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 Semifinalist *Sep 2017 - Jun 2021*
Relevant Coursework: AP Computer Science, Algorithms, Multivariate Calculus & Linear Algebra, AP Statistics
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 *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
- 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 *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*
- Trained LSTMs and GRUs on 400,000 usernames, integrated into React through TensorFlow.js and deployed through Vercel

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, 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%

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