Jack Hong

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RESEARCH EXPERIENCE

UNIVERSITY OF TORONTO | Summer research student

May 2017 – August 2017 | Toronto, ON

Worked with **Professor Jo Bovy** to develop a Python class to represent the gravitational potential of spiral arms of galaxies in the galpy open source Python library. Wrote a comprehensive test suite using pytest to ensure program correctness. Used my software class to investigate the effects of spiral arms on the Oort constants.

NATIONAL INSTITUTE OF NANOTECHNOLOGY | Summer research student

May 2016 – August 2016 | Edmonton, AB

Worked with **Professor Marek Malak** to develop and test a micro-controller based on the Intel Galileo Gen 2 Development Board (Arduino) for the Hitachi 3D Tomography Holder used in electron microscopes. Programmed the controller in the Arduino language and MATLAB to work with the existing microscopy software (Maestro). Improved the rotation angle resolution of the tomography holder from 1°to 0.25°.

WORK EXPERIENCE

UBC | Undergraduate Teaching Assistant

Sep 2014 – Present | Vancouver, BC

- PHYS 109: Enriched Experimental Physics – help students in labs, mark lab books (Jan - Apr 2016 and Jan - Apr 2017)
- PHYS 100: Introductory Physics – led a tutorial section, marked exams (Sep 2017 - Dec 2017)
- CPSC 101: Computational Thinking – led two lab sections, marked projects and exams (Sep 2014 - Dec 2014)

CITY OF RICHMOND | Lifeguard & Swimming Instructor

May 2013 – Present | Richmond, BC

- Supervise pools, treat first aids, respond to patron concerns, perform water tests, and clean change rooms
- Teach the Red Cross Swim Programs, including preschool, kids, teens, and adults.

IBM | Software Test Specialist

Jan 2016 – April 2016 | Victoria, BC

- Wrote and maintained JUnit 4 and Selenium Webdriver 2.0 tests for IBM Forms Experience Builder software.
- Submitted detailed bug reports that accurately and concisely described the problems found.

EDUCATION

UNIVERSITY OF BRITISH COLUMBIA | BSc in Physics

Major in Physics, minor in astronomy | 82% average | Year 4 | Expected graduation May 2019 | Vancouver, BC

For more details on my course projects, please visit me at my website: https://www.phas.ubc.ca/~jackhong

Computational physics projects (MATLAB and Python)

Projectile motion, driven damped pendulum, Brownian motion, planetary orbits, bound states of N-square potential wells, 2D Ising model, virus infection simulations, and more.

Other programming projects:

Restaurant quiz (Java, android application), simple machine program (Java), snake game (Racket) .

Physics labs:

Oscilloscopes and basic electronic circuits, electrocardiogram project, expansion coefficients of metal bars using laser interferometry, cosmic ray flux using photomultiplier tubes, Earth's field nuclear magnetic resonance.

LANGUAGES

PROGRAMMING

Python • MATLAB • Java • LaTeX

SPOKEN & WRITTEN

Fluent:
English, French
Spoken only:
Mandarin Chinese