Sabrina Lakhdhir
University of Victoria • sabrinalakhdhir@gmail.com • 587-892-6600

Research Interests

Wearable Computing, Customization, Creativity Support Tools, Interaction Design, Human Computer Interactions

Education

Doctor of Philosophy in Computer Science May 2022 – Present
University of Victoria *Expected Graduation: September 2025*
Thesis: Designing Tools to Support the Customization of Technology-Embedded Wearables
Supervisor: Dr. Sowmya Somanath

Master of Science in Computer Science September 2021 – April 2022
University of Victoria *Transferred to PhD*
Thesis: Envisioning Toolkits for Storytelling Wearables
Supervisor: Dr. Sowmya Somanath

Bachelor of Science, Honours, Computer Science September 2015 – April 2021
University of Calgary
Concentration: Human-Computer Interactions
Minor: Visual Art & Art History
Honours Thesis: Designing *Pedestrian-Wearables* for Interactions with Autonomous Vehicles
Supervisors: Dr. Ehud Sharlin, Dr. Sowmya Somanath

Academic Teaching Experience

Teaching Assistant
University of Victoria
Course: CSC 485C/578C – Computing for Cognitive Augmentation Fall 2022
Supported professor during the lecture with medial tasks and ensured students participated in lecture activities. Graded assignments for a class of approximately 65 students.

Course: CSC 106 – The Practice of Computer Science Spring 2022
Engaged two lab sections of first-year undergraduate students in introductory computer science concepts such as number systems, logic gates, and programming with Python and Processing.

Course: SENG 310 – Human Computer Interaction Fall 2021, Summer 2022
Instructed classes of approximately 30 upper-year undergraduate students in a mandatory lab section. Taught concepts such as use cases, task descriptions, and heuristic evaluation and led students through the user-centered design process using their own group projects as a baseline.

Guest Lectures

Customization of Personal Wearables, University of Victoria, SENG 310 July 2022
The Intersection of Art and Technology, University of Victoria, CSC 106 March 2022

Research Projects and Experience

Research Associate September 2021 – Present
VIXI Lab, University of Victoria
Projects: Storytelling in Garment Creation, Collaboration for the Customization of Assistive Technologies
Supervisor: Dr. Sowmya Somanath
Leading a series of research projects to study how technological tools or toolkits can support the customization of technology-embedded wearables in multiple contexts.

Research Associate September 2020 – August 2021
iLab, University of Calgary
Project: Designing Wearable Technologies for AV-Pedestrian Interactions
Supervisors: Dr. Ehud Sharlin, Dr. Sowmya Somanath
Led a research project to study possible effective designs of wearable technologies, specifically e-textiles, to assist in AV-pedestrian interactions. This included conducting a thorough literature review, developing and running a design study, analyzing qualitative data, and prototyping a subset of promising wearable ideas.

Research Associate October 2020 – September 2021
Multilingual Families Lab, University of Alberta
Project: LinGrow
Supervisor: Dr. Andrea MacLeod
Collaborated with an interdisciplinary team of researchers to design, develop, and evaluate an early-stage minimum viable product of an English Second Language support web application to aid research and communication between families, therapists, and educators who face challenges due to language barriers.

Research Intern Summer Internship 2019
Calgary Pediatric Stroke Program, University of Calgary & Alberta Children's Hospital
Project: Transcranial Magnetic Stimulation (TMS) Trainer
Supervisors: Dr. Ephrem Zewdie, Dr. Adam Kirton
Co-led a research project to design and develop an interactive training system to simulate a widely used physical treatment method. Produced a first prototype of a realistic training system using collected data and coded with over 1500 lines of code in C# on Unity which graphed electromyography signals containing over 2400 data points.

Publications

Papers
P.1. **Lakhdhir, S.**, Perin, C. & Somanath, S. Storytelling with Garments: A Case Study with Hobbyist-Sewers. *Under review at CHI Conference on Human Factors in Computing Systems (CHI '23).*

Position Papers
PP.1. **Lakhdhir, S.**, Holsti, L., Fournier, H., Kondratova, I., Anderson, F., Perin, C., & Somanath, S. Engaging Diverse Individuals in Remote Co-Design to Collaboratively Design Personalized Glucose Monitors. *Under review at A Workshop on Disability Inclusive Remote Co-Design at ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '22).*

Juried Posters
PO.1. **Lakhdhir, S.**, Fournier, H., Kondratova, I., Anderson, F., & Somanath, S. Tools for Collaboratively Designing and Evaluating Personalized Assistive Technologies. Poster presented at: Celebrating the Success of Women in STEM Symposium: Pushing the frontiers of research through collaboration. 2022 Feb 10-11; virtual.

PO.2. **Lakhdhir, S.** & Somanath, S. Envisioning a Toolkit for Storytelling with Garments. *Toolkits & Wearables Workshop at CHI Conference on Human Factors in Computing Systems (CHI '22).*

Technical Reports
R.1. Demers, C., **Lakhdhir, S**., Kaushik, S., Gimeno, Z., Munjal, D., Yang, L., Tormon, R., Ebose, W., & MacLeod, A.A.N. (2021, February). *linGrow: Development of a multilingual app to support home-school communication of multilingual families.* Multilingual Families Lab, University of Alberta. https://doi.org/10.7939/r3-5w7w-a035

Scholarships, Honours, and Awards

Faculty of Graduate Studies International Travel Grant ($600, *to attend ASSETS '22 to present PP.1*) October 2022
British Columbia Graduate Scholarship ($15,000) September 2022
Gary Marsden Travel Award *(to attend CHI '22 to present P.1)* May 2022
University of Victoria Graduate Award ($1,500) April 2022
University of Victoria Graduate Fellowship Award ($13,500) September 2021
Jason Lang Scholarship ($1,000) April 2019

Faculty of Science Dean's List — April 2019, 2021
Westlake Chemical Corporation Scholarship ($8,000) — 2015 – 2019
Alexander Rutherford Scholarship ($2,500) — June 2015
Bronze Duke of Edinburgh Award — 2014

Academic Service

Student Volunteer Co-Chair — September 2022 – Present
Conference: Graphics Interface (GI) 2023

Accessibility Co-Chair — November 2021 – June 2022
Conference: Designing Interactive Systems (DIS) 2022

Reviewer — October 2021
Conference on Human Factors in Computing Systems (CHI) 2022

Professional Memberships

ACM SIGCHI Member — April 2022 – Present
Association of Computing Machinery (ACM) Student Member — April 2021 – Present

Leadership and Mentoring Experience

University of Victoria ACM Student Chapter — March 2022 – Present
Role: Co-founder and Chair
Co-founded the University of Victoria ACM Student Chapter to provide mentoring opportunities, particularly for integrating more undergraduate students into research and helping them understand the broad applications of computer science, as well as to provide networking and learning opportunities for all students.

Undergraduate Student Mentor — January 2022 – Present
Mentored multiple final-year undergraduate students (one during their honours project, one during a MITACS internship) by engaging in weekly meetings, introducing them to research concepts and methods, and supporting completion of their project deliverables.

National Convenor for iCompute — November 2019 – Present
Aga Khan Education Board, Aga Khan Council for Canada
Roles: Instructor, Co-Instructor, National Convenor
Developed curriculum and organized members nation-wide for successful delivery of a foundational coding program for youth. Adapted programming for a virtual setting, trained volunteer instructors, and taught and coordinated classes via Zoom for over 50 students during Fall 2020 (level 1), over 40 students during Spring 2021 (level 2), and over 50 students during Fall 2021 (level 1).
Programs: Scratch in Level 1, Thunkable in Level 2

Technical Mentor — January 2018 – June 2020
University of Calgary, Technovation
Supported multiple teams of junior high and high school girls, along with a business mentor, in developing an app from initial ideation and business planning, through to development and a final pitch.
Languages: App Inventor for junior high team, Swift for high school team

Peer Helper — September 2016 – April 2018
Leadership & Student Engagement Office, University of Calgary
Offices: Meal Exchange, Sophomore Leadership Program
As a Meal Exchange peer helper, assisted in planning, advertising and executing various events such as Trick or Eat, an annual Halloween campaign to fight local hunger. As a Sophomore Leadership Program peer helper, mentored a group of second- and third-year students to develop their leadership styles through workshops and semesterly retreats while also engaging in extra-curricular activities and events.

Development Projects

Mental Health Wearable September 2020 – December 2020
Course: Wearable Design for Mental Health
Presented at: Nickle at Noon Showcase, Nickle Galleries, University of Calgary
Researched, ideated and designed a device which can be used to comfort individuals and work towards combating common mental health illnesses in students such as anxiety and loneliness. Defined a target user group, a set of required functionalities, and required materials, such that a working prototype could be developed.

Drone Movie Director September 2020 – December 2020
Course: Human-Robot Interactions
Designed a physical and touchscreen interface (HTML, CSS, JS) to mediate interactions between a drone and human movie director in order to achieve artistic views and increase basic functionality of a drone for filmmaking purposes.

Work Experience

Student WestJetter September 2019 – April 2020
WestJet Main Campus, Calgary
Training: ServiceNow Fundamentals
Worked through a variety of projects to support the End User Experience team within IT Mobility Operations for regular airline operations.

Certifications

3D Design and Print January 2022
Digital Scholarship Commons, University of Victoria Libraries

Qualitative Data Analysis with NVivo November 2021
Digital Scholarship Commons, University of Victoria Libraries

References

Available Upon Request