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 • Introduction to Machine Learning • Linear Algebra • Probability and Random Variables
- **Member of Autonomous Boat Team:** Implements pathfinding algorithms, sensor fusion, and computer vision on autonomous boat and drone to complete tasks for Roboboat competition

Experience

Software Engineering Internship at Conservation X Labs (January 2022)

Developed the frontend dashboard for Sentinel, a customizable device that uses artificial intelligence to recognize animal species for conservation efforts. Worked with React, Redux, MUI, MySQL, Firebase, Figma, and Stripe in a team of 4 people.

Research at Stevens Institute of Technology (2018-2020)

Developed software that processes ocean satellite data with machine learning with greater accuracy than algorithms used by NASA while being just as fast. Presented work at a symposium at the Liberty Science Center to ~100 researchers and co-authored a paper about the algorithm. https://www.sciencedirect.com/science/article/abs/pii/S003442572030609X

Projects

Year in Pixels Creator

Web app that allows users to keep track of their mood each day of the year through colors. Features cloud storage, free accounts with email verification, unlimited boards / colors, and statistics calculations. Built using React, Express, and Bootstrap for the frontend, and MongoDB, Node.js, and Passport.js for the backend. 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, Redux, Git, Linux, Bootstrap, MUI, MongoDB, MySQL,
- Delegating tasks efficiently, following deadlines, and communicating results with teammates
- Learning new skills quickly and applying them effectively to solve real world problems