Jieruei Chang

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EDUCATION

Princeton High School, *Princeton, NJ*
Current GPA: 4.0/4.0 (unweighted)
Relevant coursework: Accelerated Java, Object-Oriented Programming, Precalculus, Geometry, Biology I, Chemistry I

AWARDS

USA Computing Olympiad: Gold
AMC 10: 96.0 (Top 2.5%) | **PSAT**: 1490
Violin: Winner of Achievement (2022), Concerto (2018), and Scholarship (2017) Awards at Westminster Conservatory
Princeton University Mathematics Competition 2022: 1st (Team)
Lockheed Martin Code Quest: 2nd, Advanced Division (2022)
HackPHS 2021: Math solver with OCR and writing ability using repurposed 3D printer (1st overall, best hardware hack)

PROJECTS

Set Game Solver (Python, Javascript, OpenCV, Flask, Vue):
- Created computer vision-based card recognition system to play pattern matching game

Radian (C++, MicroPython):
- Designed, built and programmed autonomous soccer robot with infrared ball tracking, PID angle correction, scoring algorithms, line avoidance, goal keeping and computer vision-based goal detection

Tres (Python, Javascript, Flask):
- Built cloud-based online multiplayer Uno clone

Robowordle (Python, OpenCV):
- Combined fiducial detection, image manipulation, and color identification to build robotic Wordle solver

rhythmvision (Javascript, Mediapipe):
- Utilized AI body pose estimation and gesture classification in browser-based rhythm dance game

cmdpxl (Python, OpenCV):
- Built cross-platform terminal-based image editor

EXPERIENCE

Princeton Soccer Robotics *(2021-)*
Lead Programmer
- Integrate complex hardware and software, design intelligent robot sensor and movement algorithms, develop robot chassis and mechanical structures with CAD tools; won 2nd Place in national Robocup Junior competition

PHS Algorithms Club *(2020-)*
Captain
- Teach algorithms and data structures to 15 members weekly
- Participate in national competitive programming competitions such as USACO, Philadelphia Classic and Lockheed Martin Code Quest

Program in Algorithmic and Combinatorial Thinking *(2020-2021)*
Student, Mentor
- Selected to participate in five-week summer programs and year-long advanced program in theoretical computer science funded by National Science Foundation
- Mentored beginners on problem sets and homework assignments

Music Mentoring *(2022-)*
- Tutor violin for elementary students in Princeton Public Schools in 6-week afterschool music program

PHS Math Team *(2020-)*
- Meet weekly to solve challenging problems in individual and team settings, participate in national competitions including MMATHS, AMC, AIME, PUMaC, CMIMC, and ARML

SKILLS

Languages: Fluent in Python and HTML/CSS/Javascript, Proficient in Java and C++
Technologies: Flask, Vue, OpenCV, Git, Linux, LaTeX