

## EDUCATION

### THE UNIVERSITY OF BRITISH COLUMBIA

BASc IN ENGINEERING PHYSICS  
Graduating 2022 | Vancouver, BC

#### RELEVANT COURSEWORK:

Computer Vision & Machine Learning  
Instrumentation Design & Robotics  
Induction, Decision & Game Theory  
Principles of Software Architecture  
Interdisciplinary Design Capstone  
Digital Logic & Microcontrollers  
Technical Communication  
Circuit Design & Analysis  
Solid & Fluid Mechanics  
Electricity & Magnetism

## LINKS

Website:// [emmagrays.ca](http://emmagrays.ca)  
LinkedIn:// [grayemma](https://www.linkedin.com/in/grayemma)  
Github:// [em-gray](https://github.com/em-gray)

## SKILLS

### PROGRAMMING

Over 5000 lines:

Java • Python • C++ • HTML

Over 1000 lines:

C • Assembly • CSS • MATLAB

Familiar:

LaTeX • VHDL • JavaScript

### ELECTRICAL

Digital Logic Design  
Circuit Analysis & Debugging  
Soldering  
Oscilloscope, Signal Generator

### MECHANICAL

Solidworks, AutoCAD  
Hand & Power Tools  
Machine Shop Fundamentals  
Fundamentals of Biomechanics

### CERTIFICATIONS

PADI Open Water Diver  
B2 DELF (Higher Intermediate French)  
TC2S CORE Ethics  
Full Alberta Driver's Licence

## ACTIVITIES & INTERESTS

**Athletics:** Scuba Diving, Marathon Training, Synchronized Figure Skating  
**Arts:** Freelance Illustration, Writing, Painting, Sculpture  
**Other:** Good Craft Beer, World Travel, Meeting New People, Adventures

## WORK EXPERIENCE

### MICROSOFT | GARAGE PROGRAM MANAGEMENT INTERN

Apr. 2020 - Present | Vancouver, BC

- Tackling novel technical challenges with teams of designer and developer interns from around North America

### MISTYWEST | PRODUCT DESIGN ENGINEER CO-OP

Jan. 2019 - Apr. 2019 | Vancouver, BC

- Designed a BLE Android application to client specifications for displaying, recording and exporting medical device data in real time
- Built a custom, low-latency C++ API for a novel video-game control device
- Characterized battery performance in sub-zero temperatures for a wearable device, increasing discharge approximation accuracy by up to 20%

### UNIVERSITY OF CALGARY | BRACEWORKS & RONSKY LAB RESEARCH CO-OP

May 2018 - Aug. 2018 | Calgary, AB

- Assessed clinical viability of novel infrared (IR) torso scanning method
- Reduced user error by 25% with custom MATLAB software
- Presented results at year-end symposiums, to audiences of >100 people

### KREMBIL NEUROSCIENCE CENTRE | UNDERGRADUATE RESEARCHER

May 2017 - Aug. 2017 | Toronto, ON

- Collected and analyzed fMRI data of the brain undergoing stress tests
- Presented at International Seminar for Engineering Leaders (Santiago, CL)

## TECHNICAL PROJECTS

2019	<b>Simulated Autonomous Vehicle</b>	Keras, OpenCV, Gazebo, ROS & Python
2019	<b>Giant Mechatronic Butterfly</b>	Motor Control, Arduino, Electronics Design
2019	<b>Autonomous Competition Robot</b>	ROS Software, MECH, Electronics Design
2018	<b>Graph ADT Implementations</b>	AI Boggle Player, Large Dataset Analysis, Java

*More information @ [emmagrays.ca](mailto:emmagrays.ca)*

## INVOLVEMENT

### UBC BIOMEDICAL ENGINEERING STUDENT TEAM | [WWW.UBCBEST.COM](http://www.ubcbest.com)

Oct. 2018 - Present | Co-Captain

- Leads a multidisciplinary team of 90 undergraduate students with the goal of implementing relevant medical innovations locally and internationally.

Sept. 2017 - Oct. 2018 | Prototype Engineer, MINT Project

- Mechanical and electrical design for student-made EEG system
- Placed 2nd in International NeuroTechX Student Team Competition

### UBC STUDENT HEALTH & WELLBEING ADVISORY COMMITTEE

Sept. 2018 - Apr. 2019 | Student Advisor

- Selected as one of 20 students advising UBC on the improvement of mental and physical health initiatives on campus

## PUBLICATIONS

IMPROVED WHITE MATTER CEREBROVASCULAR REACTIVITY AFTER REVASCLARIZATION IN PATIENTS WITH STENO-OCCLUSIVE DISEASE  
American Journal of Neuroradiology | DOI: /10.3174/ajnr.A5912

RELIABILITY OF A THREE-DIMENSIONAL SCANNING TECHNIQUE AND METRICS QUANTIFYING PECTUS DEFORMITIES

Abstract presented at International Congress of Biomechanics, Summer 2019