Sarene Choudhury

360 Central Park West, Apt 5E, New York, NY 10025, USA *Mobile:* +1 917 975 8647
Github: https://github.com/sarenechoudhury *Website:* https://sarenechoudhury.github.io/ *Email*: sareneac@icloud.com

Highly motivated student with strong background in science and mathematics, and with excellent work ethic and creative abilities. Seeking to apply my computer, data-analysis, and problem-solving skills as an intern at your company.

EDUCATION

University of Chicago, Chicago, IL – Computer Science and Cinema Studies Major *Class of 2027*

Relevant Coursework:

- **Intro to Computer Science I & II:** algorithms and data structures; recursion; functions as first-class objects; software design.
- **Systems Programming I & II:** machine language programming; performance measurement; system-level I/O; bit-level programming; memory organization.
- **ML Fundamentals: Theory & Practice:** ML models; supervised and unsupervised learning; loss functions; risk; empirical risk and overfitting; regression and classification; clustering; gradient boosting; decision trees; random forests; NNs; deep learning.
- **Discrete Math:** induction; graph theory and trees; set and number theory; combinatorics; sequences; asymptotic equality; rates of growth.
- **Theory of Algorithms:** sorting and searching; graph, randomized, approximation, and greedy algorithms; algorithmic number theory; combinatorial optimization; dynamic programming; graph search; methods of algorithm analysis.
- **Calculus I & II**

Horace Mann School, New York, NY *Class of 2023*

Relevant Coursework: Computer Science Seminar, Theoretical Computer Science, Art of Data, Software Engineering, Calculus, Honors Geometry, Honors Algebra II & Trigonometry, Mobile App Development.

WORK EXPERIENCE

- Quantbot Technologies LP, New York, NY, USA. Quant Research Intern *Jun–Aug 2024*
  - Built ML models using Keras, Tensorflow, and LightGBM. Tested functions to upgrade company baseline from Python 3.9 to 3.11.
  - Researched and tested benefits of quantized gradients in LightGBM models.
  - Created DeepChecks API suites for automated model evaluations in an online setting.
  - Explored feature generation using OptionsTAQ data for equity-returns prediction.
  - Experimented with neural network implementation concerning layer types, normalization, quantization, early stopping, and augmented boosting, and combination models with NN and LGBM implementation.
- Breakwater Yacht Club, Sag Harbor, NY. Sailing Instructor. *Summer 2021 & Summer 2022*
- Math and SSAT tutor for former GLAM (Girls Learning Advanced Math) student. *2021-2022*

AREAS OF EXPERTISE

- **Data Science**: Experience in analyzing data sets using Python with pandas (and basic R). Proficient in ML modeling.
- **Programming**: Experience with Python, JavaScript, C, HTML, SQL, CSS, and beginner's R and C#. Built user interfaces using Vue. Created games using Unity. Knowledge of Excel.
- **Finance**: Applied investment concepts to analyze companies. Invested personal summer earnings in specific stocks.

MAJOR ACHIEVEMENTS

- **Data Science**: Created an ML model using R to forecast COVID-19 mortality in NYC.
- **Programming**: Coded a Huffman Coding Tree and BFS/DFS algorithms. Front and back-end design of a web application. UX Design and research. Created a programmable LED light cube using Arduino.

AWARDS & HONORS

- Director General of Model UN team at Horace Mann. Two-time recipient of Outstanding Delegate award.
- Executive Editor of *Cinemann* (Film and TV Magazine) at Horace Mann.
- Managing Editor of *The Review* (Current Events Magazine) at Horace Mann.

INTERESTS

- Team Manager for U Chicago Club Basketball - coordinating games, social media manager.
- Volunteer for and co-run newsletter for GLAM – Girls Learning Advanced Math, to teach math to middle-school girls.