Anna Deng

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Education

Massachusetts Institute of Technology Grad Yr 2030

- Double major in Mathematics (Course 18) and Computer Science (Course 6-3)
- Relevant coursework: Robotic Manipulation (G), Dynamic System Modeling and Control Design, Design and Analysis of Algorithms, Algebra I
- Activities and socities: MIT Motorsports (Autonomous Team), Harvard-MIT Math Tournament (HMMT) Staff, MIT AI Alignment (Hermes Fellow), MIT Educational Studies Program, MIT Figure Skating Competition Team

Experience

Undergraduate Researcher - MIT CSAIL Sep 2026 - Present

- Conducting research through UROP in the Computational Design & Fabrication Group under Professor Wojciech Matusik for neural dynamics modeling for robotics

Researcher - Algoverse Feb 2025 - Aug 2026

- Developed semantic entropy probes trained on hidden states to improve response evaluation for LLM judge models; research accepted to BlackBoxNLP 2025 co-located with EMNLP, GitHub
- Researched AI control methods using monitor debate as part of AI Safety Fellowship, GitHub

Intern - MIT PRIMES CrowdMath Internship Feb 2025 - Nov 2025

- Explore factorization properties like atomicity and factorization lengths in cyclic semirings with AI integration under Dr. Felix Gotti and Dr. Marly Gotti

Intern - Aspiring Scientists Summer Internship Program (ASSIP) Jun 2025 - Aug 2025

- Developed machine learning models using remote sensing data to predict regional risk of air quality–related cancers under Dr. Ziheng Sun, project accepted to American Geophysical Union 2025, GitHub

Researcher - Non-Trivial Research Fellow Feb 2025 - Aug 2025

- Researched robustness of post-hoc interpretability methods like SHAP under adversarial perturbation for legal prediction models, GitHub, final report

Participant - Program in Mathematics for Young Scientists (PROMYS) Jun 2024 - Aug 2024

- Completed intensive 6-week math summer program; studied number theory and Galois Theory, participated in an exploratory lab on fractional linear functions

Publications

- Dani, J., **Deng, A.**, Gotti, M., Li, B., Paladiya, A., Vulakh, J., & Zeng, J. (2026). On the set of atoms and strong atoms in additive monoids of cyclic semidomains. Communications in Algebra, 1–13. https://doi.org/10.1080/00927872.2026.2628318
- **Deng, A.**, Gotti, F., & Zeng, J. (2026). Factorizations in rational monogenic semidomains. In review, preprint.

Awards & Honors

- 2025 Canada International Mathematical Olympiad (IMO) Training Camp Participant, top 16 students
- 2025, 2026 European Girls Math Olympiad (EGMO) Team Canada Selection Test Qualifier
- 2025 Math Prize for Girls Honorable Mention and Olympiad Bronze Medalist, ranked 28th in top 300 girls
- 5x AIME qualifier, 2x Canadian Mathematical Olympiad (CMO) qualifier

Skills

- Languages & Tools: Python, Java, C++, HTML/CSS, git
- Concepts: Natural Language Processing, Supervised Learning, Reinforcement Learning, Deep Learning