

# HI! I'M CLAIRE CHEN!

I'M A JUNIOR AT HOMESTEAD HIGH SCHOOL...  
(CLASS OF 2021)

I **love** BUILDING, TINKERING, INVENTING,  
AND CREATING THINGS...

WE DESIGN, BUILD, & LAUNCH ROCKETS IN AEROSPACE CLUB - THIS ONE REACHED ALMOST 1000 FT! THROUGH LEADING THE SOFTWARE TEAM I REALIZED HOW IMPORTANT DATA IS! AEROSPACE CLUB REALLY SOLIDIFIED MY INTEREST IN EARTH & SPACE SCIENCE, AND IN DOING RESEARCH!

My HOBBY:

I BUILD TESLA COILS AND MORE, WHICH WAS THE ABSOLUTE COOLEST WAY TO LEARN ABOUT ELECTROMAGNETISM!

... To **learn** HOW STUFF WORKS!

THESE PROJECTS REALLY TESTED MY CREATIVITY & PERSEVERANCE, AND MADE ME A MUCH STRONGER PROBLEM SOLVER!

(MY SCHOOLMATES ALSO KNOW ME FOR MAKING FANCY WATCHES...)

↑ LESS THAN \$50 OF PARTS, ALL RECYCLED OR SCAVENGED!

... To **help** OTHERS & MAKE THE WORLD A BETTER PLACE!

Athena

(HHSATHENA.ORG)

I LED DEVELOPMENT TO CREATE THIS SITE SO STUDENTS CAN GET HELP FROM PEER TUTORS WHEN SCHOOL WAS CLOSED DUE TO COVID-19.

IT IS HELPING OVER 110 STUDENTS!

SOLVED CHINESE

AN ONLINE PLATFORM FOR LEARNING CHINESE CHARACTERS USING A NEW METHOD WE DEVELOPED! THIS WAS ONE OF MY FIRST EXPERIENCES WORKING WITH A BIG TEAM & I LOVED IT!



... To **teach**!

I'M TECH LEAD OF HHS ROBOTICS - BESIDES BEING SYSTEM ARCHITECT, I ALSO RUN WORKSHOPS ABOUT CODING AND CONTROL THEORY, TEACHING 50 STUDENTS!

I'M ALSO A TA AND STUDENT TUTOR FOR AN INTRODUCTORY CS CLASS - WORKING WITH THE STUDENTS IS ALWAYS AWESOME!

... To **HAVE fun**!



# Claire Chen

[ctychen.github.io](https://github.com/ctychen) | Student | Homestead High School, Class of 2021  
<https://github.com/ctychen>

## SKILLS

Java (advanced) | Python (intermediate) | Circuit and PCB design (EAGLE, KiCAD) (proficient) | Mandarin (advanced) | French (intermediate) | Web & mobile development - Android (proficient) | Microsoft Office & GSuite (proficient) | Graphics design (proficient) | Statistical modeling and analysis (intermediate)

## EXTRACURRICULARS & ACTIVITIES

Robotics | Physics Club | Aerospace Club | Computer Science Student Tutor | Science Bowl - Team B Captain | FLL Team 24713 Mentor | Homestead Academic Center & Math Lab tutor | California Philharmonic Youth Orchestra | HHS Choir | Sunnyvale Middle School Science Bowl Mentor | HHS Athena Developer, CoLead

## HIGHLIGHTED EXPERIENCE & ACTIVITIES

### Homestead Robotics, Team 670 — 2017 - present

- Finalist - Utah Regional - 2018
- System Award - Calgames - 2018
- Industrial Design Award - Silicon Valley Regional - 2019
- Innovation Moonshot Award - Calgames - 2019
- **Tech Lead - May 2019 - present**
  - Designed high level software, control and electrical systems for Team 670's robots, as well as building a library and test framework.
  - Developed workshops and lessons to give students hands-on experience in programming, control, and problem-solving, using 'minibots' we designed and created for this purpose.
  - Led a team of over 20 students in designing, building, and testing systems for a robot.
  - Managed project workflow and scheduling, worked with mentors and other subteams to establish long-term goals. Wrote proposals for funding and presented regular project updates.
  - Guided the team's R&D efforts in order to improve the control system, discover new opportunities and solve old problems. For example, this year, we implemented a new steering controller for autonomous driving, as well as a vision targeting and tracking system.
- **Drive Coach & Pit Crew - October 2019 - present**
  - Applied programming and technical skills to quickly troubleshoot and fix issues with the robot between competition matches.
  - Coordinated with other teams to develop strategies based on game data analysis, communicated with them to deal with changing conditions in real time.

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## EDUCATION

### Homestead High School Cupertino

AUGUST 2017 - EXPECTED  
GRADUATION JUNE 2021

GPA: 3.909 UNWEIGHTED  
SAT: 1540 | PSAT: 1490

## RELEVANT COURSEWORK

- AP Calculus BC
- AP Statistics
- AP Physics C: Mechanics
- AP Physics C: Electricity & Magnetism (self study)
- AP Computer Science A
- Introduction to Java
- Computer Algorithms (ASTAR course)
- Chemistry Honors
- Biology
- AP Chinese Language & Culture
- French 1 - 3
- AP US History

## AWARDS

- NCWIT Aspirations in Computing Regional Rising Star
- USAMTS Silver Award
- Green and White Award, Science
- William Shakespeare Award, Writing
- AP Scholar with Honor
- AIME qualifier

- Developed a system for collecting and analyzing data about robots. The results of the analysis were used almost immediately to build a "game plan" during competitions.

## Homestead Physics Club

### ● President - August 2019 - present

- Managing communications with the student admin team and school administration. Planning and scheduling club events, led general meetings.
- Designed physics demos and experiments to educate club members, as well as hosting study sessions and tutoring physics students at Homestead.
- In the absence of an AP Physics C: Electricity and Magnetism course at school, developed and taught a study program for students interested in taking the AP Exam.

## Homestead Aerospace Club

### ● Software Lead | Research Co-lead - February 2019 - present

- Contributed to planning and developing research projects, like a rocket with onboard sensors to collect atmospheric data
- Collected and analyzed rocket flight data using JMP SAS as well as writing scripts to process it
- Designed and used simulations to predict optimal properties for model rockets

## Homestead High School Athena (<https://hhsathena.org/>)

### ● Developer - Project Co-lead | Admin - August 2019 - present

- Led coding and software development for creating an online platform for Homestead High's student peer tutoring program
  - Due to the current health situation and online learning, this website is one of the main ways students can access tutoring. We have over 110 users signed up, and growing.
- Designed and coded a user interface for the forum and web pages
- Working on implementing more project management tools like Kanban board, bug reporting, and feature requests to get feedback from end users