Darin Chau Yu Foon

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Hi! I am Darin. I am a mathematics and computer science undergraduate student from HKUST. I have conducted research in mathematics and computer science for the past two years. I can also do python and Javascript programming. In my free time I love to play classical music on the piano.

EDUCATION

Hong Kong University of Science and Technology   Hong Kong
BSc in Mathematics and Computer Science; GPA: 3.84   *Sep 2020 - 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) We investigated the positivity theorem of cluster algebras and the combinatorial tools developed by Gross et. al. for the proof.
- **TikzPaint**: We developed TikzPaint, a Python Library for generating tikz code and animations, to demonstrate high-dimensional plots and figures in the research

Computer Science Research   Hong Kong
Supervisor: Prof. Gary Chan Sheung-Han   *Jun 2022 - Aug 2022*

- **PHNet**: We investigated the Parasite-Host CNN model developed by Meng et. al. for video crowd counting. We developed a synthetic dataset and suggested modified model structures.
- **Unity Dataset**: We developed a synthetic dataset consisting of videos of a crowd in Unity3D. This provides a 4k dataset for crowd counting research.

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-powered algorithm for profile matching using regression techniques and clustering.

Music is the Key   Hong Kong
Software Developer   *Aug 2021 - Aug 2022*

- **Duties**: To develop softwares and chat bots to enhance online user experience in an international organization focusing on music education and networking.

PROJECTS

- **TikzPaint**: Open source python library for generating high-dimensional mathematical figures.

PROGRAMMING SKILLS

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