# Satchel Jeanne Armena

725 Lauber Crescent – Edmonton, AB – Canada
+1 (780) 974 1621 • armena@ualberta.ca

## Education

**University of Alberta** — Edmonton, AB
*BSc. Honours Physics, GPA - 3.7* — *2016–Present*

**Mother Margaret Mary Catholic High School** — Edmonton, AB
*Alberta High School Diploma* — *2016–2013*

## Awards

### Research Awards

**Accepted**: Institute for Quantum Computing Undergraduate Research Award *2019*

**Offered**: University of Alberta Summer Undergraduate Physics Research Experience *2019*

### Academic Scholarships

Jason Lang Scholarship *2019*

University of Alberta Faculty of Science Undergraduate Scholarship *2019*

Jason Lang Scholarship *2018*

University of Alberta Entrance Scholarship *2016*

Rutherford Scholarship *2016*

## Experience

### Research Experience

**Institute for Quantum Computing** — Waterloo, ON
*Undergraduate Research Assistant* — *May 2019–August 2019*
Supervisor: Prof. Kevin Resch
Developed code that actively stabilizes displaced Sagnac interferometers for GPT tomography on qutrits

**University of Alberta: IceCube Neutrino Observatory** — Edmonton, AB
*Undergraduate Research Assistant* — *May 2018–August 2018*
Supervisor: Prof. Darren Grant
Developed an LED pulser for calibrating digital optical modules

### Relevant skills

**MATLAB**: Creating code for data analyses as well as implementing various numerical methods

**Python**: Writing code for data analysis, implementation of various numerical methods commonly used in physics, as well as implementing machine learning algorithms for regression and classification problems

**LABVIEW**: Developing code which allows a computer to communicate with laboratory equipment to assist in data acquisition

## Relevant coursework

**Physics Research Project** — Edmonton, Alberta
*PHYS 499, Course in progress* — *January 2020–April 2020*
Physics research under the supervision of Prof. Lindsay LeBlanc on "Simulating a quantum memory classically through an analogy between EIT (electromagnetically induced transparency) and mass-spring system"

**Machine Learning** — Edmonton, Alberta
*CMPUT 466* — *September 2019–December 2019*
Grade achieved: B+

**Quantum Computing for Computer Scientists** — Edmonton, Alberta
*CMPUT 604* — *January 2019–April 2019*
Grade achieved: A+

## Summer programs

**USEQIP** — Waterloo, ON
*Undergraduate School for Experimental Quantum Information Processing* — *May 2019–June 2019*
Participated in a 2 week intensive summer program with lectures on the basics of quantum computing and their physical realizations as well as experiments related to lecture contents

**QCSYS** — Waterloo, ON
*Quantum Cryptography for Young Students* — *August 2016*
Participated in a week-long intensive summer program on quantum cryptograhy which included introductory lectures on quantum mechanics and a quantum key distribution experiment at the end of the summer program

## Volunteer Experience

**QCSYS 2019** — Waterloo, ON
*Undergraduate mentor* — *August 2019*
As a QCSYS alumni, I provided relevant advice to questions on applying for university, what university is like, and undergraduate research work

**QCSYS 2019** — Waterloo, ON
*Physics demonstrator* — *August 2019*
Assisted QCSYS participants with assembling and performing a quantum key distribution experiment

**TeamUp Science: Interdisciplinary Science Competition** — Edmonton, AB
*Physics demonstrator* — *February 2018*
Responsible for handling a superconductivity demonstration and explaining the physics behind superconductivity at a high school level

## Leadership Experience

**University of Alberta Mathematical Sciences Society** — Edmonton, AB
*President* — *May 2019–Present*
Organize bi-weekly Undergraduate Mathematics Seminars on research in mathematics, social events for members, and handling recruitment of new members to the MSS

**University of Alberta Mathematical Sciences Society** — Edmonton, AB
*Treasurer-Secretary* — *May 2018–May 2019*
Handling finances for various events, keeping track of the year's budget, and advertising our Undergraduate Mathematics Seminars

**University of Alberta's Renewable Energy Design Club** — Edmonton, AB
*Finance Lead* — *September 2017–January 2019*
Applying for green grants to fund our current and future projects, setting up the club's banking, and handling the club's budget

**Canadian Undergraduate Physics Conference Planning Committee** — Edmonton, AB
*Vice President of Logistics and Finance* — *November 2017–August 2018*
Responsible for drafting the budget for the conference, organizing the welcome package for participants, and figuring out the logistics of the event

## Presentations

**CUPC 2019: Student Oral and Poster Presentations** — Montreal, QC
*Canadian Undergraduate Physics Conference, McGill University* — *November 2019*
"Active stabilization of Sagnac interferometers for GPT tomography"

**Show & Tell: A Student Research Celebration** — Edmonton, AB
*University of Alberta* — *September 2019*
"Active stabilization of Sagnac interferometers for GPT tomography"

**IceCube Collaboration: Undergraduate Research Symposium** — Edmonton, AB
*University of Alberta* — *August 2018*
"DOM calibration through a Nanosecond LED pulser"

**Undergraduate Summer Research Poster Session** — Edmonton, AB
*University of Alberta Faculty of Science* — *August 2018*
"DOM calibration through a Nanosecond LED pulser"

**CUPC 2018: Student Oral Presentations** — Edmonton, AB
*Canadian Undergraduate Physics Conference, University of Alberta* — *August 2018*
"DOM calibration through a Nanosecond LED pulser"