Eric Herui Chen

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Leadership & Activities

• Volunteer for Special Olympics:

– Greater Springfield Special Olympics Speed Skating Program: Started as a unified skater at age 5; became a volunteer assistant coach in 2022; practice on every Sunday morning from the end of November to the beginning of March.

– Volunteer for Special Olympics Swimming Qualifier (at Springfield College) - 04/30/2022,

04/27/2024. • Varsity Sports:

– Ice hockey: Varsity all 4 years; Conf. Champs in 2023; awarded Most Improved Player in 2023; selected to play on club team with top players from Western MA.

– Lacrosse: Varsity all 4 years, 2025 Western Massachusetts Class B Champions.

• School Clubs:

– Co-founder of Math Club at Amherst Regional High School; recruited 15 students; designed problem sets for Math Olympiad, AMC, AIME; gave lectures on how to solve problems; had to stop due to varsity sports.

(Fall 2023) • STEM Camps and Workshops:

– *UMass Amherst Turing Camp*: Participated in a 3-week Turing camp (Summer 2022) at UMass Amherst. Coded a text-based adventure prison escape game (3000+ lines python code) for the final Project *Text Adventure*.

– *Python Study Group*: Participated in a 6-week Python study group (Summer 2021); learned and coded sorting algorithms (bubble sort, merge sort, etc.); coded the tic-tac-toe game with the best strategy for the final project.

– *AI workshop*: Attended a 4-day AI Workshop (Summer 2023) - organized by local college and high school students); learned basics of machine learning; learned how to call functions using library scikit-learn.

• Alternative Learning Programs:

– Teaching assistant for the AP Computer Science Principles class in Fall 2023.

Education

Amherst Regional High School, Amherst MA. Graduated June 2025

– Cumulative GPA: 3.98 on a 4.0 scale unweighted

– SAT: 1580 (Reading/Writing: 780, Math: 800)

– Dual enrollment courses at Amherst College and UMass Amherst

Work Experience

• Paid Internship (Collaborative for Educational Services/STEM@Work) 06/2024 - 08/2024 (100 hours)

– Mentor: Professor Ted Westling at UMass Amherst.

– Conduct research on modeling and predicting win probability for Major League Soccer playoff games, and meet weekly to discuss results.

• Personal Care Attendant Amherst, MA 10/01/2021 – present (8 hours/week)

– Hired through MassHealth Personal Care Attendant Program.

– Provided care and support to my older brother with autism. Assist with daily activities.

– Socialize and interact regularly to encourage communication; provide emotional support and companionship.

• Crew Team Member McDonald's in Hadley, MA 09/03/ 2023 – 11/17/2023 (3 evenings/week)

– Prepared food and assembled orders; kept workspace area neat and clean.

– Greeted and welcomed guests with a friendly attitude; provided excellent customer service. – Had to stop before high school ice hockey season started.

Projects

• Confidence intervals for multiple isotonic regression 09/2024 - 12/2024

– Work with an undergraduate student from UMass Amherst - mentored by Professor Ted Westling from UMass Amherst.

– Read papers on isotonic regression to construct pointwise confidence intervals, and meet once a week to discuss progress. *Programming in R.*

• Win probability for MLS playoffs 06/2024 - 08/2024

– Supervised by Professor Ted Westling from UMass Amherst.

– Preprocess Major League Soccer (MLS) data collected from ESPN; Employ Superlearner (a library of machine learning models for prediction) to model win probability for playoff games; Results show Generalized Additive Model (GAM) to be the most effective algorithm, and two covariates, *score differential* and *time left*, proved to be effective predictors of win probability. *Programming in R.*

• Predicting MLB players' salaries 01/2024 - 05/2024 – Data set is from Carnegie Mellon University for 1986 season.

– Applied multilinear regression and nonlinear models with nine variables. The results show that the best model consisted of five predictors using hits, career runs, career home runs, years in MLB, and position. *Programming in R.*

• Window inserts to reduce heat loss 09/2023 - 01/2024

– Consulted with experts from the Energy Conservatory, and developed an energy model for Amherst Regional High School's building heat loss.

– Designed and built 4 window inserts prototypes – potential energy save 3% to 18%.