

Hello! I'm CLAIRE CHEN

(my schoolmates
also know me
for making
fancy watches!)



I'm a senior at Homestead High School!

I LOVE building, tinkering, investigating,
and creating things...

...to LEARN how stuff works!

One of my hobbies is building Tesla coils and other high voltage contraptions, wearable devices, and experimenting with radio -- it's the absolute coolest way to learn about electromagnetism! These projects tested my creativity and perseverance, and made me a much stronger problem solver.



...to TEACH!

...to EXPLORE!

Under Dr. Jian Ge (UF)'s mentorship, I developed a new method for detecting Earth-like exoplanets, taking advantage of neural networks and the latest tools for data processing. Not only did I get to dive deep into one of my favorite subjects, it opened my eyes to the potential of applying new computational developments to approach old problems. I found 6 new potential exoplanet candidates so far --

And it's only the beginning!



I lead the Development team at Homestead Robotics; I've also served as Tech Lead. Besides being system architect, I also run workshops about coding, control theory, software development, and system design -- both at school and for the wider community. I created minibots to help, opening opportunities for learning by doing to more students.

...to HELP OTHERS
& MAKE THE WORLD A
BETTER PLACE!



[HHSATHENA.ORG](https://hhsathena.org)

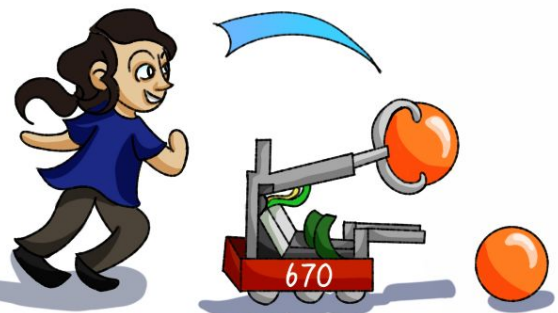
I LED DEVELOPMENT
OF THIS PEER TUTORING
SITE - IT'S HELPED OVER
250 STUDENTS ACCESS
ACADEMIC SUPPORT WHEN
SCHOOL WAS CLOSED DUE TO
COVID-19!

SOLVED

My 1st time working
on such a big project!
It's an online
platform for
learning
Chinese charac-
ters that we
created --



...to HAVE FUN!



A BIT ABOUT ME

My Skills:

JAVA

PYTHON

CIRCUIT DESIGN (KICAD, EAGLE)

VIDEO EDITING

WEB & MOBILE DEVELOPMENT

ILLUSTRATION

VISUAL DEVELOPMENT

● PROFICIENT
● INTERMEDIATE

Languages

CHINESE

FRENCH

● FRESHMAN (9)
● SOPHOMORE (10)
● JUNIOR (11)
● SENIOR (12)

Some of my activities

ROBOTICS

● ●

RESEARCH

● ●

HHS ATHENA PRESIDENT + LEAD DEVELOPER

● ●

PHYSICS CLUB

● ●

AEROSPACE CLUB

● ●

SCIENCE BOWL-TEAM B CAPTAIN

● ●

ACADEMIC CENTER + MATH LAB TUTOR

● ●

FREE/LANCE DIGITAL ART & ILLUSTRATION

● ●

ORCHESTRA

● ●

HHS CHOIR

● ●

PIANO

● ●

CROSS COUNTRY

● ●

MIDDLE SCHOOL SCIENCE BOWL MENTOR

● ●

MATH CLUB

● ●

COMPUTER SCIENCE TEACHER'S ASSISTANT

● ●

GARAGE ELECTRONICS BUILDS

● ●

STARGLOVE STUDIOS - WEB CONTENT DEVELOPMENT

● ●

HOMESTEAD ROBOTICS

Vice President of Development | May 2020 - present

- Set goals and direction for Robotics in remote learning as well as developing organization structure & procedure for future years
- Organized online workshops to teach mechanical design, programming, and systems design, using interactive activities & projects to engage members
- Presented at local events and conferences about team's approach to software and teaching

Tech Lead | May 2019 - May 2020

- Designed high level software, control and electrical systems for Team 670's robots, as well as building a library and test framework.
- Led a team of over 40 students in designing, building, and testing systems for a robot.
- Developed workshops and lessons to give students hands-on experience in programming, control, and problem-solving
- 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.

Finalist - Utah Regional - 2018

Systems Design Award - Calgames - 2018

Industrial Design Award - Silicon Valley Regional - 2019

Innovation Moonshot Award - Calgames - 2019

Finalist - Utah Regional - 2020

Innovation in Control Award - Utah Regional - 2020

KLA Creativity Award - 2020

AEROSPACE CLUB

President | May 2020 - Present

Secretary | August 2018 - May 2020

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
- Organized meetings and presentations, including demos we built and fun games
- Explored all kinds of things that fly with my peers!

ASTRONOMY RESEARCH

Working with a mentor, I developed new and improved methodologies to search for Earthlike planets. Creating a neural network model, applying deep learning and a new fastfolding program to process Kepler mission data in a completely new way, I found 6 potential new planets, and published my results for Regeneron Science Talent Search. Along the way, I learned how to write a scientific paper and present and communicate my results. I'm still working on this research as of today -- I'm performing more detailed analysis on these candidates to find out more about these stellar systems and potentially confirm the observations!

PHYSICS CLUB

Activities Director | May 2020 - present

President | August 2019 - May 2020

- As President, with reorganization, new activities, and outreach, I grew a struggling club of 5 members into a thriving one with more than 30 active members. I run demos and experiments at meetings, organize tutoring and test prep sessions for every physics class, and lead a program to help students study Electricity & Magnetism beyond the classes at school.
- I managed communications between student admin team and school administration.
- Planned and scheduled club events, led general meetings.
- Through online learning, I helped set up and run a Discord server for over 100 physics students as a place where they could find tutors, get help when needed, and discuss physics.

AWARDS

- National Merit Semifinalist (2020)
- President's Volunteer Service Award, GOLD (2020)
- NCWIT Aspirations in Computing Regional Rising Star (2020)
- Green and White Award, Chemistry Honors (2020)
- AP Scholar with Distinction (2020)
- William Shakespeare Award (2019)
- USAMTS Silver Award (2018)
- AIME Qualifier (2018)

HOMESTEAD ATHENA

President, Development Lead | May 2019 - present
Academic Center Tutor | September 2017 - present

Academic Center and Athena provide peer tutoring and mentorship to foster academic development in all subject areas. It's open to everyone and helps both tutors and tutees learn and improve their communication skills.

I tutored students in math, science, and history. When we moved to remote learning, I led the development and organization of Academic Center's new online platform Athena, which is now a major academic support resource for students. I designed and coded the site, and worked with staff and other students to expand access to tutoring and mentorship. Next step: working with my school district to expand Athena and bring tutoring and support to more schools!

STARGLOVE STUDIOS

Director, Production Team, Art Department Lead, Researcher, Editor | August 2019 - present

I co-lead a small studio with an international team of student history enthusiasts. We have 2 developing projects: The Vienna Contract, a political thriller radioplay set in pre-WWI Vienna, & Time Capsule, a comedic podcast hopping through fun facts and obscure events in world history. As a producer and lead of the art department, I designed art concepts, researched, & managed the team, drawing inspiration from period fashion, architecture, and design. As leader of the organization Starglove Studios, I help all our project teams whenever they need it as well.