Xinyun (Mark) Zhou

Newtown, PA | markjouh@icloud.com | linkedin.com/in/xinyun-zhou-3b431b289 | github.com/markjouh

EDUCATION

George School   Newtown, PA
High School Diploma, College/University Preparatory Program   *Sep. 2021 – May 2026*

- Took gap year 2024-2025 to focus on competitive programming, winning multiple university contests and exploring machine learning, robotics, and heuristic optimization through deep technical learning
- **Relevant Coursework:** Advanced Programming: Artificial Intelligence, Advanced Physical Computing & Robotics, AP Calculus BC, Linear Algebra

TECHNICAL SKILLS

Languages: C, C++, Java, Python, Swift/SwiftUI, HTML/CSS/JavaScript
Frameworks & Tools: PyTorch, Git, Xcode, iOS Development, CAD, Teensy/Embedded Systems
Areas: Algorithms, Data Structures, Machine Learning, Mobile Development, Embedded Programming, Competitive Programming

PROJECTS

RotateMate – Image Rotation ML Model   github.com/markjouh/RotateMate-model
Personal Project   *2025 – Present*

- Built end-to-end machine learning system to automatically detect and correct mis-rotated images on iOS devices
- Optimized for on-device efficiency: designed 3M parameter model, implemented quantization pipeline, and engineered hardware-accelerated preprocessing to achieve <1ms inference latency on modern NPUs
- Developed complete pipeline from custom dataset creation and PyTorch training to production iOS deployment with Swift/SwiftUI

Competitive Programming Library   github.com/markjouh/cp-library
Open Source Project   *2023 – Present*

- Authored comprehensive library of highly efficient, clean, and generic C++ implementations of advanced data structures and algorithms for competitive programming
- Designed implementations suitable for Codeforces contests, ICPC competitions, and educational reference
- Gained adoption in competitive programming communities for code quality and performance

EXPERIENCE

Algorithms Club – President & Co-Founder   George School
Leadership Position   *Sep. 2024 – Present*

- Co-founded and lead school's Algorithms Club with 30+ active members
- Organize weekly meetings covering competitive programming techniques, algorithm design, and problem-solving strategies
- Foster collaborative learning environment for students interested in computer science and mathematics

Math Tutor   George School
Volunteer Position   *Sep. 2024 – Present*

- Provide weekly peer tutoring in advanced mathematics including combinatorics and other topics
- Help students develop problem-solving skills and mathematical intuition through one-on-one instruction

HONORS & AWARDS

USACO Platinum   USA Computing Olympiad
Highest division of premier US high school algorithmic competition   *Mar. 2025*

Codeforces Master (Rating: 2219)   Codeforces
Top 1% of competitors worldwide in timed algorithmic contests   *Aug. 2024*

First Place – CMIMC Programming Contest   Carnegie Mellon University
1st overall and 1st in Optimization round, team-based algorithmic challenges   *Apr. 2025*

First Place – Massachusetts Computer Science Olympiad MACSO

Won in-person high school finals with 278 participants from 182 schools in 40 countries *Nov. 2024*

First Place – PClassic Programming Contest (Advanced) University of Pennsylvania

1st overall in Advanced Division, four-hour algorithm and data structure contest *Apr. 2024*

First Place – TJ Invitational Open in Informatics (TJIOI) Thomas Jefferson High School

1st overall in two-person team, multi-hour algorithmic coding challenges *Apr. 2024*

Second Place – TJIOI Thomas Jefferson High School

2nd overall in team competition *Apr. 2025*

Second Place – CMIMC Programming Contest Carnegie Mellon University

2nd overall, 1st in both New Language and Optimization rounds *Apr. 2024*