# David Chen

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## Education

**Princeton High School** *Princeton, NJ*
GPA: 4.0/4.0 (4.64/5 weighted), ACT: 36, National Merit Scholar, National AP Scholar *Sep 2017 - Jun 2021*
Relevant Coursework: AP Computer Science, Algorithms, Multivariate Calculus & Linear Algebra, AP Statistics

**Independent Study**
Stanford graduate-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** *Princeton, NJ*
Captain *2016 - Present*
- Curate topics, design resources, and organize competitions for 30 members with a focus on teamwork and engagement
- Compete in national tournaments (PUMaC, HMMT, Lehigh, etc.), placed 2nd at USMCA National Finals

**PHS Algorithms Club** *Princeton, NJ*
Captain *2017 - Present*
- Adapt complex material and teach 20+ members algorithmic topics weekly, hold monthly mock contests
- Strengthen pattern recognition and efficiency in competitions, inform about CS and career advice

**Princeton Soccer Association** *Princeton, NJ*
Captain *2011 - 2020*
- Dedicated team player and leader, motivated national level team (top 30 NJ) 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 Apps to simplify pipeline from intern applications to onboarding
- Modularize, document, and update deprecated code bases to modern development standards
- Wrote the UAE's first national algorithmic codathon, identifying talent and tripling Discord server to 400 members

Machine Learning Intern *Jul 2020 – Oct 2020*
- Selected from top 5% 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** *Princeton, NJ*
Weekend Store Manager *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

**Reddit Username Generator** *TensorFlow, TF.js, React, Flask, Heroku*
- Trained LSTMs and GRUs on 400k usernames for text generation, integrated into React through TensorFlow.js and Flask

**pingmote (Poor Man's Discord Nitro)** *Python, Tkinter, GUIs, PIL*
- Developed hotkey triggered cross-platform global emote picker to create and quickly insert custom images and gifs

**Digit Recognition With MNIST** *Transfer learning, data augmentation, regularization, 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%

## Awards

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|---|---|
| **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 (2020): SMS-based virtual learning, 3rd (2019): Sentiment driven AI investing advisor | *2019 - 2020* |

## Skills

**Languages:** Fluent in Python; Familiar with Java, C/C++, HTML/CSS/JS, TypeScript
**Technologies:** TensorFlow, scikit-learn, pandas, Flask, React, Firebase, SQL, Linux, Git, Latex