

Zhi Han

SENIOR UNDERGRADUATE STUDENT

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Research Experience

University of Alberta (Prof. Joseph Maciejko)

Edmonton, Canada

RESEARCH ASSISTANT

May 2019 - present

- Interaction Driven Topological Superconductivity
- Numerical simulation of a many body quantum model showing the existence of a topological quantum phase transition, verified through comparing with analytical methods.

IceCube Neutrino Observatory (Prof. Darren Grant, Prof. Kopper Claudio)

Edmonton, Canada

RESEARCH ASSISTANT

April 2018 - August 2018

- Reconstructing Particles with IceCube
- Writing and testing numerical algorithms for reconstructing particles

Honors & Awards

2019	Jason Lang Scholarship , Academic Scholarship	Edmonton, Canada
2019	A Faculty of Science Undergraduate Scholarship , Academic Scholarship	Edmonton, Canada
2019	Summer 2019 NSERC USRA , Research Funding	Edmonton, Canada
2019	Offered Department SUPRE , Departmental Research Funding	Edmonton, Canada
2018	A Faculty of Science Undergraduate Scholarship , Academic Scholarship	Edmonton, Canada
2017	Jason Lang Scholarship , Academic Scholarship	Edmonton, Canada
2017	Undergraduate Academic Scholarship Competition , Academic Scholarship	Edmonton, Canada
2016	Rutherford Scholarship , Entrance Scholarship	Edmonton, Canada
2016	Governor General's Academic Medal , Blessed Oscar Romero High School	Edmonton, Canada
2016	CEMC Euclid Math Contest 2016 School Champion and Certificate of Distinction , Euclid Math Competition	Edmonton, Canada

Presentations

Canadian Undergraduate Physics Conference 2019 at McGill University

Montreal, Canada

PRESENTER

Nov. 2019

- Interaction Driven Topological Superconductivity
- <https://slides.com/zhihan/topology>
- Both Oral and Poster Presentation

Show and Tell: A Student Research Celebration

Edmonton, Canada

POSTER PRESENTER

Sept. 2019

- Interaction Driven Topological Superconductivity

Undergraduate Summer Research Poster Session

Edmonton, Canada

POSTER PRESENTER

Aug. 2019

- Interaction Driven Topological Superconductivity

Undergraduate Research Symposium

Edmonton, Canada

ORAL PRESENTER

Aug. 2018

- Reconstructing Particles with IceCube

Leadership/Volunteering

LEADERSHIP

Canadian Undergraduate Physics Conference 2018 Planning Committee

Edmonton, AB

VP SOCIAL/COMMUNICATIONS

2017-2018

Planning and hosting social events, as well as managing social media, advertising, and building external relationships all in preparation for CUPC 2018 at the University of Alberta

Undergraduate Physics Society

VP SOCIAL

Planning and hosting club social events, advertising and doing class talks

Edmonton, AB

2017

Blessed Oscar Romero High School Graduation Ceremony

MASTER OF CEREMONIES

Hosted and spoke at Blessed Oscar Romero graduation ceremony at the Jubilee Auditorium in front of 400 people

Edmonton, AB

2016

VOLUNTEERING

2017 **Public Relations Volunteer**, Interdepartmental Science Students Society

Edmonton, AB

2014-2016 **Piano Therapy Volunteer**, Misericordia Hospital

Edmonton, AB

Education

University of Alberta

B.S. HONORS IN MATHEMATICAL PHYSICS

- Dean's list, In major GPA: 3.7

Edmonton, Canada

Sept 2016 - present

Blessed Oscar Romero High School

ALBERTA HIGH SCHOOL DIPLOMA

Edmonton, Canada

Sept 2014 - June 2016

Extracurricular Activities

Less Than Epsilon

PERSONAL BLOG

- <https://www.lessthanepsilon.net/>

Edmonton, Canada

Oct. 2018 - present

Piano

PIANIST

- Attained RCM Level 10

Edmonton, Canada

2011 - present

Computer Skills

Numerical Methods

Root finding, Interpolation, ODE solving, Curve fitting, Monte Carlo, Interactive plotting, Data Analysis with Pandas, Physical Modelling, Data Visualization

Machine Learning

Scikit-learn, Pytorch, Classification, Regression, Neural Networks, Clustering, Data Mining

Programming

Node.js, Expertise in Python and Mathematica (4 years) for Computational Physics, Jupyter Notebook, LaTeX, React, MATLAB, GatsbyJS, JavaScript

Languages

English, Chinese