# 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
- Senior Year 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 - Nov. 2019*

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

**3x American Invitational Math Exam Qualifier** - highest score of 7 (top 0.5% of all testers)     *Mar. 2018 - 2020*

**USA Computing Olympiad** - Gold Division (penultimate division; out of 7,500 participants)     *Jan. 2019*

**Science Olympiad National Tournament** - 3rd place Game On, 5th place Dynamic Planet, 6th place Mousetrap Vehicle (out of 60 national teams; 2500 total teams)     *May 2018 - 2019*

**National Merit Scholarship** - Finalist (top 1% out of 1.6 million high school students)     *Feb. 2020*

**MIT Blueprint Hackathon** - 4th place overall (out of 60 teams)     *Feb. 2019*

**HackNEHS** - Best game (out of 50 teams)     *Oct. 2016*

**2x President's Volunteer Service Award** - Bronze (over 100 hours of service in the past year)     *Jan. 2017, 2020*