Zhongyin Zhang

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PROFILE

Fourth-year student major in physics and minor in computing.

EDUCATION

Queen's University, Kingston, ON, Canada — 2017.7~2021.6
Bachelor of Science (Honours) - Physics and Computing
- Cumulative GPA is 3.7, Dean's Honour List
- Member of Physics department student council (present)
- Teaching assistant for school of computing (2020.9)
- Student valedictorian for school of English (2017.8)
- Member of soccer and Frisbee club (present)

Peking University, Beijing, China — 2018.7 and 2019.7
Certificate student - Computing and Economics
- Average grade is A
- Learned and coded on machine learning and image processing project
- Understood main issues on computer ethics and developed some improving ideas
- Studied game theory and mixed strategies

Dalian Maple Leaf International School, Liaoning, China — 2014.7~2017.6
High school diploma - General Science
- Average grade is 91%, Certificate of excellence in physics, Principle's Honour Roll
- Member of student council, department of academics (2016)

PROJECTS AND EXPERIMENTS

- Machine learning project - Developing a Bubble Chamber Particle Discriminator Using Semi-Supervised Learning (In progress)
- Characterizing the form of mass flow of granular materials from hoppers, accounting for the angle of repose (2019)
- Ferromagnetic Hysteresis: Investigate on the magnetic properties of different ferromagnetic materials (2019)
- Model the office light system by build the digital circuit and on ORCAD simulation program (2018)
- Phase shift oscillator and Second order Sallen-Key filter (2018)

- Python simulating project: Integrating LIGO Black Hole Orbits and the N-body Problem (2017)
- Derby car design project with speed and distance competition (2016, won gold medal)
- Electron gun (2020, Stopped because of COVID-19)
- Others: Data scrapers, eigenvalue solvers, and physical models in Python.

SKILLS

- Physics: Doing experiment and writing formal reports, design projects, The use of lab equipments. Make physical models by build simulations in lab or coding.
- Computing:
  - Bash shell scripting (Linux or terminal on Mac), Python (with numpy, matplotlib and scipy), Java.
  - Object-oriented programming and procedural programming.
  - Data analysis with algorithms and machine learning.
  - Also have some knowledge on C, assembly language and KNIME.
- Drawing: Sketch with pencil or pen, engineering drawing in 2D or 3D, painting.
- Office skill: Microsoft tools (e.g. Excel), LeTaX, html.

SUMMARY OF STRENGTHS

- High energy: constant positive morale, support and motivation
- Willing to overcome challenges: Always attempt bonus questions in exams. Participated in CAP exam at Queen's university 2020. Attended Waterloo Math Contest in each year in High school.
- Teamwork: Always patiently listens to the others, and give them useful advice. Clearly and appropriately explain personal opinions. Persuasive.
- Helpful: provided academic help to tens of classmates and lower-year students, and they made excellent progress with my help.

IMPORTANT ACTIVITIES

- Attended seminar about SNOLAB and PICO experiments, including talk by Dr. Arthur D. McDonald. Attended Dark Matter Day event focused on weakly interacting massive particle (WIMP) experiments.
- Attended "Understanding our universe from a Hole in the ground" activity which is organized by Queen's Space Conference. Also went to dark sky viewing area to do the celestial observation on stars by using eyes and using telescope for details.