

Jonathan Yin

INCOMING FRESHMAN AT YALE UNIVERSITY

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Education

Yale University

Sept. 2020 - May 2024

INCOMING FRESHMAN, CLASS OF 2024

- Prospective computer science, statistics/data science major

Acton-Boxborough Regional High School

Sept. 2016 - Jun. 2020

SALUTATORIAN, CLASS OF 2020

- Weighted GPA: 4.8/5.0, Unweighted GPA: 4.0/4.0
- Current AP Courses: Calculus BC, Physics C, English Literature & Composition, Psychology, Spanish Language
- ACT Composite Score: 36; SAT II Subject Test: Math II (800), Biology (800)
- Past AP Exams: Computer Science A (5), Statistics (5), Chemistry (5), US History (5)

Experience

Broad Institute of MIT and Harvard-Aviv Regev Group

Jan. 2019 - Jun. 2020

COMPUTATIONAL BIOLOGY AND DATA SCIENCE RESEARCHER (MIT PRIMES)

- Predicting GPCR activity based on chemical structure of ligands using deep learning models
- Improving unsupervised latent chemical models (i.e. VAEs for chemicals) to simplify training task
- Presented research at annual fall PRIMES Conference ([abstract](#); [slides](#))

Organizations

Acton-Boxborough Science Olympiad Team

Sept. 2016 - Jun. 2020

TEAM CAPTAIN (2019-2020), REGIONAL OFFICER (2018-2019)

- Write tests for team selection, teach new members, choose teams, organize team events
- Won the MIT, Harvard, Brown, and Yale invitationals; placed 9th in the nation for the past two years

MAHacks Organizer Team

Jun. 2019 - Jan. 2020

ORGANIZER OF VENUE AND LOGISTICS

- Find hackathon venues, organize budget, sponsorship outreach, plan workshops and activities
- Raised over \$7,500 in sponsorships for MAHacks V; nearly 100 attendees

Acton-Boxborough Academic Support Center

Sept. 2018 - Jan. 2020

PEER TUTOR

- Help students with a variety of academic subjects (e.g. geometry, biology, history, etc.)
- Work through challenging assignments, unpack confusing concepts, or review material before tests

Middle School Competition Math Club

Sept 2015 - Jan. 2019

TEACHING ASSISTANT

- Help teach challenging math concepts, with topics ranging from number theory to combinatorics
- Show students various approaches to help them grapple with difficult problems

Recent Projects

Food.AI (<https://github.com/jonathanyin12/Food.AI>)

HACKATHON PROJECT

- Enables simple calorie tracking on mobile devices using object detection of various food classes
- Utilizes a MobileNetV2 SSD architecture that was trained using transfer learning on the Open Images v4 dataset.

PokémonGAN (<https://github.com/jonathanyin12/PokemonGAN>)

PERSONAL PROJECT

- Generative adversarial network that synthesizes new Pokémon from latent noise
- Implemented in Keras using a modified DCGAN architecture

Flappy.ML (<https://github.com/jonathanyin12/Flappy.ML>)

PERSONAL PROJECT

- Genetic algorithm-based reinforcement learning project that beats the game Flappy Bird
- Algorithms implemented from scratch, using only the Processing library for visuals

Skills

Languages Python, Java, LaTeX

Libraries Keras, Tensorflow, NumPy, Pandas, RDKit, Seaborn, Matplotlib

Honors & Awards

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| 3x American Invitational Math Exam Qualifier - highest score of 7 (top 0.5% of all testers) | <i>Mar. 2018 - 2020</i> |
| USA Computing Olympiad - Gold Division (penultimate division; out of 7,500 participants) | <i>Jan. 2019</i> |
| Science Olympiad National Tournament - 3rd place Game On, 5th place Dynamic Planet, 6th place Mousetrap Vehicle (out of 60 national teams; 2500 total teams) | <i>May 2018 - 2019</i> |
| National Merit Scholarship - Finalist (top 1% out of 1.6 million high school students) | <i>Feb. 2020</i> |
| MIT Blueprint Hackathon - 4th place overall (out of 60 teams) | <i>Feb. 2019</i> |
| HackNEHS - Best game (out of 50 teams) | <i>Oct. 2016</i> |
| 2x President's Volunteer Service Award - Bronze (over 100 hours of service in the past year) | <i>Jan. 2017, 2020</i> |