

# ALEX HSU

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## EDUCATION

### New York University

*Bachelor of Arts in Computer Science*

New York, NY

*Expected December 2025*

- **GPA:** 3.4/4.0 | **Courses:** Software Engineering, Artificial Intelligence, Computer Systems Organization, Algorithms, Data Structures, Linear Algebra, Computer Science, Programming, Discrete Mathematics, Statistics, Mathematics for Econ I-II
- **Activities:** Tech@NYU, Chefs (Secretary), Aviation Club, Fashion Business Association, Intramural Basketball (Captain)

## PROFESSIONAL EXPERIENCE

### MetLife

*Software Developer Intern*

Cary, NC

*Jun 2024 - Present*

- Developing a Python-based internal automation tool, integrated with the Ansible API, to streamline deployment processes
- Designing Ansible playbooks to streamline deployment/management of MySQL servers, reducing mistakes & manual work
- Implementing SSH key-based authentication for managed nodes to minimize security risks and latency between executions

### Ideas Lab

*Software Engineer Intern*

New York, NY

*May 2023 – Aug 2023*

- Created a computer vision model that supports core functionality for in-app golf swing mechanics & ball trajectory analysis
- Analyzed results and augmented 1,000+ pieces of data to allow the model to optimally learn and detect movement patterns
- Trained neural networks to develop an object detection algorithm that achieves 85% accuracy and a .82 F1 score on average

### Hawkeye Investment Management

*Software Engineer Intern*

New York, NY

*Jan 2023 – May 2023*

- Developed a K-nearest neighbors machine learning model in high dimensional space to identify optimal pairings for hedge
- Implemented 8 distinct parameters to predict the most similar ETF out of a pool of 400 to a given CEF with 95% accuracy
- Streamlined trading operations and cut down time-cost by 3+ hours daily through fully automating research & due diligence

### Constellation

*Data Science Intern*

New York, NY

*Jun 2022 – Aug 2022*

- Developed a Python script using Selenium and BeautifulSoup 4 packages to automate the extraction of 1M+ points of data
- Used MySQL to assemble a dataset with 1M+ data points for clients such as International Hilton Group and Lithia Motors
- Utilized Python, Pandas, and NumPy to clean data and develop natural language processing pipelines for sentiment analysis

## PROJECTS/AWARDS

### 83SM Capital

- Co-founded student-run hedge fund and engineered python based backtester to optimize parameters for stat-arb algorithm
- Generated 6% alpha by utilizing IBKR API to develop a stat-arb algorithm on closed end funds using time series analysis

### Notexchange

- Implementing React.js, Django, and Spotify's API to create a full-stack website focused on sharing new music with friends
- Allows users to create an interactive room with a join code where other users can rate and choose to skip the current song

### Haute AI (Convolutional Neural Networks)

- Utilized TensorFlow to engineer a Generative Adversarial Network from scratch that generates synthetic clothing sketches
- Architected the generator/discriminator components to create a system that continuously improves realism of new images

### Personal Website

- Built a portfolio website to display skills & experience using TypeScript, React.js, Next.js, Tailwind CSS, and Framer-Motion
- Hosted on Vercel and implemented a light/dark mode, animations using framer, and an email feature using the Resend API

### IMC Trading - Prosperity (Top 5%)

- Placed in top 5% for algorithmic trading competition by developing market making algorithms and options pricing model
- Implemented ridge regression machine learning models to conduct time series analysis and optimize/increase alpha by 3%

## SKILLS AND INTERESTS

**Languages:** English (fluent), Japanese (conversational), French (conversational)

**Programming Languages:** Python, C/C++, Java, TypeScript, JavaScript, HTML5, CSS, x86 Assembly, SQL

**Frameworks/Libraries:** PyTorch, TensorFlow, OpenCV, Django, React.js, Next.js, Tailwind CSS, Framer, Node.js, Vercel, Pandas, NumPy, Sk-learn, YOLOv8, Selenium, BeautifulSoup 4, Ansible

**Interests:** Fashion (Design/Styling), Basketball (New York Knicks), Tennis, Cooking, New York City Restaurants, Poker