

## research statement

My research focuses on creating input devices and interaction techniques and studying various aspects of their usability using fabrication and hardware prototyping, software development, and quantitative human-subject experiments. Other research interests include entertainment technology, and creating new quantitative methods for data analysis.

## education

2018 - present (GPA: 4.0/4.0)

**Ph.D. Computer Science & Engineering** - *University of Washington*

Human Computer Interaction

Advisor: Jacob O. Wobbrock

2015 - 2018 (GPA: 95/100)

**MMath Computer Science** - *University of Waterloo*

Human Computer Interaction

Thesis: Contact-sensing Input Device Manipulation and Expertise

Advisor: Daniel Vogel

Note: Extra time in degree due to voluntarily taking all core CS undergrad courses

2013 - 2015 (GPA: 3.9/4.0)

**Master of Entertainment Technology** - *Carnegie Mellon University*

Interactive experiences and installations as a programmer and project manager

2008 - 2012 (GPA: 93/100)

**BMath Combinatorics & Optimization Joint Pure Math, French Certificate** - *University of Waterloo*

With Distinction - Dean's Honours List

## publications

**Note about conference papers:** In Human-Computer Interaction, conference proceedings are the preferred publication venue since they are timelier and typically have the greatest impact. Top-tier conferences are very selective with rigorous multi-stage reviews of full manuscripts creating high quality fully archival proceedings.

**Note about venues:** CHI (ACM Conference on Human Factors in Computing Systems) is recognized as a very top tier HCI conference (ranked #1 on Google Scholar). The average acceptance rate for CHI is 23%.

### peer-reviewed conference proceedings

[C1] **Lisa A. Elkin**, Jean-Baptiste Beau, Géry Casiez, and Daniel Vogel. 2020. *Manipulation, Learning, and Recall with Tangible Pen-Like Input*. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20).

### theses and dissertations

**Lisa Elkin** (2018). *Contact-sensing Input Device Manipulation and Recall*. <http://hdl.handle.net/10012/13205>

### peer-reviewed conference demos

[D1] **Lisa A. Elkin**, Jean-Baptiste Beau, Géry Casiez, and Daniel Vogel. 2020. A 26-Contact Tangible Pen-Like Input Device for Capacitive Displays. In Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (CHI EA '20).

## technical reports

[T1] **Lisa Elkin**, Ting Kei Pong, Stephen Vavasis (2013). *Convex Relaxation for Finding Planted Influential Nodes in a Social Network*. <https://arxiv.org/abs/1307.4047>

## interactive experiences (entertainment technology work)

[E3] **Lisa Elkin\***, Hyunghwan Byun\*, Yu-Cheng (Larry) Chang\*, Rose Heid\*, Maoyang Li\*, Qing Mao\*, Adarsh Telekadan Puthiyaveetil\*, Scott Stevens, Jessica Trybus (2015).

*Energy Lab 2 (Vis Viva): Seismic Mapping and Geology Education Installation* - Elizabeth Forward School District.

- Created interactive installation to teach middle school students about seismic mapping and rock properties.
- Focused on UI and gameplay programming using C# in Unity.
- Role: Programmer

\* Equal contributors

[E2] **Lisa Elkin\***, Jimit Bhalani\*, Casey Ging\*, Adarsh Pavani\*, Juan Ramirez\*, Shirley Saldamarco, Scott Stevens (2014). *Energy Lab 1 (Infinite): Large Touch-screen Dome for Science Installation* - Elizabeth Forward School District.

- Created 4ft wide, 2ft tall, diffuse illumination, hemispherical touch-screen.
- Created game for dome to teach middle school students about solar energy.
- Featured on CMU homepage (December 2015).
- Role: Project Manager

\* Equal contributors

[E1] **Lisa Elkin\***, Alex Hu\*, Yan Jin\*, Xuyan Ke\*, Jack Koo\*, Janet Lin\*, Tim Rosko\*, Brenda Harger, Ralph Vituccio (2014).

*Feed: A Massive Outdoor Game to Combat World Hunger* - Games for Change Festival.

- Created mobile, geo-cached outdoor game motivated by experiences of food distribution volunteers.
- Interest from media outlets and organizations including World Food Program USA.
- Role: Project manager

\* Equal contributors

## professional experience

September 2018 - Present

**University of Washington, ACE Lab** - *Research Assistant*

Advisor: Jacob O. Wobbrock

- Creating a new pre-processing method for quantitative data analysis.

May 2018 - July 2018

**Microsoft Research, EPIC Research Group** - *Research Intern*

Advisor: Ken Hinckley

June 2016 - April 2018

**University of Waterloo, School of Computer Science** - *Research Assistant*

Advisor: Daniel Vogel

- Designed, created, and evaluated new tangible pen-like input device.

June 2015 - August 2015

**Carnegie Mellon University, School of Computer Science** - *Programmer and Lead Designer*

- Created web-based, interactive, computer science education tools.

June 2012 - August 2012

**University of Waterloo, Faculty of Mathematics** - *Undergraduate Research Assistant*

- Research on influence maximization in social networks.

## teaching experience

2015 - 2018

**University of Waterloo, School of Computer Science - Graduate Teaching Assistant**

Lab Instructor, CS106: Intro to Computer Programming 2 (Winter 2016, 2018)

- Ran lab with up to 60 non-stem students teaching them to program in Processing.

Lab Instructor, CS105: Intro to Computer Programming 1 (Fall 2015, 2016, 2017)

- Ran lab with up to 60 non-stem students teaching them to program in Processing.

Teaching Assistant, CS449/649: Human-Computer Interaction (Spring 2017)

- Graded and gave in-person feedback on semester-long HCI student projects.

Teaching Assistant, CS349: User Interfaces (Winter 2016)

- Graded assignments in Java and helped students in office hours.

Teaching Assistant, CS234: Data Types and Structures (Spring 2016)

- Graded data structures proofs and pseudo-code on assignments.

Teaching Assistant, CS116: Intro to Computer Science (Winter 2016)

- Graded weekly Racket and Python programming assignments.

2014

**Carnegie Mellon University, Entertainment Technology - Graduate Teaching Assistant**

Festival Teaching Assistant, BVW: Building Virtual Worlds (Fall 2014)

- Organized event to showcase students' work to over 500 industry guests.

2010 - 2012

**University of Waterloo, Faculty of Mathematics - Undergraduate Teaching Assistant**

Tutor, MATH138: Calculus 2 for Honours Math (Winter 2012)

Tutor, MATH135: Algebra for Honours Math (Fall 2011)

Tutor, MATH136: Linear Algebra 1 for Honours Math (Winter 2011)

Grader, MATH235: Linear Algebra 2 for Honours Math (Fall 2010)

## scholarships and awards

**NSERC Postgraduate Scholarship, Doctoral (PGS D), 2018-2021**

\$21,000/year scholarship based on research potential and academic merit.

**Dinning - Wolf Endowed Regental Fellowship in Computer Science & Engineering, 2018**

\$25,000 fellowship based on academic merit.

**Ontario Graduate Scholarship, 2017**

\$15,00 scholarship based on academic merit.

**University of Waterloo President's Graduate Scholarship, 2017**

\$10,000 scholarship based on academic merit.

**NSERC Postgraduate Scholarship, Masters (PGS M), 2014**

\$17,300 scholarship based on research potential and academic merit.

**NSERC Canada Graduate Scholarship, Masters (CGS M), 2014**  
(cannot be held at international university, declined to accept PGS M)  
\$17,500 scholarship based on research potential and academic merit.

**Ontario Graduate Scholarship, 2014**  
(declined to accept NSERC PGS M)  
\$15,000 scholarship based on academic merit.

**Margaret A. Ryan Award, 2012**  
\$100 for receiving top grade in french linguistics course.

**NSERC Undergraduate Student Research Award, 2012**  
\$4,500 based on academic merit.

**University of Waterloo Women in Mathematics Scholarship, 2012**  
\$1,000 awarded to top female undergraduate math student in academic year.

**University of Waterloo, Faculty of Mathematics Semester Dean's Honours, Winter 2009 - Fall 2012**

## service

**UIST - Student Volunteer (2017, 2019)**

**MobileHCI 2019 Late Breaking Results - Reviewer (2019)**