# Sean Yang

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## EDUCATION

**Cornell University,** College of Engineering, Ithaca, NY                          **Aug. 2023**
Bachelor of Science in Computer Science with a minor in Operations Research and Management Science (GPA: 3.6)
Awards: Cornell ELI Research Award, Cornell Mathematical Contest In Modeling Finalist (Team), Dean's List

**Relevant Courses:** Machine Learning Theory, Matrix Computations, Distributed Computing Principles, Introduction to Analysis of Algorithms, Simulation Modeling & Analysis, Operations Research Tools for Financial Engineering

## WORK EXPERIENCE

**Trexquant Investment LP,** *Global Alpha Researcher*                               **May 2024-Present**
- Formulated signals for mid-frequency systematic equity trading strategies and presented them to senior management
- Developed hypotheses for the prediction of announcement day returns, focusing on drivers of behavioral biases
- Researched and proposed methods for synthesizing and utilizing daily metrics based on intraday market data

**Bindel Research Group,** Cornell University, *Undergraduate Research Assistant*    **Jun. 2022-May 2023**
- Worked 10-12 hours per week researching and developing tools for designing nuclear fusion devices, specifically the numerical methods used to efficiently optimize the confinement properties of magnetic fields in stellarators
- Wrote Julia code to identify near-quasisymmetric stellarator magnetic field configurations using the near-axis expansion
- Created and gave a presentation explaining the quasisymmetric near-axis expansion to members of the research group

**CS 3110 Staff,** Cornell University, *Teaching Assistant*                          **Aug. 2020-May 2023**
- Led weekly 75 minute discussion sections for 20-35 students, teaching new content and reviewing lecture material
- Wrote all weekly problem sets and solutions for 2 semesters, explaining material and linking students to extra resources
- Answered questions via office hours and online message board, explaining concepts and assisting with errors in code

**El Housni Research Group,** Cornell Tech, *Undergraduate Research Assistant*       **Jun. 2022-April 2023**
- Employed full time in summer 2022 and worked 10-12 hours per week during the school year
- Successfully applied for grant funding from Cornell ELI to research methods for designing optimal food distribution networks to alleviate food insecurity in New York City and wrote a report and poster detailing the results of the project
- Formulated and implemented a Gurobi linear program to efficiently optimize distribution networks in different scenarios
- Built a tool to identify regions of high poverty and low food access in the US via Pandas, NumPy, and Matplotlib
- Analyzed methods for joint distribution reconstruction in order to predict neighborhoods' food costs via scikit-learn

**Amazon**, *Software Development Engineer Intern (Return Offer Received)*           **Jun. 2021-Aug. 2021**
- Developed and documented an internal tool to allow marketers to adjust automated advertising systems' behaviors
- Constructed backend Amazon Web Services (AWS) Lambda functions to query and update DynamoDB databases
- Built a Vue.js UI with data validation and access management for interacting with the backend via HTTP API

**Freed Research Group,** Cornell University, *Undergraduate Research Assistant*     **Feb. 2021-June 2021**
- Worked 4-5 hours per week designing and implementing a Python package for fitting models to ESR spectrometer data
- Constructed a command-line interface to facilitate more intuitive model parameter optimization for researchers

## PERSONAL PROJECTS

**Finite Element Method Structural Analysis**                                       **2023**
- Designed and wrote finite element analysis code from scratch to model linear elasticity in heterogeneous structures
- Created a Julia implementation of the half-edge data structure with support for unstructured mesh refinement

**Partial Sketch Ending Prediction**                                                **2021**
- Developed a tool to finish partial sketches based on a label of the user's intended subject using the Quick Draw dataset
- Implemented a TensorFlow gated recurrent unit model which approached the problem as a time series forecasting task

**COVID-19 Vaccination Projection**                                                 **2020**
- Constructed a genetic algorithm to generate novel vaccine distribution protocols based on their predicted efficacy
- Predicted the efficacy of various vaccine distribution protocols by fitting an augmented SIR model to historical data

## SPECIALIZED SKILLS

**Programming Languages:** Python, Julia, C++, OCaml, Java, MATLAB, R, SQL, Fortran
**Tools:** Git, UNIX, LaTeX, Microsoft Office Suite (Excel, PowerPoint, Word), Postman, Simio, Gurobi