

# ELAINE HONG

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## EDUCATION

### Cornell University

Aug 2024 – May 2028

*B.Eng. in Operations Research & Information Engineering, Minor in Computer Science*

- **Relevant Courses:** Multivariable Calculus, Linear Algebra, Object-Oriented Programming, Probability and Stats, Data Structures
- **Activities:** NCAA Div I Athlete, Residence Hall Council

## PROJECTS

### Trading Strategy Backtester | *Python, Pandas, NumPy, TypeScript, Next.js*

- Engineered a full-stack backtesting tool for evaluating trading strategies, achieving a Sharpe ratio of **1.8** and **12%** higher returns than a buy-and-hold benchmark.
- Built a full-stack web application to automate AI-powered game asset generation using **Stable Diffusion** and custom prompt workflows
- Designed an intuitive interface with **Next.js and Forge UI**, enabling non-technical users to easily create and manage symbols, icons, and bonus art

### AI Image Generation Automation Platform | *Python, Stable Diffusion, Forge UI, Next.js, TypeScript*

- Integrated Stable Diffusion with Python backend logic, increasing the company's content by **40%**
- Developed a backend engine in **Python** to process CSV-based historical data, execute trades, and compute performance metrics such as portfolio value, returns, and drawdowns
- Built a frontend dashboard with **Next.js and TypeScript** to support strategy selection and parameter tuning, enabling real-time visualization of performance and strategy comparisons

### Fencing Training App | *Node.js, Python, Firebase, RESTful API, Google Cloud*

- Built a full-stack app for athletes to track training sessions, performance metrics, and progress
- Designed a RESTful API with Node.js and Python for data processing and personalized workout recommendations
- Integrated Firebase for real-time stat tracking and cloud storage, ensuring scalability and reliability
- Deployed on Google Cloud, supporting **50+** active users in the fencing community with **95%+** uptime
- Increased athlete engagement by **30%** through progress dashboards and performance analytics

## LEADERSHIP & ACTIVITIES

### STEM Alliance At Cornell

*Major Representative – E-Board*

2024 – Present

- Spearheaded outreach and programming for a community of **200+ underrepresented STEM students**, increasing event participation by **40%** semester-over-semester
- Organized **10+ academic workshops** and networking events focused on research prep, exam strategies, and career development.

### JEart Mental Health Association

*Co-Founder*

2020 – 2024

- Led a youth-led non-profit with **15+ volunteers**, reaching **400+ students** nationwide
- Boosted participation **35% Year-over-Year** by driving social media campaigns and website marketing
- Coordinated logistics for **20+ workshops and initiatives** across Canada
- Mentored peers and built a collaborative, high-performance team

### Canadian National Fencing Team

*National Team Athlete*

2022 – 2024

- Represented Canada in international competitions across around the world, balancing elite athletic training with academic rigor
- Demonstrated **resilience and persistence** through years of intensive training, injury recovery, and high-stakes competition

## TECHNICAL SKILLS

**Languages:** Java, Python, TypeScript, LaTeX

**Framework:** Pandas, NumPy, Next.js, Node.js, PyTorch, CSV