Aileen Zhai

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EDUCATION

CARNEGIE MELLON UNIVERSITY | BA Philosophy, BS Physics

Expected May 2020 | Pittsburgh, PA

• QPA: 3.38/4.0

RESEARCH

NEVIS LABORATORIES, COLUMBIA UNIVERSITY | REU Student

May 2018 - August 2018 | Pittsburgh, PA

- Performed data visualization for results of MicroBooNE data to perform energy calibration for reconstruction of single photon neutrino events for single photon analysis.
- Presented results at the MicroBooNE Collaboration Meeting in July 2018.

CARNEGIE MELLON UNIVERSITY | Research Assistant

September 2017 - Present | Pittsburgh, PA

- Analyzing the simulation software GalSim which generates simulated images of galaxies to look for evidence of smearing which is indicative of weak gravitation lensing.
- Simulated images of lensed galaxies of various shear and analyzed output for indication of bias in the software.

WISCONSIN ICECUBE PARTICLE ASTROPHYSICS CENTER | Research Assistant

May 2017 - August 2017 | Madison, WI

- Created programs for GEANT4 using a combination of C++, Python, and bash shell script.
- Simulated and tested a prototype optical photon detector of wavelength-shifting fibers.

UNIVERSITY OF WISCONSIN - MADISON | Intern

June 2015 - August 2015 | Madison, WI

- Experimented in optics with plastics, radioactive sources, and photomultiplier tubes.
- Tested scintillation efficiencies of types of glass as a function of temperature to improve baseline error of raw data estimates from the IceCube Neutrino Telescope.

LEADERSHIP

PROJECT SMILE | President

May 2017 - Present | Pittsburgh, PA

- Organizing events to make the Carnegie Mellon University campus a happier place by bringing students together to commit random acts of kindness around the school.

ATLAS BUGGY | Assistant Chair

May 2017 - Present | Pittsburgh, PA

- Leading a subteam of enthusiastic members in testing developments to a software testbed for an autonomous buggy.

CARNEGIE INVOLVEMENT ASSOCIATION | Support Chair

May 2017 - May 2018 | Pittsburgh, PA

- Designed and created new flags for the team.
- Set up and barricades and No Parking signs to keep people safe for freerolls practices.
- Trained signal flaggers for drivers as they reach top speeds around the race course.

LANGUAGES

PROGRAMMING

•Python •C++ •Mathematica •GEANT4 •GalSim •ROOT

NATURAL LANGUAGES

•English •Mandarin Chinese •French