Darin Chau Yu Foon

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EDUCATION

Hong Kong University of Science and Technology — Hong Kong
BSc in Mathematics and Computer Science; GPA: 3.83 — *Sep 2020 - Present*

University of California, Irvine — Irvine, CA
(Exchange) Major in Mathematics — *Jan 2023 - Present*

SELECTED COURSE WORK

- **COMP2211**: Exploring AI (Grade: A+)
- **MATH2431**: Honors Probability (Grade: A)
- **MATH4141**: Number Theory and Applications (Grade: A)
- **MATH5111**: Advanced Algebra I (Grade: A)

EXPERIENCE

Math Research — Hong Kong
Supervisor: Prof. Ivan Ip — *Sep 2022 - Dec 2022*
- ○ **Cluster algebra**: (Algebraic Geometry/Algebraic Combinatorics - Math) Conducted a systematic three-month research on the combinatorial tools developed by Gross et. al. on proving the positivity theorem.
- ○ **Python development**: Developed Python libraries for benchmarked 50% more efficient generation of high-dimensional plots and transpilation into LaTeX diagrams.

Computer Science Research — Hong Kong
Supervisor: Prof. Gary Chan Sheung-Han — *Jun 2022 - Aug 2022*
- ○ **PHNet**: Investigated the Parasite-Host CNN model developed by Meng et. al. for video crowd counting, and benchmarked its performance on five datasets.
- ○ **Unity Dataset**: Developed three sets of synthetic dataset consisting of videos of a crowd in Unity3D. This provides the first 4k video dataset for crowd counting research.

Music is the Key — (Remote)
Software Developer — *Aug 2021 - Aug 2022*
- ○ **Duties**: Developed chatbots and API integration tools to enhance user experience; grew the community by more than 5x.

Youthniverse — Hong Kong
Software Developer — *Aug 2020 - Feb 2021*
- ○ **Duties**: Developed a profile matching mobile application for a startup non-profit organization using React Native.
- ○ **AI profile matching**: Developed the AI algorithm for profile matching using regression techniques and clustering.

PROGRAMMING SKILLS

- **Languages**: Python, Javascript, HTML, CSS, C++, C#, Rust
- **Tools (Machine Learning)**: PyTorch, Numpy, Keras, TensorFlow, Pandas, MatPlotLib
- **Tools (App development)**: React, Angular, Firebase, Unity3D, Yew
- **Tools (Others)**: React, Angular, Firebase, Unity3D, Yew