

MICHAEL HUANG

Senior at Phillips Academy | Interested in CSxPhysics research | michaelyhuang23@gmail.com

Education

Phillips Academy

GPA: 5.95/6, 2019–2023

Private high school at Andover MA (<https://www.andover.edu/>). I serve as the co-president of CS Club, Physics Club, Chemistry Club, VEX Robotics, and Techmasters (tech help). I worked as a math and physics tutor. I also serve as the Digital and Creative Director for The Revere, my school's foreign affair newspaper.

Tianhe Foreign Language School

2016–2018

Public middle school in Guangzhou China (http://en.thnet.gov.cn/2021-03/25/c_606135.htm). I was the top of the class in 4 out of 8 standardized comprehensive examinations and founded the FIRST robotics club at my school.

Research Projects

Effective Automated Stellar Substructure Detection using the Supervised Neural Clustering Algorithm

Not yet submitted for publication

Yihao Huang, Xiaowei Ou, Tri Nguyen, Lina Necib

As part of the Research Science Institute (RSI) program, I worked on developing a graph neural network based clustering algorithm to identify stellar substructures in the Milky Way. I worked at the Kavli Institute for Astrophysics and Space Research and was mentored by Xiaowei Ou, Tri Nguyen, and Prof. Lina Necib. This project won RSI's top 5 paper award.

Theoretically Efficient Parallel Density-Peaks Clustering

Not yet submitted for publication

Yihao Huang, Shangdi Yu, Julian Shun

I developed efficient parallel algorithms for density-peaks clustering under the mentorship of Shangdi Yu and Prof. Julian Shun at MIT's CSAIL as part of the MIT PRIMES program.

Efficient Algorithms for Parallel Bi-core Decomposition

To appear at APoCS 2023

Yihao Huang, Claire Wang, Jessica Shi, Julian Shun

I coauthored a paper that uses efficient parallel algorithms to solve the bi-core decomposition problem with my partner. We worked at MIT's CSAIL and were mentored by Jessica Shi and Prof. Julian Shun as part of the MIT PRIMES program. This project won 2nd place at Massachusetts Science and Engineering Fair and 1st place at the International S-T Yau Science Award contest. It was accepted into the AMS-PME conference at the Joint Math Meeting of 2021.

Other Projects

The Andover Computing Open

I cofounded The Andover Computing Open (TACO), a competitive programming community that hosts annual contests, workshops, and speaker presentations on competitive programming. Last year, we received a 4k grant, hosted contests with over a hundred participants, and invited the US Informatics Olympiad team coach Prof. Brian Dean to speak at the event.

Andover Window Cleaning Drone

With 1.5k of grant funding, I led a team of 7 to build a semi-autonomous window cleaning drone that is capable of power spraying windows.

Awards/Activities

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- International S-T Yau Science Award contest 1st Place in CS & Grand Award (Winter 2021)
 - Research Science Institute Top 5 Paper & Top 10 Presentations (Summer 2022)
 - USA Computing Olympiad Finalist & National Training Camp participant (Summer 2022)
 - Massachusetts Science and Engineering Fair 2nd Place (Spring 2021)
 - USA Young Physicist Tournament Bibilashvili medal (Winter 2021) & Swartz Trophy (Winter 2022)
 - USA Physics Olympiad qualifier (Spring 2022)
 - Poster acceptance at Joint Math Meeting's AMS-PME Conference'21 (Winter 2022)

- Paper acceptance at APoCS Conference'23 (Fall 2022)
- Wharton Investment semifinalist (Winter 2022)
- Beaverworks Summer Institute participant (Summer 2021)
- Intern at Human Robot Interaction Lab (Summer 2021)
- Intern at Local Milky Way Dynamics Group (Fall 2022)
- Stanford Precollegiate Summer Program participant (Summer 2020)