Andrew Hua

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Education

Carnegie Mellon University Pittsburgh, PA

B.S. in Computational and Applied Mathematics, B.S. in Artificial Intelligence Aug 2024 – May 2028

- Cumulative GPA: 3.8/4.0; Dean's List, High Honors (Fall 2024, 2025; Spring 2025, 2026)
- Awards: Champion, Canadian Intermediate Mathematics Competition (Top individual score of 9000 worldwide contestants); 2nd Place, Harvard-MIT Mathematics Tournament; 4x AIME Qualifier
- Relevant Coursework: Foundations of Software Engineering, Artificial Intelligence, Machine Learning, Data Structures and Algorithms, Autonomous Agents, Functional Programming, Theoretical Computation

Experience

S&P Global New York, NY

Software Engineer Intern June 2026 – August 2026

- Built a multi-agent workflow to produce business insights and data visualizations for the reliabilty of High Value Ratings applications used by 2M+ external users and 40k+ internal employees, cutting division-wide application error rate by 6%.
- Built MCP tools, servers, and conversational agents allowing the CTO and senior leadership to sift 3M+ error logs, latency events, and problem tickets on demand using natural language queries, replacing manual pulls from Databricks and Splunk Observability Cloud and guiding Ratings/company-wide direction.
- Built a code repository scanner using an internal LLM and a RAG pipeline vectorizing 600+ pages of best-practice documentation for Oracle, Postgres, and MongoDB to flag dangerous, inefficient, and unreliable database queries before deployment.

AnthrAI San Francisco, CA

Software Engineer Intern Dec 2025 – June 2026

- Built AI web-navigation agents that simulate 6 configurable user personas with over 90% behavioral similarity to real users, enabling automated hypothesis testing on third party web interfaces.
- Shipped an end-to-end UI/UX testing platform (Next.js, Vercel) that orchestrated 12k+ automated agents across 400+ A/B and hypothesis-test batches for 1,000+ users.
- Developed KPI/performance metrics using Python/SQL to analyze 1200+ simulation batches, cutting simulation failures by 25% and reducing agent navigation steps/API costs by 40%.

Projects

Dynamic Memory Allocator in C Pittsburgh, PA

Intro to Computer Systems Mar 2026

- Designed and implemented a custom dynamic memory allocator in C (malloc/free/realloc/calloc), evolving the free-block data structure from a linear implicit list into a segregated free list indexed by size class, increasing throughput 65x and memory utilization to 74% via block coalescing and footer elimination.
- Authored a heap consistency checker to validate block alignment, header integrity, and free-list correctness, enabling systematic detection of memory corruption.

RNN Language Model with Self-Attention Pittsburgh, PA

Intro to Machine Learning Nov 2025

- Built an RNN language model with self-attention, a custom tokenizer, and greedy/stochastic decoding, trained on 100K short-story examples (10K held out) across 20 configurations on cloud GPUs (batch sizes up to 256, hidden/embedding dims up to 512).
- Achieved a final validation loss of 2.30 (≈10 perplexity); tracked and visualized evaluation metrics with NumPy and Matplotlib.

Technical Skills

- **Languages**: Python, SQL, TypeScript, Java, C++ **ML/AI**: PyTorch, Numpy, Pandas, RAG, MCP, LLMs
  Data & Infra: Databricks, MongoDB, Postgres, Docker, Kubernetes, Git, Linux **Web**: Next.js, React, Angular