Alissa Kopylova

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Personal Profile

A junior at MIT studying mathematics and interested in its applications to finance and quantitative research. 4 years of experience with various programming languages and mathematical modeling. Primarily, looking for quantitative analyst, trader, or researcher roles.

Education

Research and Job Experience

Massachusetts Institute of Technology (MIT)

Grader, Linear Algebra (18.700), Probability and Random Variables (18.600) *Sept 2023 -*

- Grading problem sets on probability and abstract linear algebra, interacting with students and giving feedback on graded work

University of California, Irvine

Research Team Member *Jun 2020 - Aug 2020*

- As a participant of the Math ExpLR Program for High School Students, worked in a 3-person team supervised by Professor Elizabeth Read on a project in computational biology
- **Project Description:** Using stochastic simulations to analyze indirect activation and repression pathways of multi-gene networks.
- Analyzed phenomena observed in simulations in a biological context, learned basics of MATLAB and mathematical modeling, ran thousands of ”trials” and graphed correlation between genes based on the regulation type studied.
- Gained exposure to LaTeX, wrote significant portion of research paper.
- Experienced work in an interdisciplinary, evolving field, presented project to peers and other professors in program.
- **Technical Skills:** Python, MATLAB

University of California, Irvine

Research Team Member *Jun 2021 - Aug 2021*

- Worked on an individual computational biology project supervised by Professor Natalia Komarova
- **Project Description:** Coded various types of networks (including lattice and scale-free) with Python and used the Susceptible, Infected, Recovered (SIR) model to simulate the spread of disease through scale-free networks.
- Created, debugged, and tested Python code individually, graphed trends in disease spread, summarized findings.
- **Technical Skills:** Python

Skills

Programming	Python, Java, MATLAB, Algorithms
Data Analysis	Statistics, Linear Algebra, Probability, Stochastic Modeling, Data Structures, Differential Equations
Miscellaneous	LaTeX(Overleaf)

Achievements

2021 **Top 50**, USA Biolympiad (USABO)

2020, 2021 **2x Semifinalist**, USA Biolympiad (USABO)

2020,2021 **Top 16, Top 32**, National Science Bowl

2020, 2021 **2x JPL Regional Winner**, National Science Bowl

Leadership Roles

Co-president *University High School*

Science Bowl *Sep 2019 - Jun 2022*

- Competing member of 5-person team since 2019, specialized in biology, spent 3+ hours weekly studying biology textbooks and practicing buzzer-style questions.
- As captain, organized tryouts, sent out emails, oversaw weekly practices, advised younger team members.
- Won regional competition and advanced to nationals (Top 16, Top 32) twice, second place finish in 2022.

President *University High School*

Biology Club *Aug 2020 - Jun 2022*

- Planned bi-weekly meetings, lectured on biology topics and led trivia games, organized registration for competitions, doubling USABO sign-ups to 25 individuals in 2021, sent out club emails, created presentations, publicized opportunities in biology
- Invited UCI professors to guest speaker sessions where they shared their recent research findings related to ecology, stem cells, and other topics and also described their research careers to aspiring high school students

Interests

Cooking I enjoy preparing both desserts and main dishes, experimenting with new recipes, and being a member French House, a team-based cook-for-yourself community at MIT.

Piano I have played the piano since I was 5 years old, performed at recitals and regional competitions and completed Certificate of Merit Advanced Level.