KEVIN CONG

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EDUCATION

- **HARVARD UNIVERSITY**
  Bachelor of Arts in Math and Statistics
  GPA: 4.0
  Cambridge MA, 2022 - 2026 (expected)
- **PHILLIPS EXETER ACADEMY**
  Exeter NH, 2018 - 2022

RELEVANT COURSEWORK

- MATH
  - 55A/B (Linear + Abstract Algebra, Real + Complex Analysis)
  - 123 (Algebra II)
  - 132 (Differential Topology)
  - 213a (Graduate Complex Analysis)
  - 223a (Algebraic Number Theory)
  - 229 (Analytic Number Theory)
- STAT
  - 210/212 (Probability I/II)
  - 220 (Bayesian Data Analysis)
  - 244 (Linear/Generalized Linear Models)
  - 216 (High-Dimensional Probability)
  - 211 (Grad Statistical Inference)
  - 186 (Causal Inference)
- CS
  - 2243 (Algorithms for Data Science)
  - 124 (Data Structures & Algorithms)
  - 181 (Machine Learning)
  - 2281 (Topics in Foundations of ML)
  - 61 (Systems Programming)
  - 2080 (Differential Privacy)
  - 2620 (Distributed Systems)

SERVICES

- Co-hosted Math Research Outreach Conference (Math ROCs) to help roughly 400 young students across the U.S. learn about research (2021)
- Head Tutor, helping others in the community through peer tutoring math, latin, physics, and chemistry (2021-2022)
- Exeter Student Service Organization (ESSO) introducing very young students to soccer/ chess (2018-2022)

SKILLS

- ML, Neural Network, Deep Learning, NLP, GPT, Transformer and Reinforcement Learning
- Python, PyTorch, Pandas, NumPy, Jupyter notebook
- Latex, Git, VS Code
- Mac OS, Microsoft Office, Slack/Discord

HOBBIES

- Dance
- Jazz Drummer
- Soccer
- Classical Languages enthusiast (Latin prose and poetry)

AWARDS

- **International Mathematical Olympiad (IMO) Gold Medal (2022)**
- **Romanian Masters in Mathematics (RMM) Silver Medal (2020)**
- **USAMO Winner '20-'21, Gold '22; USAJMO Winner '17, '19**
- **Research Science Institute (RSI) Top 5 Paper (2021)**
- **Regeneron Science Talent Search (STS) Semifinalist (2022)**
- **Phillips Exeter Academy Hubert E. Teschemacher, 1874, Scholarship (2022)**

WORK EXPERIENCE

Jane Street Trading Internship — New York, 2024 May-August

RESEARCH EXPERIENCE

Harvard College Research Program — Harvard University, 2025 June-August - Present

- Conducted theoretical ML research under the mentorship of Prof. Sitan Chen.
- Worked on finding algorithmic improvements to masked diffusion-model sampling in a toy model setting (work in progress).

ICML 2025 Workshop Paper — Vancouver, Canada, 2025 August

- Presented poster DP-AdamW: Investigating Decoupled Weight Decay and Bias Correction in Private Deep Learning on a differentially private version of the AdamW optimizer at the CFAgentic and DIG-BUGS workshop.

Duluth REU Program — University of Minnesota, Duluth, 2023 June-August

Working on research projects in combinatorics.

- In process of writing a joint paper on orderings of lattice paths.
- In process of writing a paper about Ramsey-style problems on permutation pattern waves.

Research Science Institute (RSI) — Virtual, 2021 July-August

Researched and wrote a paper on the sizes of Furstenberg Sets in finite fields under the guidance of Alex Ortiz (MIT).

- Found constructions and generalized existing upper bounds on the maximal sizes of Furstenberg sizes in finite fields F_q^n. Presented in the 2021 RSI Symposium.
- Paper included in the RSI compendium and awarded one of the top 5 of the 2021 program.
- Paper won the Semifinalist Award at the 2022 Regeneron STS competition.

PRIMES-USA — Virtual, 2021-2022

Researched and wrote a paper on square tilings of translation surfaces under the guidance of Prof. Sergiy Merenkov (CCNY-CUNY).

- Extended methods in Oded Schramm's *Square Tilings with Prescribed Combinatorics* to tilings of the torus (i.e. doubly periodic plane tilings). Determined a method of constructing a tiling given an incidence (contacts) graph and proved uniqueness up to certain conditions. Also analyzed tilings in general translation surfaces, including the octagonal translation surface.
- Presented in the 2021-22 annual PRIMES conference.

Directed Reading Program (DRP) — Harvard University, 2022

Learned math topics outside the standard curriculum through independent study projects.

- Fall 2022: Learned about the representation theory of symmetric groups and connections to combinatorics, particularly Young tableaux. Read from The Symmetric Group by Bruce Sagan. Mentored by Victor Wang (Harvard University).

OTHER EXPERIENCE

CBAI Winter ML Bootcamp — Berkeley CA, 2023 January

Built ML skills in order to contribute to applied AI Alignment research.

- Learned and implemented classical ML techniques including ResNets, CNNs, and Backpropagation.
- Explored and implemented advanced ML models and concepts including GPT, Transformers, Reinforcement Learning (RL) models.
- Collaborated with the group through pair-programming and fast iteration.

Harvard AI Safety Team (HAIST) — Harvard University, 2022 Fall

Joined Intro Fellowship conducting research for reducing risks from advanced AI.

- Learned Richard Ngo's AGI Safety Fundamentals.
- Read papers and discussed varying aspects of the AI Safety problem and potential methods of approach.