

# Aaryan Samanta

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## Summary

- **Lead author of two peer-reviewed publications:** AIAM 2025 (*Quantum GA-GNN for multimodal classification*) and IJHSR (*C. elegans genetic variants for mito resilience*); <1% of U.S. high schoolers publish in AI/comp bio venues.
- USACO 2025 US Open: **Dual Perfect Scores** (Gold & Silver, 1000/1000); 1 of only 8 U.S. high schoolers nationwide.
- AMC 10 & 12 National 1st Place Perfect Scores (150/150); 2x AIME qualifier
- **Founder & President of AI Ethos, Inc. (501(c)(3))** and **NextGenAI International**; scaled ethical AI education to 75+ students across 3 countries.
- SAT **1570** (800 Math) | GPA **4.0** UW / **4.70** W | UCSB Summer Research Academy **youngest scholar**; ongoing research in biomedical ultrasound imaging under **Stanford Urology emeritus faculty**.

## Areas of Interest

- Artificial Intelligence
- Machine Learning
- Graph Neural Networks
- Ethical AI
- Quantum Computing
- Competitive Algorithms
- Bioinformatics & Med Imaging
- Healthcare AI

## Education

- **Legend College Preparatory**, Cupertino, CA, 10th Grade, Class of 2028
- **GPA: 4.70** Weighted, **4.0** Unweighted
- **APs: 3** Completed (all 5s), total **25** planned by graduation
- **SAT: 1570 (800 Math)**

## Research & Publications

- **Research Scholar (Mentor: Christos E. Constantinou, Associate Professor of Urology, Emeritus, Stanford University School of Medicine), Jan'26–Present:** Analyzed anonymized pelvic floor ultrasound data across cohorts & stimulation states; developed 3D models from records/publication data for kinematic & pathophysiologic insights.
- **Lead Author, AIAM 2025 International Conference Publication, Nov'25:** *Quantum-Inspired Hybrid Genetic Algorithm and Graph Neural Network Ensemble for Multimodal Classification*; peer-reviewed proceedings.
- **UCSB SRA Scholar & Lead Author, IJHSR Pub. (Jul–Dec'25):** Youngest accepted (top ~10% rate); capstone "Resetting the Clocks: Mitochondrial Quality Control via Genetic Adaptation"—identified resilience genes in *C. elegans* CX11314/EG4725 via comp bio analysis; paper: "Natural genetic variation in mitochondrial health-regulating genes..."; peer-reviewed journal.
- **AI Research Intern, Legend College Prep AI Lab, Jun'25:** Built CNN for pneumonia detection from chest X-rays (>90% accuracy); developed full pipeline (preprocessing, augmentation, training, evaluation).
- **Data Science Research Scholar, Legend College Prep AI Lab, Sep '25:** Disease-Symptom Demographic EDA; applied ML/statistical analysis to patient data, identified demographic correlations, and built public-health visualizations.

## Awards & Honors

- **Lead Author, AIAM 2025** Peer-Reviewed Publication (International AI & Mfg. Conference, <1% HS acceptance)
- **USACO 2025 US Open Dual Perfect Scores** (Gold & Silver, 1000/1000); top ~0.1% globally.
- **AMC 10 & 12 National 1st Place Perfect Scores** (150/150); 2x AIME Qualifier.
- **UCSB Summer Research Academy Scholar** – Youngest accepted (top ~10 % admission rate, IJHSR publication).
- **Lead Author, IJHSR**, Peer-Reviewed (International Journal of High School Research)
- **NHSS National Scholar** (Top 1% Academic & Leadership Recognition).

## Leadership & Global Impact

- **Founder/President, AI Ethos, Inc. (501(c)(3))** • 2025–Present: Directed ethical AI bias mitigation workshops for 75+ students across 3 countries; promoted equitable AI access.
- **Founder/President, NextGenAI International** • 2025–Present: Built international student organization with 50+ members; hosted international seminars expanding global student network.
- **Founder/Chief, Global AI Ambassador** • 2025–Present: Created first ever high school Global AI ambassador role; collaborated with educators and principals in Taiwan and the U.S. to advance responsible AI adoption.
- **Co-Captain, Cupertino Junior Olympiad Math/CS Team** • 2024–Present: Mentored 20+ peers to AIME/USACO Gold qualifications.

- **Volunteer Team Leader, VA Palo Alto Health Care** • 2024–Present: Directed audits of 50+ elderly medical images; standardized AI-assisted diagnostic workflows.
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## Additional Distinctions

- **Track & Field JV Anchor**, MVHS Matadors: Set all-time 9<sup>th</sup> grade school records (100m: 11.75s); Rookie of the Year; League Champions
  - **Percussion Section Leader**, MVHS Concert Band: Directed 10-member section to Unanimous Superior & Perfect Score, CMEA Festival.
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## Technical Proficiency

- **Languages:** Python (PyTorch, TensorFlow, NumPy, Pandas, scikit-learn), Java, JavaScript
  - **Domains:** Graph Neural Networks, Genetic Algorithms, CNNs, Bioinformatics, Ethical AI
  - **Tools:** MATLAB, Git, LaTeX, Linux
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## References

- [Dr. Tian Yishuai](#), Postdoctoral Fellow, Tsinghua University & Research Fellow, Nanjing University
  - [Laurence Dang](#), Dean of Academics, Chair, Dept. of Mathematics and Sciences, Legend College Preparatory
  - [Carlos Febrero](#), AI Expert & Mentor, Computer Science Instructor, Legend College Preparatory
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## World Language Proficiency

- **Spanish:** AP Spanish Level
- **Bengali:** Beginner Level