ANNE CHRISTIONO

E-mail: anchris@mit.edu Mobile: (281) 725-8561 Cambridge, MA 02139

EDUCATION:

Massachusetts Institute of Technology, Cambridge, MA *2024 – 2028*

Bachelor of Science in Computer Science and Mathematics *GPA: 5.0/5.0*

Relevant Courses: Machine Learning, Algorithms, Probability & Random Variables, Linear Algebra, Programming, Physics II

Activities: MIT Hacking Medicine (Executive), Society of Women Engineers (Executive), Women in EECS, IEEE, Undergrad Math Assoc.

William P. Clements High School, Sugar Land, TX *2020 – 2024*

High School Diploma, Summa Cum Laude *GPA: 4.67/4.00 | Rank: 5/640 | SAT: 1580 (R: 780; M: 800) | AP: 5/5 on 14 exams*

SKILLS:

- Technical Skills: Proficiency in Python, Java, HTML/CSS/JS, SQL; extensive work with scikit-learn, LaTeX, MS Office
- Leadership, Entrepreneurship, Problem-Solving, Teamwork, Adaptability, Time Management, Communication & Presentation

EXPERIENCE:

Undergraduate Researcher, National University of Singapore (NUS) Computing – AI for Social Good Lab *03/2025 – present*

Multimodal Computational Psychometric Modeling of Human Attitudes and Behavioral Intentions

- Developing multimodal conversational AI chatbot by integrating LLMs with TTS/STT systems for real-time sentiment analysis
- Extracting features from text/voice data & applied ML-driven causal graph analysis to identify causes of mental health stigma

Undergraduate Researcher, MIT Media Lab *09/2024 – 01/2025*

Harnessing Language Models for Autonomous Biological Discovery

- Developed PyLabRobot, a versatile cross-platform Python interface to program a wide range of liquid-handling robots
- Leveraged LangChain (LLMs) to implement PyLabRobot features to execute experiments based on natural language prompts

Research Intern, Houston Methodist Research Institute – Mathematics in Medicine Department *05/2023 – 08/2023*

Predicting Nanoparticle Toxicity Through Machine Learning-Based Models

- Engineered and evaluated 18 tree-based, nonlinear, and linear classification models (XGBoost, CatBoost, SVM, KNN) to classify nanoparticle toxicity using curated dataset of 8,000+ samples and 19 physicochemical features
- Implemented nested 10-fold cross-validation and GridSearch for hyperparameter optimization and robust model selection
- Utilized SHAP analysis for model explainability & feature selection; quantified generalizability (88.7% accuracy on new data)

Data Analytics Research Intern, The MITRE Corporation *06/2022 – 08/2022*

State-of-the-Practice Analysis of U.S. Synthetic Biology Ecosystem (Synthetic Biology Moonshot, sponsored by U.S. Dept of Defense)

- Conducted statistical analyses of the International Genetically Engineering Machine (iGEM) competition, academic literature review, business reports, and interviewing of Subject Matter Experts in the SynBio field
- Multiple reports published internally to MITRE; presented final project to the company leaderships in summer symposium

Researcher in Optimization & Mathematical Modeling, DSM Academy affiliated w/ Texas State Univ. *10/2021 – 03/2022*

The Wiener Index: From Trees to Graphs with Many Cut-Edges

- Designed graph theory algorithm computing distance-based metric in sparse chemical graphs, optimizing traversal efficiency
- Proved extremal bounds for distance metrics in graphs w/ many cut-edges & multiple pseudo-components w/ combinatorics

PUBLICATIONS:

- Cave, J., **Christiono, A**., et al. (2025). Rational Design of Safer Inorganic Nanoparticles Via Mechanistic Modeling-informed Machine Learning. *ACS Nano*, *19*(23), 21538–21555. https://doi.org/10.1021/acsnano.5c03590
- **Christiono, A.,** et al. (2022). The Wiener Index: From Trees to Graphs with Many Cut-Edges [Conference presentation abstract]. 53rd Southeastern Int'l Conference in Combinatorics, Graph Theory, and Computing, Florida Atlantic University.

HONORS AND AWARDS:

- USA Computing Olympiad (USACO): Gold Division Competitor, since 2021
- National Center for Women & Information Technology: 2x National Honorable Mention & Houston Award Winner, 2022-23
- American Invitational Mathematics Examinations (AIME): 5x Qualifier, 2020-2024
- Math Prize for Girls: 2x Invitee, hosted at the Massachusetts Institute of Technology, 2021 and 2023
- 2023 Coolidge Senator: Top 100/4,100+, $1,000 scholarship & all-expenses paid trip to Coolidge Senators Centennial Summit
- Science Olympiad: 2x National Medalist, 2x National Science Olympiad Qualifier, 25+ medals in CS/math/biology events
- USA Biology Olympiad (USABO): Semifinalist, March 2023
- New York Times STEM Writing Contest: Runner-Up (Top 24 of 3,500+ submissions worldwide), May 2022
- Piano: 4x National Gold Cup by the National Federation of Music Clubs; 2022 Outstanding All-State Winner

LEADERSHIP AND COMMUNITY INITIATIVES:

NUS High School of Math and Science: Teacher for Advanced Calculus & Machine Learning *01/2025 – 02/2025*

- Prepared and led calculus and ML courses for penultimate-year students as part of MIT's Global Teaching Labs in Singapore

INTEGIRLS Houston: Advisor (present), Chapter Director (2022-2024), Website Director (2021-2022) *08/2021 – present*

Global youth-led non-profit to bridge the gender gap in STEM through free, virtual math contests for female & nonbinary students

- Led 9 team members to organize contests (participants doubled to 130+ globally); raised $10K+ from sponsors annually (doubled from previous year, newly acquired sponsorship from AOPS, Hudson River Trading, Jane Street, Geogebra)