Cheng-chia Lee

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Education

Hsinchu International Academy | Hsinchu, Taiwan *Present*

- GPA: 4.41/4.00
- AP Courses: AP Macroeconomics, AP Calculus BC, AP Computer Science Principles, AP Computer Science A, AP Psychology, AP Chinese, AP Chemistry, AP pre-Calculus
- High Honor Roll Recipient (2023,2024) for academic achievement

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Extracurriculars

First Author | IEEE Transactions on Evolutionary Computation (TEVC) | Manuscript in Preparation 2025

- Developing a research paper on hybridizing multi-objective evolutionary algorithms (MOEAs) with reinforcement learning for dynamic path planning.
- Designed and tested algorithms integrating NSGA-II with adaptive learning strategies to optimize performance across shifting objectives.
- Prepared manuscript for submission to IEEE TEVC, focusing on balancing theoretical novelty with practical applications in robotics and intelligent systems.

Researcher | Youth Turing Program (YTP) Stage II | Project-Based Research 2025

- Conducted an advanced research project under mentorship, applying computational intelligence techniques to real-world problems.
- Collaborated with peers in a high-level academic environment, developing models and analyzing algorithmic performance.
- Produced a written report and presentation summarizing findings, highlighting both theoretical insights and applied results.

Selected Participant | Mathematics and Science Talent Cultivation Program | National Tsing Hua University Sep 2023–2025

- Engaged in weekly enrichment sessions led by NTHU professors and researchers, solving advanced problems in number theory, combinatorics, algebra, and geometry at or above Olympiad level.
- Strengthened theoretical foundations through lectures, workshops, and peer collaboration, enhancing logic, proof techniques, and creative problem-solving.
- Pursued the long-term goal of qualifying for Taiwan's International Mathematical Olympiad (IMO) training team through intensive preparation.

Participant | Mathematics and Science Talent Cultivation Program | Northern Taiwan Sep 2024–2025

- Selected among high school students in the northern region with a strong interest in mathematics and scientific research.
- Received full-day Saturday instruction each semester in calculus and linear algebra, with emphasis on scientific applications such as differential equation models and linear algebra foundations for quantum computing.
- Built early research-level mathematical foundations to prepare for advanced study and contribute to long-term scientific innovation.

Contributor | iGEM (International Genetically Engineered Machine) | 2025

- Contributed to the team's iGEM wiki by documenting experiments, protocols, and project rationale.
- Structured content for clarity, integrating visuals, data, and references to communicate research progress effectively.
- Enhanced team's visibility and reproducibility through meticulous online documentation and collaborative editing.
- Awarded the gold medal.

Awards & Honors

- USACO Gold Medalist | USA Computing Olympiad (USACO) | 2024–Present
  Advanced to the Gold division through consistent problem-solving performance in national contests. Demonstrated mastery in algorithms and data structures used in competitive programming.
- Qualifier | USA Junior Mathematical Olympiad (USAJMO) | 2025
  Earned USAJMO qualification through strong AMC and AIME scores, ranking among the top 200 pre-college problem solvers in the United States.
- Contestant rank 122 | Taiwan Olympiad in Informatics Selection | 2025
  Ranked 122nd nationwide in Taiwan's prestigious informatics selection exam, competing among the country's top high school programmers.
- Top Scorer rank 1st in Taiwan | AIME II | 2025
  Scored 12 out of 15 points in the American Invitational Mathematics Examination II, tying for first nationwide in Taiwan.
- National Top 0.4% | AMC 10A | 2025
  Ranked within the top 0.4% nationwide in AMC 10A in Taiwan, highlighting strong mathematical reasoning and competition skills.
- National Top 0.8% | AMC 12A | 2026
  Ranked within the top 0.8% nationwide in AMC 12A in Taiwan, highlighting strong mathematical reasoning and competition skills.
- Nominee | APMOC Recommendation (NTHU Gifted Program) | 2025
  Selected and recommended by the National Tsing Hua University gifted program to participate in the Asia Pacific Mathematical Olympiad for Primary and Secondary Schools.

- Nominee | APMOC Recommendation (NTU Gifted Program) | 2025
  Recommended by the National Taiwan University gifted program to APMOC, reflecting high academic achievement in mathematics.
- National Top 5% | Taiwan Mathematics Talent Test (TMT10) | 2025
  Placed in the top 5% nationally, showing competitive excellence in problem-solving speed and accuracy.
- National Top 6% | AMC 10 | 2025
  Ranked among the top 6% nationwide in AMC 10 in Taiwan, reinforcing consistent mathematical contest performance.
- Certificate of Completion | NTU Gifted Program | 2025
  Completed NTU's advanced gifted program in mathematics and computer science, gaining exposure to higher-level problem-solving and research methods. This program accepts only 30 students out of 400 students.
- Certificate of Completion | NTHU Gifted Program | 2025
  Graduated from NTHU's competitive gifted training program, recognized for advanced ability in STEM disciplines.
- 11th Place | Junior Turing Program Preliminary | 2025
  Ranked 11th nationwide in the preliminary round of the Junior Turing competition, focused on algorithmic thinking and programming.
- 26th Place | Junior Turing Program Final | 2025
  Advanced to the final round and ranked 26th nationwide, showcasing persistence and strong computational skills.
- AMC 10 Score: 94.5 | AMC 10A | 2024
  Earned AIME qualification through AMC 10A performance.
- AIME Qualification | American Mathematics Competitions | 2025
  Invited to AIME following top national AMC results in both AMC 10A and 10B.
- AIME Qualification | American Mathematics Competitions | 2026
  Invited to AIME following top national AMC results in both AMC 12A and 12B.
- Invited Participant | Youth Turing Program (YTP) Stage II | 2025
  Earned the qualification to participate in the prestigious second-stage YTP project-based research program, recognizing advanced computational and problem-solving ability.

Internship / Community Service / Volunteering Experience

Student Teacher (Volunteer) | Hsinchu County Emei Elementary School | Hsinchu, Taiwan Aug 2025

- Completed 15 approved volunteer hours assisting in classrooms as a student teacher.
- Guided younger students through lessons using examples, drawings, and games to adapt to different learning paces.
- Developed public speaking and leadership skills by managing classroom activities and explaining concepts clearly.

- Learned patience, adaptability, and the importance of encouragement in motivating students.

Student Volunteer | Ton-Yen General Hospital | Hsinchu, Taiwan Jul 2024

- Completed 24 approved volunteer hours assisting patients with directions and basic needs.
- Helped maintain a welcoming environment for visitors while supporting hospital staff.
- Gained firsthand exposure to healthcare operations and patient care.

Volunteer | Hsinchu Nanliao Harbor | Hsinchu, Taiwan Mar 2025

- Completed 4 approved volunteer hours participating in a beach cleanup.
- Collected, sorted, and documented shoreline litter to protect marine life and improve the environment.
- Gained awareness of pollution's impact on coastal ecosystems and the value of community action.