

# David Chen

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## Education

### Princeton High School

GPA: 4.0/4.0 (4.64/5 weighted), ACT: 36, National Merit Semifinalist

Relevant Coursework: AP Computer Science, Algorithms, Multivariate Calculus & Linear Algebra, AP Statistics

Princeton, NJ

Sep 2017 - Jun 2021

### Independent Study

Stanford grad-level AI Courses: (CS221: Artificial Intelligence, CS231n: Computer Vision, CS224n: Natural Language Processing, CS230: Deep Learning), Coursera: (Machine Learning, Vector Calculus, Networking), fast.ai: Deep Learning

## Leadership Experience

### PHS Math Team

CAPTAIN

Princeton, NJ

2016 - Present

- Curate topics, design resources, and organize competitions for 30 members
- Compete in regional and national tournaments, placed 2nd at USMCA National Finals

### PHS Algorithms Club

CAPTAIN

Princeton, NJ

2017 - Present

- Adapt complex material and teach 20+ members algorithmic topics weekly, hold monthly mock contests
- Prepare for competitions, inform about Computer Science and career advice

### Princeton Soccer Association

CAPTAIN

Princeton, NJ

2011 - 2020

- Dedicated team player and leader, motivated national level team in competitions across east coast

## Work Experience

### Slingshot

SOFTWARE ENGINEER

Oct 2020 - Present

- Develop responsive automation portal UI components with React for seamless mentor/intern collaboration
- Unify Trello, GitHub, and Google Drive to simplify pipeline from intern applications to onboarding
- Write algorithmic competitions for partnering high schools to identify talent and generate awareness

MACHINE LEARNING INTERN

Jul 2020 - Oct 2020

- Selected from top 10% of hundreds of applicants worldwide based on technical skill and leadership potential
- Researched keystroke dynamics and built React Native mobile app for non-intrusive continuous user identification
- Reached 89% accuracy compared to 68% from baseline KNN models, integrated NLP through TensorFlow and scikit-learn

### Hinkson's, The Office Store

WEEKEND STORE MANAGER

Princeton, NJ

Dec 2019 - Present

- Properly open/close store, maintain clean environment, recommend stationary supplies, operate register

## Projects

### Ruzzle Solver

Optical character recognition, Android automation

- Designed first fully automated mobile-only Python program to automate a word finding game
- Reduced calculation and execution time from 35s to 200ms using image preprocessing, prefix tries, and graph theory

### Stock Analyzer

Google Sentiment Analysis and Twitter APIs, Flask, UI/UX design

- Created free AI-driven investing advisor based on historical prices and current events to democratize premium information

### Digit Recognition Using MNIST Dataset

Transfer learning, data augmentation, annealers, ensembles

- Experimented with various CNN architectures on 42,000 images, reached 99.664% test accuracy (top 150/2000+ on Kaggle)

### Arduino and Raspberry Pi Self-Driving Car

End-to-end electronic development, PID control

- Built robot to avoid obstacles and follow lines, tuned ROS models in Gazebo simulation to speed up maze navigation by 37%

### EduTools

Twilio, WolframAlpha, and Google Natural Language APIs, Flask

- Capitalized on falling cell service prices to drive SMS-based online learning, benefiting areas with expensive or unreliable WiFi

## Awards

**American Mathematics Competition:** AIME: 8, 2x qualifier

2019 - 2020

**USA Computing Olympiad:** Gold Division

2017

**Regional Coding Contests:** Lockheed Martin (1st), Lexington (2nd), Montgomery Blair (2nd)

2018 - 2020

**Carnegie Mellon Cybersecurity PicoCTF:** Top 50 of 5,000+ teams and 25,000 people

2019

**HackPHS:** 1st Place (2020), 3rd Place and 1st cybersecurity CTF (2019)

2019 - 2020

## Skills

**Languages:** Fluent in Python and Java; Familiar with C/C++, HTML/CSS/JS, TypeScript

**Technologies:** TensorFlow, Flask, React, Firebase, SQL, Linux, Git, Visual Studio, Latex