

# Kyra Gunluk

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EDUCATION	<b>Cornell University</b> B.S. in Computer Science Minoring in Operations Research, Mathematics, and Game Design GPA: 3.71     Dean's list: Fall 2021, Spring 2022, Fall 2022, Spring 2023  <b>Stuyvesant High School</b> , New York, NY <b>Ithaca High School</b> , Ithaca, NY	<i>Ithaca, NY</i> <i>May 2024, expected</i>  <i>Fall 2016-Spring 2019</i> <i>Fall 2019-Spring 2020</i>
RELEVANT COURSEWORK	<b>Computer Science:</b> Object Oriented Programming and Data Structures, Data Structures and Functional Programming, Discrete Structures, Computer System Organization, Introduction to Analysis of Algorithms, Introduction to Machine Learning, Operating Systems, Introduction to Cryptography, Analysis of Algorithms (PhD Level) <b>Operations Research:</b> Engineering Probability and Statistics I and II, Engineering Applications of ORIE, Optimization I and II. <b>Mathematics:</b> Multivariable Calculus, Differential Equations, Linear Algebra, Prove It!, Introduction to Analysis, Introduction to Number Theory, Introduction to Combinatorics <b>Game Design:</b> Creative Character Design, Intro to Game Architecture, Advanced Game Design	
RESEARCH EXPERIENCE	<b>NSF DREU Research Intern</b> UIUC, Champaign, IL Selected as an on site participant for 10 weeks in Urbana-Champaign, working with Professor <a href="#">Ruta Mehta</a> . Conducted research on Algorithmic Game Theory, and developed approximation algorithms for fair allocation of indivisible items among agents.  <b>Undergraduate Research at Cornell</b> Cornell University, Ithaca, NY Worked on a research project on Fourier Bounds for Parity Decision Trees (PTDs) with Professor <a href="#">Eshan Chattopadhyay</a> . The goal of this project is to improve current bounds on the complexity of Fourier expansions of boolean functions on binary strings.	<i>Summer 2023</i> <i>Fall 2022, Spring 2023</i>
WORKING PAPERS	<b>Approximating MMS and (symmetric) APS under Cardinality Constraints: Goods, Bads, and the Best-of-Both-Worlds</b> <b>Arjun Aggarwal, Kyra Gunluk, Ruta Mehta</b> <i>Under review</i>	
ACADEMIC PRESENTATIONS	<b>MMS and APS Under Heterogeneous Cardinality Constraints</b> <ul style="list-style-type: none"><li>– <a href="#">Workshop in Honor of Mihalis Yannakakis</a>, Columbia University</li><li>– <a href="#">EaGL Theory of Computation Workshop</a>, University of Rochester</li></ul>	<i>August 2023</i> <i>September 2023</i>
TEACHING EXPERIENCE	<b>Cornell University</b> , Ithaca, NY, CS Course Staff TA for CS 2800: Discrete Structures. Taught hour long discussion sessions twice a week, graded weekly homeworks and three exams, held office hours.  <b>Cornell University</b> , Ithaca, NY, CS Course Staff Teaching Assistant for CS 4820: Introduction to Analysis of Algorithms. Held hour long office hours to assist students in problem solving, graded all homeworks and exams.  <b>Cornell University</b> , Ithaca, NY, Engineering Learning Initiatives Academic Excellence Workshop Facilitator for Math 2930: Differential Equations for Engineers.	<i>Spring 2022, Fall 2022</i>  <i>Spring 2023</i>  <i>Fall 2021</i>

Created weekly lesson plans, lecture slides, and worksheets for students; taught weekly 2-hour sessions, during which I presented review slideshows, assisted students and provided full solutions.

#### EDUCATIONAL OUTREACH

**EdEquity**, Denver, CO, *College-In-High School* (remote) *Fall 2023*  
TA for ENGRI 1101: Engineering Applications of ORIE for High School Students. Led coding lab sections twice a week, held office hours, and graded homeworks and exams.

**Discovery Program**, New York, NY, Stuyvesant HS *Summer 2022*  
Teaching Assistant for mathematics, Algebra 1. Provided guidance for problem solving and graded homework assignments and exams.

**STAR Learning Center**, New York, NY, Tutor *March 2019 – July 2019*  
STEM tutor for underprivileged students. Created individual lessons, reported progress afterwards.

#### APPLIED PROJECTS

**Action IQ Research Internship**, New York, NY, Intern *Summer 2019*  
Research project on the relationship between weather conditions and shopping trends at various Intermix stores. Worked with a partner using python to create graphs and analyze the data to relate customer shopping patterns to weather data.

**Trading Bot**, Cornell University, Developer *March 2021 – May 2021*  
Worked with a team to create a user interactive database that advises when to invest and trades stocks in Ethereum using OCaml.

**Salvage Computer Game**, Cornell University, Designer *Spring 2022*  
Worked with a team to develop a deep sea diving exploration video game. Character Design of the diver and the monsters, creating animation cycles for different movement using Adobe Photoshop.

**Hospitality Hackathon**, Cornell University, Researcher *2021*  
Worked with a team to form theoretical solutions to current Hilton technology and staffing issues and presented our ideas.

#### HONORS

Member of Study of Exceptional Talent, Johns Hopkins Center for Talented Youth *2015*  
Member of **Google CSRMP** (Computer Science Research Mentorship Program) *2022*  
Participant in the **New Horizons in Theoretical Computer Science** Summer School *2023*

#### RELEVANT SKILLS

<b>Languages:</b>	English - Native Spanish - Intermediate
<b>Programming:</b>	Python, Java, C, HTML, OCaml, MATLAB, OR-Tools, CVXPY, LaTeX
<b>Design:</b>	Word, Excel, Adobe Photoshop, Procreate

#### PROFESSIONAL MEMBERSHIPS

Society of Women Engineers  
Women in Computing at Cornell

#### REFERENCES

**Ruta Mehta**, Associate Professor, Department of Computer Science,  
University of Illinois at Urbana-Champaign, [rutameht@illinois.edu](mailto:rutameht@illinois.edu)

**Eshan Chattopadhyay**, Assistant Professor, Computing and Information Science,  
Cornell University, [eshan@cs.cornell.edu](mailto:eshan@cs.cornell.edu)

**Dimitris Paparas**, Software Engineer at Google Research, [dpaparas@google.com](mailto:dpaparas@google.com)