Jeffrey Chang

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ACADEMIC HISTORY

St. Paul's College   2017- Present

GCE IAL – Science Stream (GPA: 4.22/4.3)

Form 5 – 2nd in form	• Stanton Scholarship (2017- Present)
Form 4 – 2nd in form	• Scholarship for Academic Excellence (2017- Present)
Teaching Assistant in Math Classes	• The Mr. & Mrs. Ho Chak Wan Memorial Scholarship (2019)
	• The Reverend Geoffrey L Speak Scholarship for Excellence (2018)

HK Academy for Gifted Education (HKAGE)   2017- Present

Ongoing Training for representing HK globally
- International Physics Tournament 2022 Official Team Member
- International Physics Olympiad Training (11th in Camp)
- Pan-Pearl Physics Olympiad and China Physics Olympiad HK Respresentative
- Pre -IMO Intensive Training for the 62nd International Mathematical Olympiad (Top 12 HK)

World Science Scholar

Scholar 2023 cohort   June 2022- Present
- Studied courses under Nobel Laureates and renowned professors in fields like String Theory, Quantum entanglement, Neuroscience etc.

Hong Kong University of Science and Technology   July 2022 – January 2023
- Quantum Computing for Gifted Students course, project on semi-quantum neural networks for playing quantum chess variant

The Chinese University of Hong Kong   2019, 2022

Enrichment Program for Young Mathematics Talents
- Number Theory and Cryptography (2 credits): Distinction (***Received Excellent Performance Award Scholarship)***
- Towards Differential Geometry (2 credits): Merit

Hong Kong Virtual University   2021
- Hong Kong Chemist Online Self Study Scheme-Diamond Award

RESEARCH EXPERIENCE

City University of Hong Kong

Research Intern   May 2021 – June 2022
- Initiated research to provide a realistic physical model of the agent's interaction with the environment with Deep Reinforcement Learning

Research Intern in Underwater Robotics Team   June 2022 - Present
- Implemented Harris Point Extraction for feature extraction, described features with the rBRIEF descriptor, and matched
  descriptors in adjacent frames by minimum Hamming Distance to achieve local adjustment of an error of less than 10mm

The Hong Kong Polytechnic University

Research Intern   Mar 2022 - Present
- Research and Development of an Object Detection and Tracking System on NVIDIA Jetbots (YOLO v5)

NVIDIA

Student Ambassador   April 2022 - Present
- Wrote an academic paper with Dr. Charles Cheung on using DeepONets for pattern formation on manifolds
- Trained Physics-Informed Neural Operators to solve reaction-diffusion equations and investigated uses of Generative Adversarial Networks

WORK EXPERIENCE

City University of Hong Kong

Teaching Assistant   June 2022 - Present
- Teaching high-school students in the AIoT Coding, Engineering and Entrepreneurial (AIoT CE2) Skills Education
for Gifted Students programme on topics like Convolutional Neural Networks, Q-learning, and my research

HelloJack!

Software Development Consultant   Aug 2022 - Present
• Improve rankings by utilising Search Engine Optimization (SEO) on Keywords
• Setup API query for website to enable better website loading time
• Change user interfaces for easier understanding and fix bugs on website and application

AlphaAI

Summer Intern   Aug 2022
• Setup a machine learning model to locate keypoints of vehicles for post-accident damage analysis on Guacamole

COMMUNITY INVOLVEMENT & SCHOOL CLUBS

• Orbis Student Ambassador (50 hours for fundraising, events)
• District Volunteer Service Gold Award (100+ hours)
• Executive Vice Chairman - HK Joint School Mathematical Society - organised a joint-school math competition to raise student's interest in fields like number theory and algebra
• Upchieve Volunteer Math Tutor for underprivileged (100+ hours)

• Basketball Team Point Guard
• English Debate Team (Captain) - Trained students who eventually obtained 2nd Runner-up in Singtao Competition
• Mathematics Society (Chairman)
• Youth Initiative Vancouver Volunteer and Math TA
• Hour of Code Student Tutor - Lead local workshops at HK Science Museum and Hong Kong Productivity Council on Java and C++

COMPETITIONS & AWARDS

• Uber Global Hackathon- One of the five Regional Finalists by designing an application to [detect allergens from computer vision](#)
• S.T. Yau High School Science Award (Asia) (Computer Science) Honourable Mention - Physics-informed DeepONets for pattern formation
• HKU St. John's College Hackathon Champion - ~30 teams, [developed a physics-informed neural network to eliminate invasive species](#)
• IEEEXtreme 24-hour Collegiate Programming Competition: Top 10% Global
• Hong Kong Physics Olympiad - First Class Honour (2021) - First in school history
• International Mathematical Olympiad Preliminary Selection Contest - Gold Award (2022)
• Euclid Top 20 Global (2022) - Math Competition held by the University of Waterloo [Rankings](#)
• Stanford Math Meet Honourable Mention (Top 10%)
• Canadian Computing Competition Top 75 Global (2022) [Rankings](#)
• International Coding Elite Competition HK-MO-TW division 1st Runner-up, Global Qualifier
• Future Bright Leaders Award - The Outstanding Young Persons' Association
• IET Hong Kong Award 2022 for publication that envisions a Smart Laboratory in the future
• International Parliamentary Debate Competition - Best Debater & 1st Runner Up (2021)
• HOT25 Race (27km) Youth Men's First Place

CERTIFICATIONS

• Kaggle - Intro to Machine Learning, Computer Vision, Machine Learning Explainability
• Programming Hub - Java Developer, Blockchain Developer, Computer Vision
• Coursera - Data Science related courses
• Differential Equations and Engineering Calculus- HKUx
• IEEE Member - attending conferences like ARITH, International Symposium on Applied Reconfigurable Computing
• Kayaking Three Star Award - HK Sailing Schools Association
• IELTS - 8.0
• Cambridge TMUA-Top 5% (7.9) (taking again this year)

PUBLICATIONS

• Chang, Jeffrey (2021): Moves required to solve Tower of Hanoi and 2 variants. figshare. Journal contribution. https://doi.org/10.6084/m9.figshare.17091965.v4

• Chang, Jeffrey (2022): The fun of splitting numbers. figshare. Journal contribution. https://doi.org/10.6084/m9.figshare.20129963.v1

PROGRAMMING LANGUAGES

• C++ for Data Structures and Algorithms
• Python for Machine Learning and Computer Vision