Roma Bhattacharjee

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EDUCATION & ECs

PRINCETON UNIVERSITY
B.S.E. Student | Class of 2025 | GPA UW 3.8/4.0
Princeton, NJ

- ❖ Concentration: Computer Science (COS) or Operations Research & Financial Engineering (ORF)
- ❖ Certificates: Optimization and Quantitative Decision Science, Statistics & Machine Learning
- ❖ Relevant courses: Physics 105 & 104, Math 203 & 204, COS 226, ORF 245, PHI 201
- ❖ Member of Princeton Debate Panel, lead SWE on The Daily Princetonian Tech Team, and member of Princeton Women in Entrepreneurship

UNIVERSITY OF CHICAGO MASTERS PROGRAM IN COMPUTER SCIENCE (MPCS)
Non-degree-seeking high school student | 2019–2021
Chicago, IL

- ❖ Courses: iOS Application Development (Grade: A); Algorithms (Grade: A); Introduction to Software Engineering (Grade: A)

UNIVERSITY OF CHICAGO LABORATORY SCHOOLS
High School Diploma | Class of 2021 | GPA UW 4.0/4.0
Chicago, IL

- ❖ Awards: Brian Swan award for AT Physics I , Achievement in Computer Science award, Eunice Helmkamp McGuire Excellence in Writing award, Finalist.
- ❖ Executive Board of Student Council (Director of Technology), debating team (Novice), Vice-President of Girl-Up Club, Varsity Volleyball (Co-Captain), Board of Artsfest
- ❖ Relevant courses: AT Physics I & II; Bio; AP CS; Computer Architecture; Discrete Math; AI & ML; AT Economics; Linear Algebra/Multivariate Calculus
- ❖ Member of Science, Math (qualified for AIME 2020, 2021), Robotics

EXTRACURRICULARS

- ❖ Played piano since 4 y/o. Completed all 12 levels of the Achievement in Music (AIM) program.

APTITUDE & SKILLS

Standardized Test Scores & Awards
SAT 1590/1600 [Aug '20] • ACT 36/36 [Dec '19] • National Merit Scholarship 2021 Finalist: 224/226 • 2021 Semifinalist for U.S. Presidential Scholars Program • SAT Math 2: 800 • SAT Physics: 790

Software Skill Sets
MacOS • Windows • Linux/Unix • C/C++ • Java • Python • Bash • HTML • JavaScript • PHP • Swift • React • Node.js • LaTeX • MySQL • PostgreSQL • Firebase • Excel • NumPy + Pandas • MATLAB • Fusion360 • Blender • Flask • PyQt5 • Tensorflow • Apache Web Server • Kafka • InfluxDB • Grafana • Docker

EXPERIENCE

APPLIED AI/ML AT UCHICAGO SAND LAB [Link]
Summer Research Assistant | Jun 2021–Aug 2021 | Chicago, IL

- ❖ Selected for a research internship at the University of Chicago SAND Lab (Security, Algorithms, Networking, and Data) through the Data Science Institute (DSI) Summer Lab program. I worked with Professor Ben Y. Zhao.
- ❖ Conducted research on physical backdoor attacks in computer vision models. Developed an automated process using graph analysis techniques to uncover viable physical triggers in pre-existing object datasets for training.

COMPUTER-AIDED DIAGNOSIS: ML/AI AT UCHICAGO GIGER LAB [Link]
Summer Research Assistant | Jun 2020–Jun 2021 | Chicago, IL

- ❖ Worked with Dr. Karen Drukker, Dr. Deepa Sheth, and Ms. Lindsay Douglas (PhD candidate) on project about quantitative radiomic analysis for abbreviated/ultrafast breast MRI. Radiomics is high throughput conversion of images to mineable data that can be viewed as descriptors of tumors and "normal" tissue.
- ❖ First author of a research abstract accepted to Optics and Photonics organization SPIE's Medical Imaging Conference, February 2021—delivered an oral presentation ([Link]). Project involved comparing breast lesion segmentation methods, some of which utilized convolutional neural networks.

CENTER FOR NEW DATA [Link]
Software Engineering Volunteer | Apr 2020–Feb 2021 | Chicago, IL

- ❖ A not-for-profit organization connecting governments, public health organizations, and health care providers with best-in-class experts across science, policy and technology.
- ❖ Assisted in software engineering: extract/transform/load data processes (Airflow, PostgreSQL), Django development

CARBONLESS COMMUNITY [Link]
Chief Technology Officer | May 2019–June 2021 | Chicago, IL

- ❖ We assisted communities in taking easy, thoughtful measures to reduce their carbon footprints. Also conducted reverse auction for renewable energy and carbon offsets

CITADEL [Link]
Intern at Equities Data Engineering Team | Jun 2019 – Aug 2019 | Chicago, IL

- ❖ Developed usage tracking architecture. Built "milestone" dashboard to track ETL processes. Gained experience with Python, Kafka, Postgres, REST APIs, Flask, Airflow, Grafana, InfluxDB, and Docker
- ❖ Delivered a "lunch and learn" talk on Kafka to the department
- ❖ Evaluation/feedback from my manager: *"What makes Roma stand out is her willingness to take on something unknown and her ability to learn it through doing research … Her willingness to take on a new problem where she lacks the domain knowledge and build that knowledge without hesitation will make her an exceptional engineer in the future."*