

# Sean Liu

## Curriculum Vitae

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### Education

- Aug 2021 – **B.S., Computer Science; B.A., Linguistics**,  
Present *University of Illinois at Urbana-Champaign*, Champaign, IL, *GPA – 3.92/4.00*.
- Dean's List
  - Edmund J. James Honors Program Scholar

### Experience

- May 2023 – **Software Developer**, *Method I Trading*, Hinsdale, IL.  
Present
  - Development of an options trading suite, including a scanner, trade detector, and analytics engine.
  - Improved existing code performance and readability; implemented trade detector functionality.
  - Skills: Java, SQL, System Design
- Aug 2022 – **Course Assistant**, *CS374 (Intro to Algs & Models of Comp)*, Champaign, IL.  
Present
  - I grade homework, help out with lab sections, and answer class forum questions about course material for UIUC's foundational Algorithms course.
- Aug 2022 – **Student Researcher**, *Forward Data Lab*, Champaign, IL.  
Present
  - Verified 100,000 institution entities in the OpenAlex Dataset using PostgreSQL and ML methods.
  - Proposed a novel method for resume structure extraction by using dependency parsing on a document level in a few-shot setting, achieving up to 92% accuracy on unseen resumes.
  - I actively review relevant literature, summarising the results of one or more papers on the subject, presenting it in weekly meetings.
- Sep 2021 – **Problem Designer**, *APCSCamp/IOICamp*, Remote.  
Present
  - Every year, I set 3-4 problems as part of the IOICamp problemsetting committee; past problems have been on string algorithms, computational geometry, and randomised algorithms.
  - The problems are of comparable difficulty to the first rounds of the National Training Camp selection test. I also cross-check problems set by other problemsetters as part of the commission.
- Sep 2021 – **Innovation Engineer**, *Disruption Lab*, Urbana, IL.  
Jan 2022
  - Utilized blockchain technology to enhance transactions of University goods
  - As part of the frontend team, built the entirety of the customer-facing interface in React.
- Aug 2021 – **Problem Designer**, *Systemx Inc.*, Remote.  
Present
  - Am on the problemsetting committee to the annual Young Turing Program's algorithmic competition held by Systemx Inc. for both 2021 and 2022.
  - Designed 7 novel algorithmic problems of varying difficulty levels which were included in that year's competition, from which hundreds of teams competed. Used the TPS system, developed by the Codeforces team.

### Awards

- May 2022 **ICPC North American Championship (ICPC NAC/PC)**, *ICPC Foundation*, 15th Place.
  - Represented UIUC in the ICPC North American Championship, the flagship collegiate programming competition in North America.
  - Placed fifteenth place out of 50 teams, qualifying for the ICPC World Finals, to be held in November 2023.
- Sep 2021 **Facebook HackerCup**, *Meta*, Qualified Round 2, Rank 580/32699.
  - Advanced through multiple to the second round in the annual international competition held by Facebook.
- May 2020 **Taiwan Olympiad in Informatics Training Camp**, *National Taiwan University*, Rank 15.
  - The training camp to select the top high schoolers to represent Taiwan in the annual International Olympiad Informatics.
- Mar 2018 **American Invitational Mathematics Examination**, *MAA*, 9/15, PR 91.6%.
  - Solved 9 problems out of 15 in the annual AIME mathematical competition, hosted by the Mathematical Association of America.

## Skills

Technical Skills C (POSIX system programming), C++, Python (matplotlib, PyTorch, numpy, pandas, NLTK), JavaScript (React, jQuery), HTML,  $\LaTeX$

Languages English (Native), Mandarin Chinese (Native), Japanese (Intermediate, JLPT N2)

## Relevant Coursework

Computer Science Algorithms, Natural Language Processing, System Programming, Computational Geometry

Linguistics Introduction to Language Science, Elements of Syntax, Historical Linguistics