

Pratham Gandhi
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Portfolio: prathgan.github.io

EDUCATION

The University of Chicago

B.S. (honors) in Computer Science

B.A. in Economics; Chicago Booth Trott Business Program

Honors and Awards: Cum Laude, Dean's List, Honors Thesis, Jeff Metcalf Fellow, Trott Business Program Fellow

Chicago, IL

Sep. 2020 - Jun. 2024

RESEARCH EXPERIENCE

Computing for Anyone (CANON) Lab, University of Chicago

Chicago, IL

Undergraduate Research Assistant (PI: Prof. Diana Franklin)

Jun 2020 - Dec 2021; Spring 2024

- Co-authored a study of middle school students' metacognitive learning strategy ("TIPP&SEE"); contributed to data coding, figures, analysis, and writing. The study reports high average accuracy, strongest performance on *Observe*, more blanks on *Predict*, and a notable "question position" effect; teacher differences also emerged.
- Built analysis pipelines (Python/JavaScript) for worksheet responses and Scratch artifacts, and produced targeted visualizations that the team used to inspect behavior by worksheet phase and question position.
- Designed a two-player "Space Walk" entanglement game for introductory Quantum Computing learning: Node.js/Express backend with Socket.IO for real-time sync; p5.js front-end; players navigate separate mazes with entangled movement, timed levels, and a built-in chat of preset prompts.
- Converted paper research instruments for remote classrooms by rebuilding TIPP&SEE worksheets as Google Forms, enabling consistent item structures, auto-grading, and clean data export during Chicago Public Schools' full remote term.
- Created animated lesson videos aligned to Scratch Encore modules to support teacher delivery and strengthen consistency across classrooms.

DesCyPhy (Cyber-Physical Systems) Lab, University of Southern California

Los Angeles, CA

Research Intern (PI: Prof. Pierluigi Nuzzo; mentor: Chanwook Oh)

Jun 2019 - Aug 2019

- Developed **COASTL**, a Python toolkit that implements core contract operations (e.g., conjunction, composition) and parses Signal Temporal Logic (STL) into trees to make contract computation and checking tractable.
- Encoded STL into mixed-integer constraints (with Big-M and epsilon bounds) so guarantees could be solved via an optimizer, yielding behaviors that satisfy specified contracts.
- Demonstrated contract-based synthesis on an autonomous-vehicle pathing scenario (timed goals and safety regions) to illustrate how contract conjunction/saturation guides controller behavior.
- Presented a lab poster summarizing the approach, examples, and tool outputs.

HONORS THESIS

HACI: A Haptic-Audio Code Interface to Improve Educational Outcomes for Visually Impaired Introductory Programming Students — *Computer Science Honors Bachelor's Thesis, University of Chicago, 2024*

Designed coding interface integrating structured speech with Arduino-based haptic glove to aid non-visual navigation, comprehension, and debugging; took the system from literature review to prototype to pilot and reported findings.

PUBLICATIONS & POSTERS

Gandhi, P. [*HACI: A Haptic-Audio Code Interface \(HACI\) to Improve Educational Outcomes for Introductory Programming Students with Visual Impairments*](#). Undergraduate Honors Thesis, University of Chicago, 2024.

Tsan, J., **Gandhi, P.**, Singer, E., Franklin, D. [*An Analysis of Middle-School Student Behavior using the TIPP&SEE Metacognitive Learning Strategy*](#). Manuscript, UChicago CANON Lab, 2021.

Gandhi, P. [*COASTL: Contract Operations and Signal Temporal Logic Processing*](#). Poster, USC DesCyPhy Lab, 2019.

INDUSTRY EXPERIENCE

Dell Technologies

Austin, TX

Data Scientist II, Go-to-Market Strategy Data Science

Aug 2024 - Present (2x intern in 2022/23)

- Built a seller territory optimization engine combining graph partitioning, matching optimization, and stochastic search; partnered with stakeholders to drive adoption across 1000+ sellers, covering 1M+ customers.
- Developed under-performance detection and reassignment via propensity models and mixed-integer optimization.
- Consolidated team standards and documentation into a comprehensive internal reference; coordinated a small writing group and established a consistent LLM-augmented authoring workflow.
- Organized a 200-member biweekly cross-team data science knowledge share.

Code Your Dreams

Data Science & Development Intern

Chicago, IL
Jun 2021 - Aug 2021

- Created a 15-module curriculum in data science, visualization, and analytics for incarcerated young-adult learners; packaged lessons and assessments for reuse.
- Produced short instructor training videos to support adoption.
- Helped design an AWS DeepRacer community event to support CS education initiatives.

Polsky Center for Entrepreneurship & Innovation

Consultant Intern

Chicago, IL
Sep 2020 - Dec 2021

- Led 10-week, data-driven engagements with women- and minority-owned South Side Chicago small businesses, delivering recommendations on resource allocation and funding strategy

TEACHING

Usable Security and Privacy

Teaching Assistant, CMSC 23210/33210

Spring 2024

University of Chicago

Introduction to Data Engineering

Teaching Assistant, DATA 13600

Spring 2024

University of Chicago

Introduction to Data Science II

Graduate Teaching Assistant, CMSC 11900

Winter 2024

University of Chicago

Data Visualization and Communication

Graduate Teaching Assistant, DATA 22700

Fall 2024, Spring 2023

University of Chicago

SERVICE & LEADERSHIP

Pareto Solutions Consulting (UChicago Management Consulting Club)

Managing Director (President); Technology Director; Engagement Manager

Chicago, IL
Mar 2021 - Jun 2024

- Oversaw 50-person club operations (recruiting, client sourcing, project work, and inclusion) and led engagements covering product ideation, machine learning system development, and revenue analytics for Fortune 500 companies.

Kappa Theta Pi (UChicago Professional Technology Fraternity)

President; Director of Membership

Chicago, IL
Mar 2021 - Jun 2024

- Directed an 8-person executive board of a 90+ person organization; ran biannual recruiting cycles; organized university-wide technical workshops on data science, machine learning, and visualization.

UChicago Data4All

Mentor

Chicago, IL
Sep 2022 - Dec 2022

- Mentored underserved (96% underrepresented minorities or girls) South Side Chicago high school students in weekly data science sessions to develop skills and introduce data science-related college and career opportunities.

UChicago Institute of Politics TechTeam

Director of Client Sourcing; Project Lead

Chicago, IL
Sep 2020 - Dec 2021

- Led technical projects supporting Chicago community organizations (children's centers, learning exchanges); Led a team of 3 to build relationships with potential partner organizations, scope projects, and document impact.

FIRST Robotics Team 5806

Captain; Head of Hardware; Hardware Team Lead

Bronx, NY
Sep 2016 - Jun 2020

- Led a 30-student team to design, build, and test an industrial-grade robot annually; worked on manipulation and locomotion mechanisms and blended-autonomy control with computer-vision-guided motion planning.
- Helped plan and host multi-day outreach events for elementary and middle schools.

Amar Jyoti Charitable Trust School

Volunteer Instructor

Delhi, India
Jul - Sep 2015, 2016, 2017, 2018, 2019

- Created and delivered programming lessons for K-12 students in mixed (abled & differently-abled) classes; adapted programming lessons and built accessible tooling for non-visual programming for students with disabilities.

HM246 Programming & Robotics After School Program

Lead Mentor

Bronx, NY
Sep 2016 - Jun 2020

- Created curriculum and led a team of 3 in delivering bi-annual 3-month Scratch and Lego Robotics after-school programs for underrepresented local Bronx students

AWARDS

[FIRST Robotics Competition Global Dean's List Semifinalist](#) (2019)

[Xerox Award for Innovation and Information Technology](#) (2019)

SKILLS

Python, JavaScript, C, SQL, R, Java, MATLAB, LaTeX, pandas, scikit-learn, Tensorflow, Azure, AWS, Git