

## EDUCATION

Chongqing Yucai Secondary School (Chongqing, China)

GPA: 4.0/4.0 | AP Curriculum (College Board's AP Scholar with Distinction)

### Academic Programs & Competitions

Cathaypath Institute of Science — Renewable Energies

Learned conversion principles, technologies, and integration of clean energy sources, design and operation of energy-collecting systems, and their economics from UCLA's professor Nasr Ghoniem. Led a team that investigated tidal energy technologies' history, principles, impacts and prospects, and produced a 26-page paper. Obtained a final grade of 90.4%

COMAP's HiMCM 2020

Attended lectures on advanced mathematics (linear algebra, prioritization, mathematical modeling, etc.) Worked with 3 teammates in designing models to prioritize action and funding for plant conservation in Florida by investing in biodiversity conservation activities for endangered and threatened species. Used MATLAB and LINGO to implement codes and algorithms.

S.T. Yau High School Science Award

Chosen to join the competition with 2 teammates, which required 10 months of preparation that included taking supplementary classes (on topics like fluid mechanics and acoustics) from physics teachers and receiving research mentorship. Completed an academic paper titled "Singing" Tube: Excitation and Resonance of Airflow in Corrugated Cavity. Presented our work to Tsinghua University professors

Chongqing Eagle Project (Chongqing Education Bureau)

Selected from 800+ candidates, attended lectures in communication physics and C++ programming from Prof. Di Ke from Chongqing University of Posts and Telecommunications. led 2 teammates in utilizing infrared sensor technology to create intelligent shopping carts to enhance shopping experience. Crafted a prototype cart that follows a person's gestures. Published a report on a Chinese academic journal, ISSN 1003-9716.

Yale University's Financial Markets (through Coursera)

Learned the basics of finance and risk management, and behavioral finance principles. Aiming to eventually commercialize my innovations, I learned about how the market works and to assess/manage risks. The course enhanced my ability to evaluate the feasibility of commercialization by conducting effective research and financial analysis.

## PROJECTS

Smart Kitchen Waste Pickup Program, Jun 2020 to Present

Website link: <https://ecoist-ste.github.io/promotion-website/>

My passion project, combining my interests in environmental protection, data processing and CS. Designed a three-parties system—data recording, algorithm running, and user receiving—to increase the efficiency of waste collection process by reducing fuel consumption and unpleasant odor resulted from excessively accumulated garbage in a waste bin based on 3 factors: total distance traveled by garbage truck, height of waste in bin, and length of time waste was disposed (last 2 are from sensors installed in the bins).

Eco-experience Facility Model, Designer & Team Leader, Dec 2020 to Apr 2021

Spearheaded 5-member team in designing an eco-experience facility model using Sketchup that involves exhibition of water flow system, plants, and renewable energy to promote environmental awareness by bringing people closer to nature and experiencing its benefits. Conducted surveys to find out people's attitude toward it and completed a report.

Environmental Group Research and Field Study, Jul 2020 to Oct 2020

Traveled to Yunnan Province to test the efficacy of our self-designed Sphagnum palustre water purifier to provide local farmers economical and sustainable access to clean water. Contacted local radio stations to broadcast our project and invited experts to our presentation. Our project is recognized by the Shangri-La Alpine Botanical Garden.

## HONORS and AWARDS

COMAP's 2020 High School Mathematical Contest in Modeling, Finalist (Top 7%)

S.T. Yau High School Science Award, Bronze Award (6th place)

Envirothon, 19th Place (300+ finalists) and Grade A (Case Study)

Youth Impact Communication Initiative, Excellent Award

USAD China In-Country Competition, 6th Highest Overall Score

Future Business Leaders of America-Broadcast Journalism Category, 2nd place

High School Entrepreneurship Competition, Third Prize

## EXTRACURRICULAR ACTIVITIES

Environment Club, President (G10, G11) & Advisor (G12), Oct 2019 to Present

Facilitated lectures on environmental science and current issues like impact of burgeoning human population for 41 members. Hosted activities like promoting environmental awareness and reusing water; presented my projects. Published articles online like benefits of plants and renewable energy sources. Advise the club on relevant activities to hold.

Independent Learning, Programming

Learned various programming languages [C, C++, Python, JAVA, and MATLAB] and website-building languages [HTML, CSS, SCSS, Java script]. My technical skills were particularly useful in my projects and competitions, including HiMCM, CTB, YIC, and my passion project.

## COMMUNITY SERVICE

Chongqing Jiulongpo Special Education School, Sep 2019 to Oct 2021 (except 2020)

Our group of 7 is tasked to teach basic concepts like colors, fruits, vegetables, common Chinese pleasantries.

Create PPT for our visual aid. Supervise the kids in different activities. It is our goal to ease the kids' transition and integration into society.

TiaoDeng River Trash Pickup, Jun 2021 to Present

Every weekend, go to the banks of the river to pick up trash, and then sort them accordingly before disposal.

From time to time, give "informal lectures" to kids playing in the area to be mindful of how they dispose trash.

Successfully invited 5 of my classmates to join me in this activity.

## HOBBIES

Basketball, HIIT Workout, Aerobic Exercises, Boxing, Reading, Music, Movie Appreciation, Programming