# Elaine Hong

646-391-1038 | eh698@cornell.edu | linkedin.com/in/elaine-hong-cornell | github.com/elaineh16

## Education

**Cornell University, College of Engineering** Expected May 2028
*B.S. Computer Science and B.S. Operations Research & Information Engineering* *Ithaca, NY*

**Coursework:** Computer System Organization, Machine Learning, Data Structures & Algorithms, Object-Oriented Programming, Probability & Statistics, Linear Optimization, Differential Equations

**Activities: NCAA Division I Varsity Fencing**, Society of Women Engineers at Cornell, Cornell ORIE Club

## Work Experience

**FinMD** June 2026 – August 2026
*Software Engineer Intern* *Miami, FL*

- Architected a live analytics dashboard for **3 products** (SCOPE, PRISM, RADAR) with server-side aggregation
- Designed and shipped PostgreSQL functions for physician identity resolution and status history on **4 surfaces**
- Offloaded dashboard filtering to server-side pagination, cutting p50 page-load latency by **60%** across all views
- Hardened tenant-scoped APIs with row-level security policies and ownership validation to protect physician data

**Anote AI** June 2026 – August 2026
*Machine Learning Engineer Intern* *New York, NY*

- Ran a **7-condition RAG ablation** on 133 FinanceBench questions, blocking weak pipelines from production
- Found ROUGE-L understated numeric accuracy by **10–16**×; semantic chunking reached **34.8% Exact Match**
- Built React outreach automation with OAuth and adaptive rate-limiting for high-throughput campaign execution

## Projects

**Bear Escape (BigRed//Hacks Winner)** | *React, TypeScript, Python, Gemini API, OpenCV, SpaceTimeDB*

- Won **Best Use of Gemini** and **Best UI** out of **200+** participants for an AI-powered multiplayer rhythm game
- Built synchronized gameplay with Gemini-generated beatmaps, OpenCV motion controls, and SpaceTimeDB

**NaviDate** | *Next.js, TypeScript, Supabase, Gemini API, Google Maps API*

- Built an Ithaca date planner with web, voice, and iMessage interfaces sharing one validated itinerary planner
- Engineered the Gemini pipeline that sequences nearby places into timed itineraries, retrying with failure feedback
- Integrated Google Places and Routes APIs for nearby venue search, walking-time estimates, and interactive maps

## Research

**AI for Combinatorial Optimization** August 2026 – Present
*Cornell Engineering Undergraduate Research* *Ithaca, NY*

- Applying LLM reasoning to open problems in **antimatroid convexity** and exploring structural conjectures
- Analyzing large-scale **mixed-integer programming** datasets to identify drivers of solver runtime variability

**LLM Reasoning in Chess** August 2025 – June 2026
*Cornell Engineering Undergraduate Research* *Ithaca, NY*

- Benchmarked LLM reasoning against Stockfish across **10,000+ positions** and **20+ prompting strategies**
- Identified strategic failure modes across **200+ games**, measuring effects on move quality and reasoning

## Leadership

**Conference Director** | *Society of Women Engineers at Cornell* Jan 2026 – Present

- Lead conference programming and logistics, expanding professional opportunities for women in engineering
- Coordinate speakers, sponsors, and workshop sessions, managing timelines across the planning committee

## Technical Skills

**Languages**: Python, C++, TypeScript, JavaScript, Java, SQL, C
**Frameworks & AI**: React, Next.js, FastAPI, LangChain, RAG Pipelines, LLM Evaluation, Pandas, NumPy, OpenCV
**Data & Infrastructure**: PostgreSQL, MySQL, Redis, Docker, AWS EC2, REST APIs, WebSockets, Linux