

### Contact Information

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### Education

2019-2023 **Bachelor of Science, Mathematics & Physics Minor**, *College of Arts and Sciences*,  
University of New Haven.  
Dean's List (2019-Present), Presidential Scholarship (2019-2023).  
Major GPA: 4.00 Overall GPA: 4.00

### Research

- 2022 **Using Machine Learning to Catalog Accreted Stars in Gaia ESA DR3 Survey.**  
*Massachusetts Institute of Technology*  
Advised by Prof. Lina Necib, MIT Kavli Institute for Astrophysics and Space Research.
- 2022 **Tangent Function As A Solution Of A 3-Dimensional Functional Equation.**  
*University of New Haven*  
Advised by Prof. Ramesh Sharma, Department of Mathematics and Physics.
- 2021-2022 **Computational Analysis on Nucleation Mechanisms of Atmospheric Nitrate and Ammonia Clusters.**  
*University of New Haven & Duke Kunshan University*  
Advised by Prof. Dequan Xiao, Prof. Chong Qiu, Chemistry and Chemical Engineering Department.
- 2021-2022 **Dark Energy and Dark Matter as Five-Dimensional Stereographic Projection.**  
*University of New Haven*  
Advised by Prof. Nikodem Poplawski, Prof. Kevin Green, Department of Mathematics and Physics.
- 2019-2020 **Single-Atom Zinc Catalyst for Co-Production of Hydrogen and Fine Chemicals in Soluble Biomass Solution.**  
*University of New Haven*  
Published paper: <https://doi.org/10.1016/j.apmate.2022.100058>  
Advised by Prof. Dequan Xiao, Chemistry and Chemical Engineering Department

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## Publication

- 2022 **Single-Atom Zinc Catalyst for Co-Production of Hydrogen and Fine Chemicals in Soluble Biomass Solution**, Ma, J.; Li, X.; Li, Y.; Jiao, G.; Su, H.; Xiao, D.; Zhai, S.; Sun, R..  
Advanced Powder Materials 2022, 1 (4), 100058. doi.org/10.1016/j.apmate.2022.100058

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## Conferences & Talks

- 11/2022 **Department Seminar, University of New Haven.**  
1 hour talk: "Undergraduate Research Experience from Differential Equations to Theoretical Astrophysics."
- 11/2022 **Northeastern Section/Mathematical Association of America Fall 2022 Conference, Keene State College.**  
18 minutes slide presentation: "Tangent Function As A Solution Of A 3-Dimensional Functional Equation."
- 10/2022 **Honorable Mention, Gulf Coast Undergraduate Research Symposium, Rice University.**  
15 minutes slide presentation: "Using Machine Learning to Catalog Accreted Stars in Gaia ESA DR3 Survey."
- 8/2022 **Summer MKI Undergraduate Research Forum, MIT.**  
10 minutes of slide presentation: "Using Machine Learning to Catalog Accreted Stars in Gaia ESA DR3 Survey."
- 8/2022 **2022 MIT Summer Research Poster Session, MIT.**  
Poster presentation: "Using Machine Learning to Catalog Accreted Stars in Gaia ESA DR3 Survey."
- 4/2022 **National Conference on Undergraduate Research, Virtual.**  
12 minutes of slide presentation: "Dark Energy and Dark Matter as Five-Dimensional Stereographic Projection."
- 11/2021 **Sigma Xi Student Research Conference, Virtual.**  
Poster presentation: "Dark Energy and Dark Matter as Five-Dimensional Stereographic Projection."
- 10/2021 **Gulf Coast Undergraduate Research Symposium, Rice University.**  
15 minutes slide presentation: "Dark Energy and Dark Matter as Five-Dimensional Stereographic Projection."
- 10/2021 **Summer Undergraduate Research Fellowship Showcase, University of New Haven.**  
Video presentation: "Can the Shape of Our Universe Explain the Dark Matter?"
- 8/2021 **Summer Undergraduate Research Fellowship Presentation, Virtual.**  
15 minutes slide presentation: "Can the Shape of Our Universe Explain the Dark Matter?"

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## Awards & Certifications

- 2022 **Collegiate Mathematics Competition 2022 – Northeastern Section/Mathematical Association of America, Keene State College.**  
Second place.
- 2022 **Bucknall Family Undergraduate Research or Experiential Learning Award, University of New Haven.**

\$10,000 awarded to one university student for outstanding research or experiential learning achievements.

2022 **Research Intern (Fall 2022)**, *Massachusetts Institute of Technology*.

Granted research position directly funded by a MIT faculty member.

2022 **MIT Summer Research Program**, *Massachusetts Institute of Technology*.

2022 **Academic Excellence Award in Physics**, *University of New Haven*.

Awarded to 1 student in the Department of Mathematics and Physics.

2022 **Academic Excellence Award in Mathematics**, *University of New Haven*.

Awarded to 1 student in the Department of Mathematics and Physics.

2021 **Summer Undergraduate Research Fellowship (SURF) – McHale Fellow**, *University of New Haven*.

Awarded to 3 students in the SURF program.

2021 **CRLA International Tutor Training Program Certification Level 1&2**, *University of New Haven*.

2019 **The Hector and Wanda Levesque Memorial Scholarship Award for Science**, *Academy of the Holy Family*.

Awarded to 1 graduating senior.

2019 **Valedictorian**, *Academy of the Holy Family*.

2018 **Worcester Polytechnic Institute STEM Leadership Book Award**, *Academy of the Holy Family*.

Awarded to 1 student in the school.

2018 **UConn Avery Point Book Award**, *Academy of the Holy Family*.

Awarded to 1 student in the school.

2016 **The 4th International Deutscher Irmler – Klavierwettbewerb Piano Contest 1st Prize**.

2015 **China National Opera and Dance Drama Theater Piano Level 10/10**.

2013 **Chinese Dancers Association Level 9/10**.

2011 **Artwork Collection Certificate**, *Shenzhen Summer Universiade*.

Artwork collected by Universiade athletes.

## Teaching

2022 **Amity Science Research Mentor**, *Amity Regional High School*.

Served as the main supervisor/mentor for a computational chemistry project.

2020-2022 **Learning Assistant**, *University of New Haven*.

Spring 2022 PHYS 2205 Electromagnetism/Optics with Laboratory

Fall 2021 MATH 1118 Calculus II

Spring 2021 MATH 1118 Calculus II

Fall 2020 MATH 1118 Calculus II

2020-2022 **Undergraduate Peer Tutor**, *University of New Haven*.

Tutored undergraduate classes in math, physics, chemistry, biology, and their labs.

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## Community Outreach

- 6/2022 **Director & Panelist of 2022 Summer Undergraduate Research Fellowship Alumni Panel, *University of New Haven*.**  
Coordinated and hosted the Panel Discussion.  
Established and promoted the SURF Alumni Network to 2022 SURF participants.
- 2022 **Volunteer at the Undergraduate Open House, *University of New Haven*.**  
Represented the Department of Mathematics and Physics for 4 times.  
Reached out to prospective students and parents about the program details.
- 3/2021 **Panelist at Courageous Conversations: The Rise in Anti-Asian Violence, *University of New Haven*.**  
Delegated Asian international students to speak up against violence against Asian communities.  
Responded and proposed new strategies to implement diversity and inclusion.
- 2020-2021 **President of Chinese Student and Scholar Association, *University of New Haven*.**  
Organized cultural events and maintained communication with the New York Chinese Consulate.  
Managed a budget of approximately 8,000 dollars and distributed COVID-19 resources to international students.
- 2018-2019 **Student Council President, *Academy of the Holy Family*.**  
Represented the student body at the school district and civic events and other meetings.  
Developed the agenda for and presided over the meetings of the Student Council.

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## Computer Skills

- Operating Systems Linux, macOS, Windows.
- Languages Python, Jupyter Notebook, PyTorch Lightning, Bash, SQL, HTML, C,  $\text{\LaTeX}$ .
- Softwares Avogadro, Gaussian, Vienna Ab initio Simulation Package, Visual Studio Code, GitHub, GarageBand

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## Languages

- English Native Proficiency
- Chinese Native Proficiency
- Japanese Minimum Professional Proficiency, JLPT N1 (most advanced level)

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## Interests

- Piano, Vocal Recording (YouTube Channel: [FelineClavicle](#))
- Swimming, Badminton, Basketball
- Asian Cooking