YING CHAN

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EDUCATION

The Chinese University of Hong Kong *September 2019 - Present*
4th Year, B.Sc. Physics

EXPERIENCE

The Chinese University of Hong Kong Decaying Dark matter in ΛCDM cosmological model
Paired team member for TBTF problem led by Prof. CHU Ming Chung *May 2020 - July 2020*

· Solved the Too Big To Fail problem by making use of computer simulation to incorporate decaying properties to Dark Matter.

The Chinese University of Hong Kong NMR spectrometer simulations: Message in a box
Individual member of software development led by Dr. Alvin H.T. LEUNG *May 2021-August 2021*

· Performed data correction making use of Machine Learning and numerical calculations making use of computation.

The Chinese University of Hong Kong Monte-Carlo simulation of 2D-Ising Model
Individual term project supervised by Prof. Zhu Junyi *October 2021 - November 2021*

· Implemented different updating algorithms including Metropolis and Wolff to 50×50 square lattice[1].
· Simulated phase transitions at critical temperatures.

University of California, Berkeley Leybold GRAPHIX 3 translator project, and LabVIEW DAQ
Two individual projects of software development supervised by Prof. Yury Kolomensky, received mentorship from Dr. Brad Welliver *February 2022 - August 2022*

· Worked on software translator to update communication from Cabbibo to Leybold CenterThree by LabVIEW, Python and Raspberry Pi.
· Worked on Sensor control and DAQ software development for use with underground cryogenic experiments operating transition edge sensor light detectors.

University of California, Berkeley Heavy dark matter multiscattering capture of Sun
Individual investigator for graduation research thesis in The Chinese University of Hong Kong.
Project supervised by Prof. Hitoshi Murayama, received mentorships from Dr. W. Linda Xu and Dr. Toby Opferkuch *March 2022 - Now*

· Rederived multiscattering problem of dark matter for both fluid and particle regime for stellar medium.
· Realized descrepancy of continuous energy loss expression in particle regime in literatures by deriving the expression explicitly in center-of-mass frame.
· Simulated[2] Monte Carlo single dark matter multi-scattering capture events in Sun using Python and adaptations of Fortran written swifter[3] package.

[1]Report: https://kittenk531.github.io/2D-ising/. Source code only visible to public upon request since this project question is still enlisted to the school's term project list.
[2]https://github.com/kittenK531/starcode.git
[3]https://www.boulder.swri.edu/swifter/

EMPLOYMENT

Flying Milk Tea Limited
AI Developer *June 2021 - August 2021*

- Trained and evaluated model to perform image-steganography for authentication of product images making use of machine learning
- Developed a live stream talking-head application from python with a combination of 3 deep learning models.

ACTIVITIES AND OTHER EXPERIENCE

1. President of Physics Society CUSU from February 2020 - January 2021
2. Physics Student Conference organising committee 2020
3. Note-taking service for students with hearing difficulties from September 2020 - December 2020
4. Peer Tutoring Scheme (CUHK ELTU department) from September - December 2021
5. MoCC Ambassadorship 2021/2022
6. Supercomputing team mentor 2022-2023
7. **Supercomputing team member 2021: Finalists**: HPL tuning, and optimization of software PRESTO.
8. **Exchange to University of California, Berkeley for Spring and Summer 2022**: Quantum Field Theory Primer, Special and General Relativity, and Nonlinear and Quantum Optics

SCHOLARSHIPS

1. CUHK Student Exchange Financial Aid and Scholarship Scheme (FASS)
2. Undergraduate Student Exchange Scholarship Scheme (SFES)
3. Reaching Out Award (2022)