. Smartphone-based Digital Pupillometer, 2023

[P1] Shwetak Patel, Chunjong Park, **Alex Mariakakis**, and Matthew Thompson. Computing Devices and Methods

for Peripheral Perfusion Assessment Including Examples Using Smartphones, 2022

C Scholarly and Professional Work

Career Publication Count	
Papers in refereed journals	31
Papers in refereed conferences	29
Papers in refereed workshops	7
Other refereed contributions	9

7 Refereed Publications

A Journal Articles (* = received award recognition)

[J31] Robert Wu, Ronald Chow, Olivia So, Lauren Lapointe-Shaw, **Alex Mariakakis**, and Andrea Gershon. Development of Multivariable Prediction Models for 30-Day Risk of Readmission After COPD Hospital Admission: A Retrospective Cohort Study Using Electronic Medical Record Data from 7 Hospitals. *Studies in Health Technology and Informatics*, 329:992–996, 2025

[J30] Andrea Gershon, **Alex Mariakakis**, Eyal de Lara, Joseph Munn, Maryann Calligan, Daniyal Liaqat, Salaar Liaqat, Junlin Chen, Teresa To, Philip Lam, Andrew Simor, Adrienne Chan, Nisha Andany, Sameer Masood, Nick Daneman, Tiffany Chan, Christopher Graham, Vikram Comondore, Andre de Moulliac, Alice Tu, and Robert Wu. Monitoring People with COVID-19 at Home with the COVIDFree@Home Program: a Feasibility Cohort Study. *JMIR Formative Research*, 2025

[J29] Sejal Bhalla, Deshang Kong, Salaar Liaqat, Daniyal Liaqat, Robert Wu, Andrea Gershon, Eyal de Lara, and **Alex Mariakakis**. Association of Daily Lung Condition in COPD Patients with Wearable Speech and Physiological Data. *Nature Scientific Reports*, 2025

[J28] Georgianna Lin, Minh Ngoc Le, Khai Truong, and **Alex Mariakakis**. The Cognitive Strategies Behind Multimodal Health Sensemaking: A Menstrual Health Tracking Case Study. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, pages 1–27, 2025

[J27] Robert Wu, Jansen Zhou, **Alex Mariakakis**, Eyal de Lara, Jeyani Jeyaparan, and Andrea Gershon. Determining What Patients Admitted with a Chronic Obstructive Pulmonary Disease (COPD) Exacerbation Will Use for Remote Clinical Monitoring: A Patient Engagement Survey. *BMJ Open Respiratory Research*, 12(1), 2025

[J26] Ananya Bhattacharjee, Joseph Jay Williams, Miranda Beltzer, Jonah Meyerhoff, Harsh Kumar, Haochen Song, David C Mohr, **Alex Mariakakis**, and Rachel Kornfield. Investigating the Role of Situational Disruptors in Engagement with Digital Mental Health Tools. *Proceedings of the ACM Computer-Supported Cooperative Work and Social Computing (CSCW)*, 2025

[J25] You Zhi Hu, Max Beggs, Yu Xue, Sinuo Gao, Junyoung Seok, Yawen Xiao, Ziqi Zhou, Yifei Zhou, **Alex Mariakakis**, and Mark Chignell. Are Virtual Forests Just for Relaxation, or Can They Enhance the Benefits of Therapy? *Healthcare*, 13(6):621, 2025

[J24] Antonia Barbaric, Kenneth Christofferson, Susanne M Benseler, Chitra Lalloo, **Alex Mariakakis**, Quynh Pham, Joost F Swart, Rae SM Yeung, and Joseph A Cafazzo. Health recommender systems to facilitate collaborative decision-making in chronic disease management: A scoping review. *Digital Health*, 11:20552076241309386, 2025

[J23] Anthony J Maxin, Bernice G Gulek, Do H Lim, Samuel Kim, Rami Shaibani, Graham M Winston, Lynn B McGrath, **Alex Mariakakis**, Isaac J Abecassis, and Michael R Levitt. Smartphone pupillometry with machine learning differentiates ischemic from hemorrhagic stroke: A pilot study. *Journal of Stroke and Cerebrovascular Diseases*, 34(2):108198, 2025

[J22] Georgianna Lin, Jin Yi Li, Ken Christofferson, Shwetak N Patel, Khai N Truong, and **Alex Mariakakis**. Understanding wrist skin temperature changes to hormone variations across the menstrual cycle. *npj Women's Health*, 2(1):35, 2024

[J21] Dhruv Verma, Ian Ruffolo, David B Lindell, Kiriakos N Kutulakos, and **Alex Mariakakis**. ChromaFlash: Snapshot Hyperspectral Imaging Using Rolling Shutter Cameras. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, 8(3):1–31, 2024

[J20] Georgianna Lin, Brenna Li, Jin Yi Li, Chloe Zhao, Khai Truong, and **Alex Mariakakis**. Users' Perspectives on Multimodal Menstrual Tracking Using Consumer Health Devices. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, 8(3):1–24, 2024

[J19] Anthony J Maxin, Do H Lim, Sophie Kush, Jack Carpenter, Rami Shaibani, Bernice G Gulek, Kimberly G Harmon, **Alex Mariakakis**, Lynn B McGrath, and Michael R Levitt. Smartphone Pupillometry and Machine Learning for Detection of Acute Mild Traumatic Brain Injury: Cohort Study. *JMIR Neurotechnology*, 3(1):e58398, 2024

[J18] Robert Wu, Maryann Calligan, Tanya Son, Harshmeet Rakhra, Eyal de Lara, **Alex Mariakakis**, and Andrea S Gershon. Impressions and Perceptions of a Smartphone and Smartwatch Self-Management Tool for Patients With COPD: A Qualitative Study. *COPD: Journal of Chronic Obstructive Pulmonary Disease*, 21(1):2277158, 2024

[J17] Mohammad Kianpisheh, **Alex Mariakakis**, and Khai N Truong. exHAR: An Interface for Helping Non-Experts Develop and Debug Knowledge-based Human Activity Recognition Systems. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, 8(1):1–30, 2024

[J16] Ananya Bhattacharjee, Pan Chen, Abhijoy Mandal, Anne Hsu, Katie O'Leary, **Alex Mariakakis**, and Joseph Jay Williams. Exploring User Perspectives on Brief Reflective Questioning Activities for Stress Management: Mixed Methods Study. *JMIR Formative Research*, 8(1):e47360, 2024

[J15] Anthony J Maxin, Bernice G Gulek, Chungeun Lee, Do Lim, **Alex Mariakakis**, Michael R Levitt, and Lynn B McGrath. Validation of a Smartphone Pupillometry Application in Diagnosing Severe Traumatic Brain Injury. *Journal of Neurotrauma*, 2023

[J14] Georgianna Lin, Rumsha Siddiqui, Zixiong Lin, Joanna M Blodgett, Shwetak N Patel, Khai N Truong, and **Alex Mariakakis**. Blood glucose variance measured by continuous glucose monitors across the menstrual cycle. *npj Digital Medicine*, 6(1):140, 2023

[J13] Sejal Bhalla, Salaar Liaqat, Robert Wu, Andrea Gershon, Eyal de Lara, and **Alex Mariakakis**. PulmoListener: Continuous Acoustic Monitoring of Chronic Obstructive Pulmonary Disease in the Wild. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, 2023

[J12] Solveig K Sieberts, Henryk Borzymowski, Yuanfang Guan, Yidi Huang, Ayala Matzner, Alex Page, Izhar Bar-Gad, Brett Beaulieu-Jones, Yuval El-Hanani, Jann Goschenhofer, and others. Developing better digital health measures of parkinson's disease using free living data and a crowdsourced data analysis challenge. *PLOS Digital Health*, 2(3):e0000208, 2023

[J11] * Joseph Breda, Mastafa Springston, **Alex Mariakakis**, and Shwetak Patel. FeverPhone: Accessible Core-Body Temperature Sensing for Fever Monitoring Using Commodity Smartphones. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, 7(1):1–23, 2023

[J10] Ananya Bhattacharjee, Jiayu Pang, Angelina Liu, **Alex Mariakakis**, and Joseph Jay Williams. Design Implications for One-Way Text Messaging Services that Support Psychological Wellbeing. *ACM Transactions on Computer-Human Interaction (TOCHI)*, 2022

[J9] Ananya Bhattacharjee, Joseph Jay Williams, Karrie Chou, Justice Tomlinson, Jonah Meyerhoff, **Alex Mariakakis**, and Rachel Kornfield. "I Kind of Bounce off It": Translating Mental Health Principles into Real Life Through Story-Based Text Messages. *Proceedings of the ACM on Human-Computer Interaction*, 6(CSCW2):1–31, 2022

[J8] **Alex Mariakakis**, Ravi Karkar, Shwetak N Patel, Julie A Kientz, James Fogarty, and Sean A Munson. Using Health Concept Surveying to Elicit Usable Evidence: Case Studies of a Novel Evaluation Methodology. *JMIR*

Human Factors, 9(1):e30474, 2022

[J7] Alexandros A Sklavounos, Julian Lamanna, Dimpy Modi, Sidharth Gupta, **Alex Mariakakis**, Jeannie Callum, and Aaron R Wheeler. Digital Microfluidic Hemagglutination Assays for Blood Typing, Donor Compatibility Testing, and Hematocrit Analysis. *Clinical Chemistry*, 67(12):1699–1708, 2021

[J6] Xin Liu, Yuang Li, Josh Fromm, Yuntao Wang, Ziheng Jiang, **Alex Mariakakis**, and Shwetak Patel. SplitSR: An End-to-End Approach to Super-Resolution on Mobile Devices. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, 5(1):1–20, 2021

[J5] Chunjong Park, Hung Ngo, Libby Rose Lavitt, Vincent Karuri, Shiven Bhatt, Peter Lubell-Doughtie, Anuraj H Shankar, Leonard Ndwiga, Victor Osoti, Juliana K Wambua, and others. The Design and Evaluation of a Mobile System for Rapid Diagnostic Test Interpretation. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, 5(1):1–26, 2021

[J4] Victoria Lyon, Monica Zigman Suchsland, Monique Chilver, Nigel Stocks, Barry Lutz, Philip Su, Shawna Cooper, Chunjong Park, Libby Rose Lavitt, **Alex Mariakakis**, and others. Diagnostic accuracy of an app-guided, self-administered test for influenza among individuals presenting to general practice with influenza-like illness: study protocol. *British Medical Journal Open (BMJ Open)*, 10(11):1–8, 2020

[J3] * **Alex Mariakakis**, Edward Wang, Shwetak Patel, and Mayank Goel. Challenges in Realizing Smartphone-Based Health Sensing. *IEEE Pervasive Computing*, 18:1–9, 2019

[J2] **Alex Mariakakis**, Jacob Baudin, Eric Whitmire, Vardhman Mehta, Megan A. Banks, Anthony Law, Lynn McGrath, and Shwetak N. Patel. PupilScreen: Using Smartphones to Assess Traumatic Brain Injury. *Proceedings of the ACM on Interactive, Mobile, Wearable, Ubiquitous Technologies (IMWUT)*, 1(3):1–27, 2017

[J1] **Alex Mariakakis**, Megan A Banks, Lauren Phillipi, Lei Yu, James Taylor, and Shwetak N Patel. BiliScreen: Smartphone-based Scleral Jaundice Monitoring for Liver and Pancreatic Disorders. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, 1(2):1–26, 2017

B Conference Papers (* = received award recognition)

[C29] Kian Kianpisheh, **Alex Mariakakis**, and Khai Truong. SAHARA: Self-supervised Approach for Human Activity Recognition based on Audio Events. In *International Symposium on Wearable Computers (ISWC)*, 2025

[C28] Ananya Bhattacharjee, Sarah Yi Xu, Pranav Rao, Yuchen Zeng, Jonah Meyerhoff, Syed Ishtiaque Ahmed, David C Mohr, Michael Liut, **Alex Mariakakis**, Rachel Kornfield, and others. Perfectly to a Tee: Understanding User Perceptions of Personalized LLM-Enhanced Narrative Interventions. In *Proceedings of the 2025 ACM Designing Interactive Systems Conference*, pages 1387–1416, 2025

[C27] Brenna Li, Saba Tauseef, Khai Truong, and **Alex Mariakakis**. A Comparative Analysis of Information Gathering by Chatbots, Questionnaires, and Humans in Clinical Pre-Consultation. In *Conference on Human Factors in Computing Systems (CHI)*, pages 1–17, 2025

[C26] Sejal Bhalla, Tien Han, Andrea Gershon, Robert Wu, Eyal de Lara, and **Alex Mariakakis**. Phoneme-Aware Acoustic Analysis of Natural Speech for Lung Function Assessment. In *ICASSP 2025-2025 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pages 1–5. IEEE, 2025

[C25] Zeyu Wang, Xiyuxing Zhang, Ruotong Yu, Yuntao Wang, Kenneth Christofferson, Jingru Zhang, **Alex Mariakakis**, and Yuanchun Shi. DreamCatcher: A Wearer-aware Multi-modal Sleep Event Dataset Based on Earables in Non-restrictive Environments. *Advances in Neural Information Processing Systems*, 37:85155–85178, 2024

[C24] Alvin Cao, Ken Christofferson, Parker Ruth, Naveed Rabbani, Yuanchun Shi, **Alex Mariakakis**, Yuntao Wang, and Shwetak Patel. EarSteth: Cardiac Auscultation Audio Reconstruction Using Earbuds. In *International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, pages 1–5, 2024

[C23] Salaar Liaqat, Daniyal Liaqat, Tatiana Son, Tiago Falk, Robert Wu, Andrea Gershon, Eyal de Lara, and **Alex Mariakakis**. Promoting Engagement in Remote Patient Monitoring Using Asynchronous Messaging. In

Conference on Human Factors in Computing Systems (CHI), pages 1–14, 2024

[C22] Georgianna Lin, Pierre-William Lessard, Minh Le, Brenna Li, Fanny Chevalier, Khai Truong, and **Alex Mariakakis**. Functional Design Requirements to Facilitate Menstrual Health Data Exploration. In *Conference on Human Factors in Computing Systems (CHI)*, pages 1–14, 2024

[C21] Brenna Li, Mohit Jain, Khai Truong, and **Alex Mariakakis**. Beyond the Waiting Room: Patient's Perspectives on the Conversational Nuances of Pre-Consultation Chatbots. In *Conference on Human Factors in Computing Systems (CHI)*, pages 1–17, 2024

[C20] Xuefu Dong, Yifei Chen, Yuuki Nishiyama, Kaori Sezaki, Yuntao Wang, Ken Christofferson, and **Alex Mariakakis**. ReHEarSSE: Recognizing Hidden-in-the-Ear Silently Spelled Expressions. In *Conference on Human Factors in Computing Systems (CHI)*, pages 1–15, 2024

[C19] * Ananya Bhattacharjee, Yuchen Zeng, Sarah Yi Xu, Dana Kulzhabayeva, Minyi Ma, Rachel Kornfield, Syed Ishtiaque Ahmed, **Alex Mariakakis**, Mary P Czerwinski, Anastasia Kuzminykh, Michael Liut, and Joseph Jay Williams. Understanding the Role of Large Language Models in Personalizing and Scaffolding Strategies to Combat Academic Procrastination. In *Conference on Human Factors in Computing Systems (CHI)*, pages 1–14, 2024

[C18] * Book Sadprasid, Anne Mei, **Alex Mariakakis**, Scott Bateman, and Fanny Chevalier. Leveraging Idle Games to Incentivize Intermittent and Frequent Practice of Deep Breathing. In *Conference on Human Factors in Computing Systems (CHI)*, pages 1–15, 2024

[C17] * Ananya Bhattacharjee, Joseph Jay Williams, Jonah Meyerhoff, Harsh Kumar, **Alex Mariakakis**, and Rachel Kornfield. Investigating the Role of Context in the Delivery of Text Messages for Supporting Psychological Wellbeing. In *Conference on Human Factors in Computing Systems (CHI)*, pages 1–19, 2023

[C16] 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 *Conference on Human Factors in Computing Systems (CHI)*, pages 1–17, 2023

[C15] Jonathan Strutt, Chunjong Park, Devesh Sarda, Sixuan Wu, Girish Narayanswamy, Matthew Thompson, Lauren Harvey, Rachel Hedstrom, Amy Kodet, Shwetak Patel, and **Alex Mariakakis**. CapApp: Smartphone-based capillary refill index assessment in healthy children. *Frontiers in Biomedical Devices*, 86731:V001T09A009, 2023

[C14] Yi Zhu, **Alex Mariakakis**, Eyal De Lara, and Tiago H Falk. How Generalizable and Interpretable are Speech-based COVID-19 Detection Systems?: A Comparative Analysis and New System Proposal. In *2022 IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI)*, pages 1–5. IEEE, 2022

[C13] * George Hope Chidziwisano, **Alex Mariakakis**, Susan Wyche, Vitumbiko Mafeni, and Esau Gideon Banda. NkhukuProbe: Using a Sensor-Based Technology Probe to Support Poultry Farming Activities in Malawi. In *ACM SIGCAS Conference on Computing and Sustainable Societies*, pages 275–287, 2021

[C12] Chunjong Park, Morelle Arian, Xin Liu, Leon Sasson, Jeffrey Kahn, Shwetak Patel, **Alex Mariakakis**, and Tim Althoff. Online Mobile App Usage as an Indicator of Sleep Behavior and Job Performance. In *The World Wide Web Conference (WWW)*, 2021

[C11] Mingrui Zhang, **Alex Mariakakis**, Jacob Burke, and Jacob O Wobbrock. A Comparative Study of Lexical and Semantic Emoji Suggestion Systems. In *iConference 2021*, pages 1–19, 2021

[C10] **Alex Mariakakis**, Sifang Chen, Bichlien H. Nguyen, Kirsten Bray, Molly Blank, Jonathan Lester, Lauren Ryan, Paul Johns, Gonzalo Ramos, and Asta Roseway. EcoPatches: Maker-Friendly Chemical-Based UV Sensing. In *Proceedings of the ACM Conference on Designing Interactive Systems (DIS)*, pages 1–11, 2020

[C9] Chunjong Park, **Alex Mariakakis**, Jane Yang, Diego Lassala, Yasamba Djiguiba, Youssouf Keita, Hawa Diarra, Beatrice Wasunna, Fatou Fall, Mareme Soda Gaye, Bara Ndiaye, Ari Johnson, Isaac Holeman, and Shwetak Patel. Supporting Smartphone-Based Image Capture of Rapid Diagnostic Tests in Low-Resource Settings. In *Proceedings of the International Conference on Information and Communication Technologies and Development (ICTD)*, pages 1–11, 2020

[C8] Xuhai Xu, Haitian Shi, Xin Yi, Wenjia Liu, Yukang Yan, Yuanchun Shi, **Alex Mariakakis**, Jennifer Mankoff,

and Anind K Dey. EarBuddy: Enabling On-Face Interaction via Wireless Earbuds. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI)*, pages 1–14, 2020

[C7] * Hanchuan Li, Eric Whitmire, **Alex Mariakakis**, Victor Chan, Alanson Sample, and Shwetak Patel. IDCam: Precise Item Identification for AR-Enhanced Object Interactions. *IEEE International Conference on RFID*, pages 1–7, 2019

[C6] **Alex Mariakakis**, Sayna Parsi, Shwetak N. Patel, and Jacob O. Wobbrock. Drunk User Interfaces: Determining Blood Alcohol Level Through Everyday Smartphone Tasks. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI)*, pages 1–13, 2018

[C5] **Alex Mariakakis**, Edward Wang, Shwetak N Patel, and Joanne C Wen. A Smartphone-based System for Assessing Intraocular Pressure. In *International Conference of the Engineering in Medicine and Biology Society (EMBC)*, pages 1–4. IEEE, 2016

[C4] * Mayank Goel, Eric Whitmire, **Alex Mariakakis**, T Scott Saponas, Neel Joshi, Dan Morris, Brian Guenter, Marcel Gavriliu, Gaetano Borriello, and Shwetak N Patel. HyperCam: Hyperspectral Imaging for Ubiquitous Computing Applications. In *Proceedings of the ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)*, pages 1–11, 2015

[C3] Edward J Wang, Tien-Jui Lee, **Alex Mariakakis**, Mayank Goel, Sidhant Gupta, and Shwetak N Patel. Magnifisense: Inferring Device Interaction Using Wrist-worn Passive Magneto-inductive Sensors. In *Proceedings of the ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)*, pages 1–11, 2015

[C2] **Alex Mariakakis**, Mayank Goel, Md Tanvir Islam Aumi, Shwetak N Patel, and Jacob O Wobbrock. SwitchBack: Using Focus and Saccade Tracking to Guide Users' Attention for Mobile Task Resumption. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI)*, pages 1–11, 2015

[C1] **Alex Mariakakis**, Souvik Sen, Jeongkeun Lee, and Kyu-Han Kim. SAIL: Single Access Point-based Indoor Localization. In *Proceedings of the ACM International Conference on Mobile Systems, Applications, and Services (MobiSys)*, pages 1–13, 2014

C Workshop Papers (* = received award recognition)

[W7] Nina Huang, Katherine Jelich, Brenna Li, Khai Truong, and **Alex Mariakakis**. Physicians' Lived Experiences with AI Scribes. In *Envisioning the Future of Interactive Health Workshop, ACM Conference on Human Factors in Computing Systems (CHI)*, pages 1–4, 2025

[W6] * Kenneth Christofferson, Sejal Bhalla, Joseph Cafazzo, and **Alex Mariakakis**. On the Production and Measurement of Cardiac Sounds in the Ear Canal. In *International Workshop on Earable Computing (EarComp), ACM International Joint Conference on Pervasive and Ubiquitous Computing*, pages 685–690, 2024

[W5] Pranav Rao, Sarah Yi Xu, Ananya Bhattacharjee, Yuchen Zeng, **Alex Mariakakis**, and Joseph Jay Williams. Integrating Digital Calendars with Large Language Models for Stress Management Interventions. In *Workshop on Algorithmic Behavior Change Support (ALBECS), International Conference on Persuasive Technology*, pages 1–4, 2024

[W4] Ken Christofferson, Xuyang Chen, Zeyu Wang, **Alex Mariakakis**, and Yuntao Wang. Sleep Sound Classification Using ANC-Enabled Earbuds. In *Human-Centered Computational Sensing Workshop, IEEE International Conference on Pervasive Computing and Communications (PerCom)*, pages 1–6, 2022

[W3] Sidharth Gupta, Alexandros Sklavounos, Joshua Dahmer, Anthony Yong, Mohammed Abdullah, Gilberto Camacho, Keith Morton, Matthew Shiu, Jean Labrecque, Teodor Veres, Aaron Wheeler, and **Alex Mariakakis**. Machine Learning to Automate the Visual Interpretation of Chemical Agglutination Tests. In *Workshop on Annotation of User Data for Ubiquitous Systems, IEEE International Conference on Pervasive Computing and Communications (PerCom)*, pages 1–6, 2022

[W2] Tina Sedaghat, Salaar Liaqat, Daniyal Liaqat, Robert Wu, Andrea Gershon, Tatiana Son, Tiago Falk, Moshe

Gabel, **Alex Mariakakis**, and Eyal de Lara. Unobtrusive Monitoring of COPD Patients using Speech Collected from Smartwatches in the Wild. In *Workshop on Sensing Systems and Applications Using Wrist Worn Smart Devices (WristSense), IEEE International Conference on Pervasive Computing and Communications (PerCom)*, pages 1–6, 2022

[W1] **Alex Mariakakis**, Vijay Srinivasan, Kiran Rachuri, and Abhishek Mukherji. WatchUDrive: Differentiating Drivers and Passengers using Smartwatches. In *Workshop on Sensing Systems and Applications Using Wrist Worn Smart Devices (WristSense), IEEE International Conference on Pervasive Computing and Communication Workshops (PerCom)*, pages 1–4. IEEE, 2016

D Other Contributions (* = received award recognition)

[OC9] Kylie Zhong, Rilong Zhang, Will Dixon, Spencer Vecile, **Alex Mariakakis**, and Asad Siddiqui. Determining incidence and actionability of hypotension in pediatric patients in the operating room. In *CAS 2025 Annual Meeting Abstract Book*, page 133. Springer, 2025

[OC8] Pranav Rao, Maryam Taj, **Alex Mariakakis**, Joseph Jay Williams, and Ananya Bhattacharjee. Fitting the Message to the Moment: Designing Calendar-Aware Stress Messaging with Large Language Models. In *Short Papers Track, ACM Conference on Conversational User Interfaces (CUI)*, pages 1–6, 2025

[OC7] Andrii Lenyshyn, You Zhi Hu, Mark Chignell, and **Alex Mariakakis**. HoleyMoley: A Cognitive Assessment for Emotion Recognition in Virtual Reality. In *Companion Proceedings of the 2024 Annual Symposium on Computer-Human Interaction in Play*, pages 163–168, 2024

[OC6] Anthony James Maxin, Bernice G. Gulek, Rami Shaibani, **Alex Mariakakis**, Lynn B. McGrath, and Michael Levitt. Smartphone-based Pupillometry for Diagnosis of Ischemic and Hemorrhagic Stroke. In *Proceedings of the 14th ACM International Conference on Bioinformatics, Computational Biology, and Health Informatics*, pages 1–1, 2023

[OC5] Andrea Gershon, Nisha Patel, Robert Wu, Salaar Liaqat, Daniyal Liaqat, Eyal de Lara, **Alex Mariakakis**, Andrew Simor, Philip Lam, Sameer Masood, and others. Trends in Oxygen Level During Acute COVID-19 Infection in Patients Quarantining at Home. In *Cutting Edge COVID Research Poster Session, American Thoracic Society*, 2022

[OC4] Salaar Liaqat, Tiago Falk, Teresa To, Nisha Andany, Nisha Patel, Robert Wu, Andrea Gershon, **Alex Mariakakis**, Eyal de Lara, and Daniyal Liaqat. Predicting Low Oxygen Saturation of COVID-19 Patients Using a Random Forest Classifier. In *Cutting Edge COVID Research Poster Session, American Thoracic Society*, 2022

[OC3] Devesh Sarda, Chunjong Park, Hung Ngo, Shwetak Patel, and **Alex Mariakakis**. RDTCheck: A Smartphone App for Monitoring Rapid Diagnostic Test Administration. In *Late-Breaking Work Track, ACM Conference on Human Factors in Computing Systems (CHI)*, pages 1–6, 2021

[OC2] Lynn B McGrath, Jessica C Eaton, Anthony Law, **Alex Mariakakis**, Shwetak Patel, and Michael R Levitt. Mobile Digital Pupillometry for Rapid Triage of Patients With Severe Traumatic Brain Injury. *Neurosurgery*, 66(Supplement_1):nyz310_844, 2019

[OC1] **Alex Mariakakis** and Shwetak Patel. Ocular Symptom Detection using Smartphones. In *Doctoral Colloquium, Proceedings of the ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)*, pages 1–5, 2016

8 Non-Refereed Publications

A Journal Articles

[NRJ2] Joseph Breda, Mastafa Springston, **Alex Mariakakis**, and Shwetak Patel. Lessons Learned From FeverPhone: Towards Scalable, Accessible At-Home Diagnostics via Fever Detection on Unmodified Smartphones. *GetMobile: Mobile Computing and Communications*, 29(2):35–39, 2025

[NRJ1] **Alex Mariakakis**, Sifang Chen, Bichlien Nguyen, Kirsten Bray, Molly Blank, Jonathan Lester, Lauren Ryan, Paul Johns, Gonzalo Ramos, and Asta Roseway. Project Calico: Wearable Chemical Sensors for Environmental Monitoring. *arXiv preprint arXiv:2006.15292*, 2020

9 Manuscripts/Publications in Submission

Unlisted for brevity

10 Papers Presented at Meetings and Symposia

[CP6] EcoPatches: Maker-Friendly Chemical-Based UV Sensing. ACM Conference on Designing Interactive Systems (DIS), Eindhoven, Netherlands, July 2020

[CP5] Drunk User Interfaces: Determining Blood Alcohol Level Through Everyday Smartphone Tasks. ACM Conference on Human Factors in Computing Systems (CHI), Montreal, QC, Canada, April 2018

[CP4] PupilScreen: Using Smartphones to Assess Traumatic Brain Injury. ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp), Maui, HI, United States, September 2017

[CP3] BiliScreen: Smartphone-based Scleral Jaundice Monitoring for Liver and Pancreatic Disorders. ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp), Maui, HI, United States, September 2017

[CP2] Ocular Symptom Detection Using Smartphones. ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp), Doctoral School, Heidelberg, Germany, September 2016

[CP1] SwitchBack: Improving Interaction with Mobile Devices. ACM Conference on Human Factors in Computing Systems (CHI), Seoul, South Korea, April 2015

11 Invited Lectures

[IL28] Embracing Ubiquitous Technology to Complement, Scale, and Extend Traditional Healthcare. HCII Seminar Series, Carnegie Mellon University, Aug 2025. Pittsburgh, PA, United States

[IL27] Embracing Ubiquitous Technology to Complement, Scale, and Extend Traditional Healthcare. KITE Research Rounds, University Health Network, June 2025. Toronto, ON, Canada

[IL26] Embracing Ubiquitous Technology to Complement, Scale, and Extend Traditional Healthcare. University of Victoria, June 2025. Victoria, BC, Canada

[IL25] Embracing Ubiquitous Technology to Complement, Scale, and Extend Traditional Healthcare. University of British Columbia, June 2025. Vancouver, BC, Canada

[IL24] Embracing Ubiquitous Technology to Complement, Scale, and Extend Traditional Healthcare. VINCI Seminar, Simon Fraser University, June 2025. Burnaby, BC, Canada

[IL23] Embracing Ubiquitous Technology to Complement, Scale, and Extend Traditional Healthcare. University of British Columbia - Okanagan, May 2025. Kelowna, BC, Canada

[IL22] Panel on AI in Medicine and Medical Research. Annual Board of Directors Meeting for Physicians' Services Incorporated (PSI), October 2024. Toronto, ON, Canada

[IL21] Accessible Blood Pressure Estimation with Earbuds. TRANSFORM HF Spring Network Meeting, May 2024. Toronto, ON, Canada

[IL20] Embracing Ubiquitous Technology to Complement, Scale, and Extend Traditional Healthcare. Translational Biology and Engineering Program Conference (keynote), University of Toronto, May 2024. Toronto, ON, Canada

[IL19] Embracing Ubiquitous Technology to Complement, Scale, and Extend Traditional Healthcare. Mobile and Wearable Health Seminar, University of Cambridge, April 2024. Cambridge, United Kingdom

[IL18] Embracing Ubiquitous Technology to Complement, Scale, and Extend Traditional Healthcare. InnoVision Summit, Chinese Professionals Association of Canada, April 2024. Toronto, ON, Canada

[IL17] Embracing Ubiquitous Technology to Complement, Scale, and Extend Traditional Healthcare. Northeastern University, November 2023. Boston, MA, United States

[IL16] Embracing Ubiquitous Technology to Complement, Scale, and Extend Traditional Healthcare. University of Massachusetts Amherst, November 2023. Amherst, MA, United States

[IL15] Embracing Ubiquitous Technology to Complement, Scale, and Extend Traditional Healthcare. Applied Research in Action (keynote), University of Toronto, November 2023. Toronto, ON, Canada

[IL14] Making Medical Assessments Available and Objective Using Smartphone Sensors. Toronto Human-AI Interaction Summer Research School, University of Toronto, August 2022. Toronto, ON, Canada

[IL13] Making Medical Assessments Available and Objective Using Smartphone Sensors. Human-Machine Interaction Lab, Huawei Canada, May 2022. Toronto, ON, Canada

[IL12] Making Medical Assessments Available and Objective Using Smartphone Sensors. iBest Visiting Lecturer Series, Toronto Metropolitan University, April 2022. Toronto, ON, Canada

[IL11] Objectifying Subjective Medical Assessments Using Smartphone Sensors. University of Toronto, March 2020. Toronto, ON, Canada

[IL10] Objectifying Subjective Medical Assessments Using Smartphone Sensors. Georgia Tech, March 2019. Atlanta, GA, United States

[IL9] Objectifying Subjective Medical Assessments Using Smartphone Sensors. University of Virginia, February 2019. Charlottesville, VA, United States

[IL8] Drunk User Interfaces: Determining Blood Alcohol Level Through Everyday Smartphone Tasks. CSE Industry Affiliates, University of Washington, November 2018. Seattle, WA, United States

[IL7] BiliScreen: Smartphone-based Scleral Jaundice Monitoring for Liver and Pancreatic Disorders. mHealth Symposium at Fred Hutchinson Cancer Research Center, November 2018. Seattle, WA, United States

[IL6] Using Mobile Devices to Quantify Traditionally Qualitative Health Measures, September 2017. HalfMoon Education: Internet of Things Workshop

[IL5] BiliScreen: Smartphone-based Scleral Jaundice Monitoring for Liver and Pancreatic Disorders. Quantified Self Meetup, November 2017. Seattle, WA, United States

[IL4] BiliScreen: Smartphone-based Scleral Jaundice Monitoring for Liver and Pancreatic Disorders. CSE Industry Affiliates, University of Washington, November 2017. Seattle, WA, United States

[IL3] A Smartphone-based System for Assessing Intraocular Pressure. Microsoft Student Summit on Mobility, Systems, and Networking, February 2016. Petaluma, CA, United States

[IL2] Ocular Symptom Detection Using Smartphones. CSE Industry Affiliates, University of Washington, October 2016. Seattle, WA, United States

[IL1] SwitchBack: Improving Interaction with Mobile Devices. CSE Industry Affiliates, University of Washingotn, October 2014. Seattle, WA, United States

12 Media and Other Public Engagements

[ME23] New T-CAIREM AI in Medicine Courses Explore the Intersection of Data Science, Machine Learning. T-CAIREM, November 2024

[ME22] Playing the Future of Digital Health by Ear. TRANSFORM HF, March 2023

[ME21] The Evolution of Fitness Trackers. The Evolution Newsletter, Canadian Business, September 2023

[ME20] The Future of Mobile Health. To Vima, August 2020

[ME19] Hair Dye That Changes in UV Light Can Reveal Your Risk of Sunburn. New Scientist, July 2020

[ME18] PupilScreen: A Smartphone App for Measuring the Pupillary Light Reflex as an Indicator of Traumatic Brain Injury. NSF Science Now, National Science Foundation, November 2017

[ME17] Time Out: Smartphone App Detects Concussions on the Field. NVIDIA, October 2017

[ME16] This New App Detects Concussions Just By Looking Into Your Eyes. Newsweek, September 2017
[ME15] Smartphone App Scans Pupils to Detect Concussions. New Atlas, September 2017
[ME14] Handheld Tech Can Diagnose Concussions in the Field. Science & Health, VOA News, September 2017
[ME13] Geek of the Week: Duke Grad Alex Mariakakis Finds a Home at UW and a Vision for Continued Success. Geek of the Week, Geekwire, September 2017
[ME12] UW Researchers Develop App to Determine Concussions. KIRO 7 News, September 2017
[ME11] GeekWire: UW Researchers Developing Smartphone App That Can Detect Concussions. King 5 News, September 2017
[ME10] Selfie App 'Spots Early Signs of Pancreatic Cancer'. BBC News, September 2017
[ME9] Eye Scans to Detect Cancer and Alzheimer's Disease. IEEE Spectrum, August 2017
[ME8] How Your Selfies Could Help Detect Pancreatic Cancer. USA Today, August 2017
[ME7] How Selfies Could Soon Be Used to Diagnose Cancer. Cosmopolitan, August 2017
[ME6] The Aspen Institute's Five Best Ideas. The Aspen Institute, August 2017. Time Magazine
[ME5] App Uses Smartphone Selfies to Screen for Pancreatic Cancer. United Press International, August 2017
[ME4] App Uses Smartphone Selfies to Screen for Pancreatic Cancer. Engadget, August 2017
[ME3] Selfies Helping Detect Cancer? UW Researchers Are On It. KIRO 7 News, August 2017
[ME2] Take a Selfie, Help Screen Yourself for Cancer. KUOW Public Radio, August 2017
[ME1] BiliScreen: A Smartphone App for Measuring Scleral Jaundice as an Early Screening Tool for Pancreatic Cancer. KTLA 5 News at 10, August 2017

D Teaching and Supervision

13

A Undergraduate courses taught

CSC 318 H, Winter 2025: The Design of Interactive Computational Media (sole instructor, 115 students)

C4M Y, Fall 2023–Winter 2024: Computing for Medicine Workshops (sole instructor, 10 students)

CSC 318 H, Winter 2024: The Design of Interactive Computational Media (sole instructor, 120 students)

C4M Y, Fall 2022–Winter 2023: Computing for Medicine Workshops (sole instructor, 10 students)

CSC 318 H, Winter 2023: The Design of Interactive Computational Media (sole instructor, 120 students)

C4M Y, Fall 2021–Winter 2022: Computing for Medicine Workshops (sole instructor, 14 students)

CSC 318 H, Winter 2022: The Design of Interactive Computational Media (sole instructor, 110 students)

EE 590A (University of Washington), Spring 2018: Advanced Topics in Ubiquitous Computing (sole instructor, 35 students)

B Graduate courses taught

CSC 2631 H, Winter 2025: Mobile and Digital Health (sole instructor, 15 students)

CSC 2526 H, Fall 2024: HCI: Topics in Ubiquitous Computing (sole instructor, 15 students)

CSC 2526 H, Winter 2023: HCI: Topics in Ubiquitous Computing (sole instructor, 11 students)

CSC 2526 H, Winter 2022: HCI: Topics in Ubiquitous Computing (sole instructor, 31 students)

C Graduate theses supervised

Career Student Numbers		
	In Progress	**Completed**
Masters	4	2
PhD	7	2
Postdocs	0	1

Ongoing

Salaar Liaqat (PhD, 2018–present): "Challenges and Opportunities in Wearable-Based Remote Patient Monitoring: A Case Study on COPD"; secondary supervisor (primary: Eyal de Lara)

Ken Christofferson (PhD, 2021–present): "Accessible Multimodal Blood Pressure Estimation"; primary supervisor (secondary: Joseph Cafazzo)

Sejal Bhalla (PhD, 2021–present): "Utilizing Speech as a Biosignal for Monitoring Respiratory Health and Beyond'; primary supervisor (secondary: Eyal de Lara)

Dhruv Verma (PhD, 2021–present): "Augmenting Color Perception for Humans and Machines"; sole supervisor

Ian Ruffolo (2021–present): "Intelligent Alarms for Hospital Bedside Monitors"; primary supervisor (secondary: Michael Brudno)

Andrii Lenyshyn (2023–present): "Cognitive Assessments in Augmented Reality"; sole supervisor

ChengYue Zhang (2025–present): "Structuring Biomechanical Waveforms When Working with Big Data"; sole supervisor

Vaibhav Ganatra (2025–present): "Project TBD"; sole supervisor

Thomas Kleinknecht (2025–present): "Project TBD"; sole supervisor

Kelsey Stemmler (2025–present): "Project TBD"; sole supervisor

Katherine Jelich (2025–present): "Project TBD"; primary supervisor (secondary: Joseph Cafazzo)

Completed

Brenna Li (PhD, 2020–2025): "Enhancing Patient-Centered Care: Examining the Design and Evaluation of Conversational Agents for Clinical Pre-Consultation"; primary supervisor (secondary: Khai Truong)

Blue Lin (PhD, 2021–2025): "Multimodal Tracking with Ubiquitous Devices to Foster Holistic Menstrual Health Sensemaking"; secondary supervisor (primary: Khai Truong)

Gerard O'Leary (Postdoc, 2023–2025): "Physiological Monitoring in Dogs Using Novel Collar-based Hardware"; sole supervisor

Filip Miscevic (MScAC, 2022–2023): "Automatic Seizure Detection, Prediction, and Mitigation Using Minimally Invasive Implantable Bioelectrical Sensors"; secondary supervisor (primary: Gerard O'Leary)

Ian Ruffolo (MSc, 2021–2023): "Augmented Reality Guidance for Consistent Motor Control Assessments"; completed MSc in Spring 2023; primary supervisor (secondary: Michael Brudno)

D Undergraduates supervised

Ongoing

Larry Kieu (2025–present): "Phoneme-Aware Foundation Model for Speech Analysis"

Tanaya Sharma (2025–present): "Spectral Spotlighting for Low-Contrast Objects"

Maryam Taj (2025–present): "Long COVID Classification Using Respiratory Oscillometry"
Tim Wang (2025–present): "10,000 FPS Video with Hyperspectral Camera"
Richard Yin (2025–present): "Spectral Spotlighting for Low-Contrast Objects"
Harpuneet Singh (2024–present): "Virtual Dyeing of Sperm Cells in Sexual Assault Victim Samples"
Minh Le (2023–present): "Multimodal Health Tracking for Menstrual Health Sensemaking"

Completed

Matthew Parvaneh (2025): "Improved Information Retrieval in Veterinary Hospitals Using LLMs"
Jackson Wu (2025): "Improved Information Retrieval in Veterinary Hospitals Using LLMs"
Benson Chou (2024–2025): "Microgesture Classification Using Smartwatch Motion Sensors"
Tien Han (2024): "Speech Analysis for Continuous COPD Monitoring"
Kevin Huang (2024): "Cardiac Monitoring Using Earbuds"
Nina Huang (2024–2025): "Understanding the Role of Ambient Scribes in Modern Clinics"
Malaikah Hussain (2024): "Menstrual Health Sensemaking Chatbot"
Katherine Jelich (2024–2025): "Understanding the Role of Ambient Scribes in Modern Clinics"
Kaavya Kalani (2024–2025): "Menstrual Health Sensemaking Chatbot"
Michelle Lin (2024): "Cardiac Monitoring Using Earbuds"
Katherine Ma (2024): "Multimodal Health Tracking for Menstrual Health Sensemaking"
Shivesh Prakash (2024): "Material Classification Using Hyperspectral Imaging"
Andrew Qiu (2024–2025): "Accessible Hyperspectral Imaging Using a Smartphone"
Jeb Thomas (2024–2025): "Design Considerations for Pre-Consultation Summarization"
Owen Zhang (2024–2025): "Hypotension Prediction in Operating Rooms Using Noninvasive Signals"
Yifang Zhang (2024): "Accessible Hyperspectral Imaging Using a Smartphone"
Yiteng Zhang (2024): "Multimodal Health Tracking for Menstrual Health Sensemaking"
Olivia Zhou (2024): "Multimodal Health Tracking for Menstrual Health Sensemaking"
Liam Bakar (2023): "Clinical Pre-Consultation Chatbot"
Ofek Gross (2023): "Evaluation of a Clinical Pre-Consultation Chatbot"
Jiaqi Guo (2023): "Clinical Pre-Consultation Chatbot"
Anna Kirik (2023–2025): "Clinical Pre-Consultation Chatbot"
Shawn Kong (2023–2024): "Speech Analysis for Continuous COPD Monitoring"
Pierre-William Lessard (2023–2024): "Multimodal Health Tracking for Menstrual Health Sensemaking"
Sannat Bhasin (2022): "Material Classification Using Hyperspectral Imaging"
Helen Li (2022–2025): "Multimodal Health Tracking for Menstrual Health Sensemaking"
Zixiong Lin (2022–2023): "Menstrual Cycle Prediction Using Multimodal Health Data"
Tanya Skoropad (2022): "Evaluation of a Clinical Pre-Consultation Chatbot"
Yining Wang (2022): "Augmented Reality Guidance for Consistent Motor Control Assessments"
Chloe Zhao (2022): "Multimodal Health Tracking for Menstrual Health Sensemaking"
Sidharth Gupta (2021): "Automated Chemical Agglutination Tests Visual Assessment"
Sixuan Wu (2020–2023): "Capillary Refill Time Assessment with Smartphones"

E Other teaching and lectures given (past 5 years)

Apr 2025–Jul 2025: Instructor for "Computing for Medicine Professional Development Course", T-CAIREM, University of Toronto

Jan 2025–Apr 2025: Instructor for "Computing for Medicine Professional Development Course (self-study)", T-CAIREM, University of Toronto

Sep 2024–Apr 2025: Instructor for "Computing for Medicine Certificate", School of Medicine, University of Toronto

Jun 2024–Aug 2024: Instructor for "Computing for Medicine Professional Development Course", T-CAIREM, University of Toronto

Nov 2022: Guest lecture for "MHI2012H: Introduction to Big Data for Health", IHPME, University of Toronto

Feb 2022: Guest lecture for "CSC428H: Human-Computer Interaction", Department of Computer Science, University of Toronto

Nov 2021: Guest lecture for "MHI2012H: Introduction to Big Data for Health", IHPME, University of Toronto

Mar 2021: Guest lecture for "CSC428H: Human-Computer Interaction", Department of Computer Science, University of Toronto

Nov 2020: Guest lecture for "MHI2012H: Introduction to Big Data for Health", IHPME, University of Toronto

E Administrative Positions

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A Positions held and service on committees and organizations within the University

Jan 2025–Apr 2025: Graduate Visit Days Co-Chair

Jan 2024–Apr 2024: Graduate Visit Days Co-Chair

Sep 2023–present: Director of the Dynamic Graphics Project (DGP) Lab

Sep 2022–Apr 2023: Departmental Faculty Hiring Committee

Sep 2021–Apr 2022: Departmental Outreach Committee Member

Sep 2020–Apr 2022: Second-Year Learning Community Faculty Mentor

B Positions held and service on committees and organizations outside the University (of scholarly and academic significance)

Aug 2024–Jul 2025: Finances Chair for ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS)

Feb–Oct 2023: Posters & Demos Co-Chair for ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)

Nov 2022–Apr 2023: Co-organizer for Workshop on Integrating Individual and Social Contexts into Self-Reflection Technologies

Feb–Jul 2022: Co-organizer for Workshop on Emerging Devices for Digital Biomarkers

Feb–Jun 2022: Notes & Posters Co-Chair, ACM SIGCAS Computing and Sustainable Societies (COMPASS)

Jun–Sep 2020: Online Conference Co-Chair, ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)

Jan–Apr 2017: Online Video Preview Co-Chair, ACM Conference on Human Factors in Computing Systems (CHI)

F Other Relevant Information

N/A