



USACO PRACTICE AND STRATEGY

Daniel Guan

 **MENTUM
LEARNING**

USACO Practice and Strategy



June 18 (Saturday) 7-8PM CT

USACO Practice and Strategy

2-time USACO Finalist

USAMO Qualifier

Competitive Programming Initiative Founder



Daniel Guan

MIT '26

USACO Overview



- 4 Divisions: Bronze, Silver, Gold, Platinum
- 4 Contests: December to April
- Contests are 4-5 hours, 3 problems
- Promotions are determined by cutoffs

Getting Started



- Programming Languages –
 - C++ good for all
 - Python good until Bronze
 - Java good until silver
- I started with Java, transitioned to C++
- Personal opinion: if looking to pass gold or start coding, use C++
- <https://www.sololearn.com/home>

Practice



- Two ways
- #1 – Practice random problems by rating
- #2 – Doing virtual contests and upsolving
- Use usaco.guide for topic list, reference, targeting weak areas

Problem Sites



- Top sites (All assume C++ use except for USACO):
- <https://cses.fi/problemset/>
- <http://codeforces.com/>
- <https://atcoder.jp/home>
- USACO
- <https://oj.uz/>

Contest Sites

- Top platforms:
- <http://codeforces.com/>
- <https://atcoder.jp/home>
- USACO
- <https://codingcompetitions.withgoogle.com/codejam/>
- <https://www.facebook.com/hackercup/>

Personal Experience

- I've used all previously mentioned
- USACO practice -> Camp -> Codeforces + Atcoder + Several other sites -> Codeforces
- I would do things differently because: new resources, problem types, etc.

Personal Recommendation

- I've used all previously mentioned
- Practice problems by level using: codeforces + <https://oichecklist.pythonanywhere.com/>
- Community: <https://discord.gg/bessMBe>
- <https://joincpi.org/>
- <https://usaco.guide/general/>***

FAQ



- How many hours should I practice??
- Math experience?
 - Relevant: Number theory, combinatorics, coordinate geometry
- Times to promote:
 - Varies A LOT and sometimes just depends on contest cutoffs
 - Don't be discouraged if takes longer than expected, especially for gold -> platinum
- Debugging
 - <https://usaco.guide/general/debugging-lang?lang=java>

Q&A

Momentum Learning Wechat Group



All seminar recordings and slides can be found at: <https://www.momentumlearning.org/open-house>

Join Momentum Learning Wechat groups



MOMENTUM LEARNING

www.momentumlearning.org
 info@momentumlearning.org



- ◆ **Best** contest math and coding competition (USACO) preparation classes
- ◆ **Structured curriculum** from the elementary level to the highest Olympiad Math (IMO/USAMO)
- ◆ We use **Zoom** to live-stream classes. **Recordings** are available
- ◆ Over **200** students receive **Distinguished Honor Roll** (top 1%) and **Honor Roll** (top 5%) on AMC8, including **15-20 perfect scores** each year
- ◆ **MATHCOUNTS National** individual round **winner, runner-up**, and multiple students who made **count down** (top12). Team round **National Champion** 3 years in a row
- ◆ Each year, over **260** students qualify for **AIME**, over **60** qualify for **USAMO & USAJMO**, and **4-8** qualify for MOP
- ◆ Team Sweepstake Winner for **CMIMC, HMMT, and PUMaC**
- ◆ Over **50** students qualified for USACO **Gold/Platinum** in last 2-3 years
- ◆ Trained the **2nd place** team in **National Science Bowl** and students who made **USABO Finalists** (Top 20 in the country)

MOMENTUM LEARNING

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 info@momentumlearning.org



Scan me to register

Senior Seminars

Register here:
<https://www.momentumlearning.org/open-house>



Jarvis Xie
 Yale '26

June 17 (Friday) 7-8PM CT

How to become a top debater

Peak at Rank #1 among all LD debaters on multiple national metrics
 USAMO Qualifier
 USACO Platinum Qualifier



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 MIT '26



Rowechen Zhong
 MIT '26

June 19 (Sunday) 7-8PM CT

Learning to Learn: How to Master three Arts

US Physics Team '22
 Blue MOP '21
 USAMO HM '21
 USACO Platinum



Stephanie Wang
 Harvard '26

June 24 (Friday) 7-8PM CT

Science Olympiad and Social Impact

RSI Scholar
 Coca-Cola Scholar
 3-time Science Olympiad National Champion
 3-time USABO Semifinalist



Stephanie Wang
 Harvard '26



Russell Li
 Harvard '26

June 25 (Saturday) 7-8PM CT

Crafting a Productive & Enjoyable HS Career

RSI Scholar
 5-time Scholastic National Gold/Silver Medalist
 Editor-In-Chief of School Newspaper
 Captain of Varsity Cross Country & Tennis Teams

July 2 (Saturday) 7-8PM CT

ASK ME ANYTHING!

3-time IMO Gold Medalist
 USA IOL Team Member
 Regeneron Science Talent Search 10th Place
 2-time MATHCOUNTS champ



Luke Robitaille
 MIT '26



Isabella Quan
 MIT '26

July 3 (Sunday) 7-8PM CT

Girls in Contest Math

RSI Scholar and Rickoid of the Year
 MOP Qualifier
 8-time AIME Qualifier/7-time MPFG Qualifier
 IEEE CCCW Best Paper Awardee



Amber Luo
 MIT '26

July 9 (Saturday) 7-8PM CT

Preparing for USABO and Regeneron

Regeneron STS 3rd Place Winner
 RSI Scholar, Top 5 Paper & Presentation
 2-time USABO National Finalist
 ISEF Grand Prize Winner



Amber Luo
 MIT '26



Nicholas Wei
 MIT '26

July 15 (Friday) 7-8PM CT

My Science Research Journey

ISEF Grand Prize Winner
 CSEF Project of Year
 USABO Finalist
 Paid Research Intern at Stanford



Nicholas Wei
 MIT '26

August 13 (Saturday) 7-8PM CT

Balancing Academics and Athletics

4-time AIME/MPFG Qualifier
 Maryam Mirzakhani AMC10 Winner
 Speedo Sectionals Qualifier
 UIL Swimming District Champion



Christine Huang
 MIT '26

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Thank you