Anthony Wong

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EDUCATION

Brown University, Sc.B. Applied Math-Computer Science, A.B. Math; GPA: *4.0/4.0*   *Expected Graduation: May 2026*
Collegiate School: SAT: 1570; National Merit Scholar

Coursework: *Deep Learning, *Reinforcement Learning, *Optimization, *Math Stat., *Robust ML, *Applied Probability, AlphaGeometry, Real Analysis, Manifolds, Complex Analysis, Stoch Calc, Math ML, Abstract Alg, 'Stat, 'Lin Alg, Stats (TA)
                                                                                            (* denotes Graduate, ' denotes Honors)

EXPERIENCE

Quantitative Trading Intern - Citadel Securities   New York, NY | *June 2025 - Aug 2025*
- Research-Driven Trading: Generated $10 million strategy w/alpha feature extraction and forecast modelling research
- Index Options: Developed framework to systematically trade on vol surface relative to internal models (XGBoost, Ridge Regression, Transformers)
- Return Offer Received

Software Engineering Intern - Capital One   Philadelphia, PA | *June 2024 - Aug 2024*
- Developed Generative AI LLM to customize responses for customers based on their banking data
- Integrated Text2SQL within LangChain/LlamaIndex, created **RAG** evaluation (F1/ROUGE + embedding-similarity)
- Implemented few-shot on-the-fly learning to showcase efficacy of model even with limited data and computation

Software Engineering Intern - Regeneron   Tarrytown, NY | *May 2023 - Aug 2023*
- Built ETL pipelines with SQL, structuring data from data lake **(AWS S3)** to warehouse **(Redshift)**
- Detected and traced data inconsistency w/ **Pyspark + Kafka in EMR**; handled multimodal image and video data

COMPETITIONS AND AWARDS

- **#404** / 4,000 — **Putnam**, Score: 23   (Top 500 Placement)
- **#92** / 19,000 — **AMC 12**, Score: 135   (Distinguished Honor Roll)
- **#215**/ 6,400 — **AIME**, Score: 9   (3x Qualifier, 94% among qualifiers)
- **#55** — US **Chess**, Peak ELO: 1970   (ranked top 100 for my age 2013-2022)

RESEARCH EXPERIENCE

World Model Finetuning - Balestriero Lab   Providence, RI | *Sep 2025 - Present*
- Applying SOTA RL fine-tuning **(GRPO)** and post-training techniques under Prof. Randall Balestriero
- Training imitation-learned actors from world model MPC **(DINO-WM, JEPA)** to amortize future rollout planning
- Implementing world models, training loops, and video data on continuous tasks in Gym-like environments

Large Language Models - LUNAR NLP Lab.   Providence, RI | *Mar 2025 - Present*
- Interpreting impact of exemplar ordering for **in-context learning** under Prof. Ellie Pavlick's Lab
- Experimenting with mech interp **(activation patching, linear probes, SAEs)** for ICL reasoning tasks
- Ordering examples by bias, complexity, and uncertainty, examining effect on chain of thought and next-token logits

Probability Theory - Brown Applied Math Dept.   Providence, RI | *Jan 2024 - May 2025*
- Working on **stochastic processes** with Prof. Oanh Nguyen, using real analysis, probability, and large deviation theory
- Proved asymptotics of the SIS contact process on random graphs, answering classical questions from **statistical physics**
- Research write-up can be found here

RL for Systems Optimization - Brown Database Group   Providence, RI | *Jan 2023 - Jan 2024*
- Trained reinforcement learners **(Open AI PPO, MuZero)** to allocate compute in distributed data streaming

PROJECTS

Meta Hacker Cup
- Solved competitive programming algorithm puzzles; **round 2 qualifier, finishing top 100 US** in Rds. 1 & 2

Computational Biology Research - Cornell Weill
- Selected as **Regeneron Science Talent Search** (STS) Semifinalist
- Implemented Transformer Models (Deepmind AlphaFold) to predict 3D protein structures from amino acids

SKILLS

Communication: Accomplished Writer (Won a Scholastic Writing Gold Key), Fluent in Mandarin, Basic Spanish
Programming Languages: Python, C, C++, SQL, Java, Matlab, Kafka, Spark, MapReduce, Hadoop, Docker, Kubernetes, GPU, Cuda
Libraries: Pandas, Pytorch, Scipy, Statsmodels, Tensorflow, SkLearn, PySpark, MongoDB, Stable Baselines, AI Gym