

# AUDREY MORIN

## Software Developer, Mathematician and Educator

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## PROJECTS

### Personal Project

#### Sewing Pattern Maker

Summer 2020

Seattle, WA

- Worked in a team to develop a web app that allows users to generate a printable pdf sewing pattern from a picture.
- The user traces the outline of an uploaded picture of a garment with our **integrated drawing tools**. Our algorithms will **determine the pattern pieces** and **add sewing allowances** where necessary, then **scale and print** the result to a downloadable pdf.
- Techs** React, Typescript, HTML Canvas, GitHub

### TechTogether Hackathon

#### SafeWalk Boston

March 2019

Boston, MA

- Invented an algorithm that computes the safest walking route between two locations according to crime statistics.
- After users input an origin and destination, our web app uses the **Google Maps API** to generate various walking routes. Our algorithm then **evaluates their safety levels** by taking into account the **crime statistics** in Boston.
- Techs** Python, Google Maps API, HTML, jQuery, GitHub
- Awards** Best Use of Open Source Data For Social Good  
Climate Change Environmental Sustainability Challenge

### Class project

#### Wordasaurus

Spring 2020

Seattle, WA

- Went above and beyond on a **client/server** assignment and delivered a **multi-user** word-guessing game hosted on a Google Cloud VM.
- Features password protected **user accounts**, user high scores, a public **leaderboard** and the possibility for users to contribute to our bank of clues
- Techs** C++, TCP/IP, multi-threading, Google Cloud VM, GitHub

## RECENT EXPERIENCES

### Mathematics Instructor

#### Marianopolis College, Cegep St-Jean-sur-Richelieu & Maisonneuve

2015 - 2018

Montreal, Canada

- Instructed college level mathematics to 13 groups of  $\approx 30$  students over the course of 7 semesters.
- Produced sets of guided lecture notes for Linear Algebra and Calculus I
- Designed and graded exams, weekly quizzes and assignments

### Teaching Assistant & Lab Assistant

#### University of Montreal

2011 - 2014

Montreal, Canada

- Conducted exercise sessions for Linear Algebra, Calculus & Psychoacoustics to 4 groups of  $\approx 40$  undergraduate students over 4 semesters
- Designed experiments, recorded and audio engineered audio stimuli, collected and analyzed data on the phonetic analogies of guitar timbre
- Recruiting and data collection at the BRAin, Music and Sound laboratory

## PROGRAMMING

- Java
- Python
- C++
- Typescript

## EDUCATION

### Fundamentals of Computer Science Graduate Certificate

#### Seattle University

2019 - 2020

4.0/4.0 GPA

- OO Concepts, Data Structures and Algorithms, Databases, Operating Systems, Software Engineering

### B.Sc. and M.Sc. in Mathematics

#### University of Montreal

2009 - 2017

#### Master's 4.0/4.0 GPA (Quebec 4.2/4.3)

- Master's Thesis: Morse complexes and their equivalencies (in French)
- \$17,500 CRSNG Research Grant
- \$15,000 FRQNT Research Grant

#### Bachelor's 3.95/4.0 GPA (Quebec 4.1/4.3)

- Linear Algebra, Algebra, Analysis, Differential Geometry, Topology, Probability, Statistics
- 2x \$5,625 CRSNG Summer Research Grant

#### Minors Cognitive Sciences & Digital Music

- \$5,625 CRSNG Summer Research Grant

## TECHNICAL SKILLS

git HTML CSS React ASP.NET  
SQL Research LaTeX MATLAB  
Mathematica

## SOFT SKILLS

Leadership, Teaching

Organizational skills

Critical and logical thinking

Languages  
French (Native), English