Burke Brockelbank

Cirriculum Vitae

www.burkelibrockelbank.herokuapp.com

7-209 6445 University Blvd.
V6T 1Z2 Vancouver, British Columbia
Canada
M (587) 434 8839
E burke.brockelbank@gmail.com

Education

BSc Physics with Honors, First Class, *University of Calgary*, Calgary, Alberta, GPA: 3.9. **2013–2017**

Graduated April 2017.

Thesis: *Maximally entangled multipartite symmetric states*

Supervised by Gilad Gour. Characterization of maximal entanglement in pure multipartite qubit states with symmetry under exchange of qubits.

Classes: *Special classes taken during BSc*

- Solid state physics
- Introduction to Optimization
- Introduction to Nanoscience and Nanotechnology

Work Experience

Research Assistant, *Nasser Moazzen-Ahmadi*, Calgary, University of Calgary. **2017-2018**

Investigating the feasibility of upgrading of bitumen with lasers

- Executing and analyzing gas chromatography (GC) and mass spectrometry (MS) on a GCMS analyzer
- Analysis of nuclear magnetic resonance (NMR) data
- Extensive log keeping (written and video), writing reports, presentations

Summer Researcher, *Nasser Moazzen-Ahmadi*, Calgary, University of Calgary. **2015–2017**

Study of infrared (IR) rovibrational spectroscopy of molecular clusters. Included lab and computational work.

- High and low vacuum systems
- Lasers and optics
- Electronic maintenance including design and soldering
- Network maintenance
- Cryogenics (liquid nitrogen, dry ice)
- Data calibration
- Poster presentation at Quantum Alberta Workshop 2016

Freight Associate, *The Home Depot*, Calgary, Alberta. **2014**

Overnight stocking

Computer skills

Programming: In order of familiarity: Python (Scipy, Numpy, Pytorch), LabVIEW, Fortran 77 and 90, Matlab, SQL, Shell and Batch scripts, Makefiles

Word Processing: Proficient with LaTeX as well as WYSWIG editors such as MS Word

Spreadsheets: Translatable experience with data analysis

OS: Experience on Windows and Linux, as well as Mac OS.

Other skills

Machine learning: Machine learning with neural nets has been a hobby of mine for some time now. I am working on passion project where a user-defined AI is used to supervise a neural net to to train a prior which is refined with Deep-Q learning.

Awards and Scholarships

NSERC Undergraduate Student Research Award: 2016

Louise McKinney Scholarship: 2015

University of Calgary Undergraduate Merit Award: 2015

Physics and Astronomy Book Award: 2015

Physics and Astronomy Undergraduate Scholarship: 2015

Jason Lang Scholarship: 2014

President's Admission Scholarship: 2013

Alexander Rutherford Scholarship: 2013

Publications

unpublished: Use of quantum-correlated twin beams for cancellation of power fluctuations in a continuous-wave optical parametric oscillator for high-resolution spectroscopy in the rapid scan mode

unpublished: Absolutely Maximally Entangled Multipartite Symmetric States

2017: Three new infrared bands of the He-OCS complex