

## Tristan Chaang

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### Education

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#### Massachusetts Institute of Technology, Cambridge, MA

June 2027

- Candidate for Bachelor of Science in *Computer Science and Engineering*
- Candidate for Bachelor of Science in *Mathematics*
- Candidate for Minor in *Physics*
- Coursework Highlights: Algorithm Designs, ML, Quantum Computation, Statistics, Natural Language Processing, Software Design, Topology, Analysis

GPA: 5.0/5.0  
(Sophomore)

#### Sunway College, Kuala Lumpur, Malaysia

December 2022

- Valedictorian, “Top in the World” and “Best Across Four Subjects” Award
- Cambridge GCE A-Levels: 4 A\* SAT: 1550 IELTS: 8
- Coursework: Mathematics, Further Mathematics, Physics, Economics

#### Kuen Cheng High School (坤成中学), Kuala Lumpur, Malaysia

February 2021

- Star Student Award in 2019 for involvement in the International Math Olympiad
- Malaysian *Certificate of Education* (SPM): 10A+, 2A
- Coursework: 3 Languages, Advanced Math, 3 Sciences, World History, Chinese Literature

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### Awards & Accomplishments

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#### Citadel Securities 2<sup>nd</sup> Annual Quant Research Invitational – Champion (\$10000 Award)

Winter 2025

- Implemented stochastic methods for algorithmic trading, particularly *ETF & statistical arbitrage*
- Simulated a M. Carlo *Brownian Bridge* and performed *portfolio optimization* for pairs-trading
- Presented final strategy at the new Citadel Securities headquarters in Miami

#### William Lowell Putnam Mathematical Competition by MAA

2023-2024

- Honorable Mention (Top 100)

#### International Mathematical Olympiad

2018-2022

- Bronze Medals (2020, 2022) and Honorable Mentions (2018, 2019, 2021)

#### Malaysian Physics, Computational Linguistics, and Economics Olympiads

2020-2022

- Silver and Bronze Medals

#### Chen Jing-Run Cup Math Contest by Xiamen University Malaysia

2017-2020

- National Champion for 4 consecutive years

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### Experience

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#### Teaching Assistant (TA) and Grader

2024-

- For Algorithms (6.1210), Classical Mechanics (8.011), and Real Analysis (18.100A)
- Hold weekly office hours and recitations for the class
- Use animations I coded myself to present easier visualizations
- Proctor and grade the final exam

#### Global Teaching Laboratory, MIT International Sci and Tech Initiative (MISTI)

Winter 2025

- Trained the *Côte d'Ivoire* national team (in French) for the International Math Olympiad (IMO)

<b>Undergraduate Researcher</b> , CS & AI Lab (CSAIL), MIT <i>Self-Supervised Machine Learning Model for 3D Neurite Segmentation</i> <ul style="list-style-type: none"> <li>Design and test self-supervised ML models to process large amounts of uncured 3D brain scan data</li> <li>Train models using unlabeled electron microscopy data of the human and mouse cortex</li> </ul>	Fall 2024
<b>Webmaster and Actor</b> , MIT Life on Stage Theatre (LOST) <ul style="list-style-type: none"> <li>Perform for theatre and manage the club website</li> </ul>	2024-
<b>Undergraduate Researcher</b> , Department of Earth, Atmospheric, and Planetary Sciences, MIT <i>GPS/GNSS Jupyter Notebook Interface for Time Series Analysis</i> <ul style="list-style-type: none"> <li>Develop a Jupyter Notebook that allows users to utilize time position series data</li> <li>Integrate data from various GPS organizations into a user-friendly interface for easier access</li> <li>Outline patterns and correlations from time series data to understand changes of Earth's surface</li> </ul>	Spring and Summer 2024
<b>Teaching Assistant (TA)</b> , Department of Physics, MIT <i>TA for 8.011 (Physics I / Classical Mechanics)</i> <ul style="list-style-type: none"> <li>Help students during group activities</li> <li>Grade problem sets on a weekly basis</li> </ul>	Spring 2024
<b>Undergraduate Researcher</b> , Department of Mathematics, MIT <i>Investigating the Motion of Pilot-Wave Walkers in a Circular Corral</i> <ul style="list-style-type: none"> <li>Study the behavior of droplets bouncing on a vibrating oil bath</li> <li>Demonstrate the consistency of pilot-wave dynamics with quantum mechanics</li> <li>Use MATLAB to model droplet dynamics and compare with experimental results</li> </ul>	Winter 2024
<b>Youth Stem Cup 2023</b> , Malaysia <i>Head of Problem Selection Committee (PSC)</i> <ul style="list-style-type: none"> <li>Organize the first ever student-led national science Olympiad in Malaysia</li> <li>Lead the PSC to: Invite problem setters, produce the exam paper, cross-check validity etc.</li> <li>Successfully run the physical event with ~ 1200 participants from all over the country</li> </ul>	Summer 2023
<b>IMO Committee Malaysia</b> , Malaysia <i>Trainer and Problem Selection Committee Member</i> <ul style="list-style-type: none"> <li>Train students in the IMO Selection Camp of Malaysia</li> <li>Write handouts and set problems for camp tests and IMO shortlist proposals</li> </ul>	2021-2023
<b>Academic Department, Kuen Cheng High School</b> , Malaysia <i>Math Team Trainer, Math Presenter, Peer Learning Program Volunteer</i> <ul style="list-style-type: none"> <li>Trained and led the school team to win national first places in multiple large-scale contests</li> <li>Give talks and interactive presentations to foster mathematical interest</li> <li>Help students in academic need in math, physics and chemistry to fulfil graduation requirement</li> </ul>	2018-2023

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### Activities & Extracurriculars

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<b>2024 Discover Citadel and Citadel Securities</b> , New York <ul style="list-style-type: none"> <li>Explore and learn about different roles at Citadel through various activities and networking events.</li> </ul>	Spring 2024
<b>Life on Stage Theater (LOST)</b> , MIT <ul style="list-style-type: none"> <li>Cast actor for one of the lead characters in a student-led theater play</li> </ul>	2024-Present
<b>Swimming Club</b> , Sunway College, Malaysia <ul style="list-style-type: none"> <li>Help the committee run pool activities and teach beginners breaststroke and freestyle</li> </ul>	2021-2023
<b>Science Week Opening Ceremony</b> , Kuen Cheng High School, Malaysia	2019

- Plan and execute a large-scale performance for the annual science week
- Successfully performed a huge elephant toothpaste demonstration

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### **Skills & Interests**

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**Languages:** Fluency in English, Mandarin Chinese, Cantonese and Malay

**Software:** Familiarity with Python, C++, C, JavaScript, HTML5, LaTeX, MATLAB, Mathematica

**Authored:** “Techniques for High School Mathematics Contests” (on Google Books)

**Interests:** Abstract Algebra, Topology, Quantum Physics, AI, Programming, Linguistics, NLP