

Hoi Yan Ian Heung | 香愷仁

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Education

Davidson College

Bachelor of Science, Physics Major, Computer Science Minor

Davidson, NC, USA

Expected Graduation: 05/2024

- GPA: 3.9

Temple University Japan Campus

Spring 2023 Study Abroad

Tokyo, Japan

01/2023 - 04/2023

- Abroad Coursework GPA: 3.9

Research Experience

Davidson College - Undergraduate Researcher

Davidson, NC, USA

Algorithms for Learning in Physics Applications (ALPhA)

08/2023 - Present

- Rejoined research group to continue work on 3D convolutional neural networks for particle classification problems
- Process and clean raw data for model training, created data processing pipeline from scratch
- Apply different 3D Sparse Tensor Network packages and architectures to evaluate model efficiencies using PyTorch

Experimental Quantum Information Physics Unit - Undergraduate Researcher

Okinawa, Japan

Okinawa Institute of Science and Technology Graduate University

05/2023 - 08/2023

- Selected to participate in highly competitive research internship open to undergraduate and graduate students
- Implemented a PID controller onto a Red Pitaya FPGA board using HDL programming for laser frequency control
- Designed FIR and IIR filters to suppress background signal noise from interfering with PID controller

Davidson College - Undergraduate Researcher

Davidson, NC, USA

Davidson College Physics Department - Davidson Research Initiative

05/2022 - 08/2022

- Identified radioisotopes and analyzed radioactivity of soil samples from Lake Norman using gamma ray spectroscopy
- Converted unprocessed event data from detector into three dimensional histograms using CERN-ROOT
- Project was proposed by myself and was approved for the Davidson Research Initiative research grant
- Presented work at 2022 Physics Congress, and 2022 Fall Meeting of the Division of Nuclear Physics

Davidson College - Undergraduate Researcher

Davidson, NC, USA

Algorithms for Learning in Physics Applications (ALPhA)

01/2022 - 08/2022

- Applied machine learning for particle classification using 2D and 3D convolutional neural networks with Tensorflow
- Collaborated with members from the Facility for Rare Isotope Beams and S π RIT TPC to generate track simulation data
- Trained and refined models for collaborators to apply to real experimental particle track fission data
- Presented work at the 2022 Verna Miller Case Symposium at Davidson College

Experience

Data Consultant

Davidson, NC, USA

Data CATS

08/2023 - Present

- Provide support and services to students, professors, and companies on data related assignments and projects
- Plan and host workshops for developing skills in AI, computer science, data science, machine learning etc.

Founder and President

Davidson, NC, USA

Davidson College Hong Kong Society

09/2022 - Present

- Work with board members to host events sharing and promoting Hong Kong culture to Davidson students
- Create a safe community for Hong Kong students yet to adapt to American culture and college lifestyle

Founder and President

Davidson, NC, USA

Davidson College Badminton Club

10/2021 - Present

- Organize recreational and competitive badminton training sessions
- Coach new members on badminton basics and rules, host special training sessions
- Participate in intercollegiate badminton tournaments

Languages

Native Proficiency:

English, Cantonese, Mandarin

Fluent Proficiency:

Japanese (JLPT N2)

Elementary Proficiency:

Korean

Programing Languages, Software, Skills

Programing Languages:

Python, Java, C, C++, Verilog, SQL, Kotlin,

Software and Interfaces:

Bash (Unix Shell), Excel, Xilinx Vivado, Android Studio, MATLAB

Skills:

Data Analysis, Machine Learning, Nuclear Physics, Signal Processing