

Ryan Chang

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Education

Massachusetts Institute of Technology (September 2021 - May 2025)

- **Major:** Computer Science and Engineering with a minor in Mathematics
- **Coursework:** Design and Analysis of Algorithms (6.046) · Linear Algebra (18.06)
Prior Credit for Multivariable Calculus (18.02)
- **Clubs:** Solar Electric Vehicle Team (Strategy), Autonomous Boat Team (Navigation)

Salutatorian at Union County Magnet High School (September 2017 - June 2021)

Experience

Research at Stevens Institute of Technology (2018-2020)

Developed software that processes ocean satellite data with machine learning with much greater accuracy than previous algorithms used by NASA while still being as fast. Presented work at Liberty Science Center symposium and co-authored a paper about the algorithm.

<https://www.sciencedirect.com/science/article/abs/pii/S003442572030609X>

FIRST Robotics Competition Team Software Lead (2018-2021)

Organized and taught a subteam of 15+ programmers to create open source robot software. Researched advanced path following, vision, and autonomous algorithms. Drove and debugged robot during competitions. Wrote public training curriculum to make robotics more accessible to other teams:

<https://frc1257.github.io/robotics-training/#/>

Projects

Year in Pixels Creator

Web app that allows users to keep track of their mood each day through colors on an intuitive grid interface. Built using React, Express, MongoDB, Node, Bootstrap, and Passport.

<https://year-in-pixels-creator.herokuapp.com/#/>

Pure Pursuit Visualizer

Web app built for teaching students in high school's robotics team about a path following algorithm used by our robot. Helped familiarize students with how to tune the algorithm, its limitations, and how to implement it. Built using TypeScript, Bootstrap, Webpack, and p5.js.

<https://pure-pursuit-visualizer.herokuapp.com/>

Achievements

- Qualifier for Round 2 of Google Code Jam in 2021
- Qualifier for USA Computing Olympiad Platinum Division
- USA Math Olympiad Qualifier in 2021

Skills

- Proficient with Java, C++, Python, JavaScript, TypeScript, HTML/CSS, React, Node, Linux, Git
- Working collaboratively with people around the world on open source software
- Delegating tasks efficiently, following deadlines, and communicating results with teammates
- Learning new skills quickly and applying them effectively to solve real world problems