Prameet Guha

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Education

University of Illinois Urbana-Champaign | *B.S. in Computer Science + Astronomy* Expected May 2029
- **UIUC GPA:** *4.0/4.0* (MATH 241 completed)
- **Current Coursework (Fall 2026):** *CS 128:* Introduction to CS II (C++); *CS 173:* Discrete Structures; *MATH 257:* Lin. Alg. w Computational Applications; *DTX 221:* Human-Centered Design Across Disciplines

Projects

prameet.space | *Portfolio & Astronomy Resource Hub* Jun 2025 – Present
- Built a portfolio and astronomy resource hub featuring **Moongazers**, a ZIP-code stargazing planner that consolidates observing conditions, visible objects, and weather into a beginner-friendly view.
- Used third-party APIs and web scraping to aggregate astronomy information; built data-backed features with Next.js and Supabase/PostgreSQL and deployed on Vercel.

AstroCoach | *Astronomy/Astrophysics Olympiad Preparation Platform* Jun 2026 – Present
- Built a full-stack Astro Olympiad training platform with 730+ practice items from source-attributed real Olympiad questions; supports search/filtering, images, multi-part problems, checking, explanations, bookmarks, and progress dashboard.
- Built with Next.js/React, TypeScript, Tailwind CSS, Supabase Auth/PostgreSQL/Storage, Prisma; currently developing a **Pro tier** with Gemini-powered AI assistance and Stripe subscriptions/premium access, deployed on Vercel.

MicroG-Clean | *Computer Vision Project* 2025
- On a four-student team, created and annotated a custom bacteria-detection dataset in Roboflow and fine-tuned a pretrained YOLOv8m detector in Google Colab for microscopy imagery.
- Trained for 50 epochs on 116 training images; on an 11-image validation split with 141 labeled instances, achieved 0.64 mAP@50, 0.65 precision, and 0.60 recall.

Research & Publications

Machine Learning for Wind Turbine Performance Prediction | *Published Research* May 2024 – Aug 2026
- **First author** of " AI-Machine Learning Method for Design and Predictive Analysis of Wind Turbine ," published in *Advances in Theoretical & Computational Physics* (2026).
- Analyzed and visualized meteorological data from 19 Illinois locations in Python (pandas, NumPy, Matplotlib) and contributed to supervised multivariable polynomial-regression modeling of wind-turbine performance.

Stellar Anomaly / Dyson Candidate Research | *ASDRP Research* Dec 2024 – Present
- On a three-student team, led analysis of 38,182 observations from NASA's Exoplanet Archive across four WISE infrared bands in Orange Data Mining, screening magnitude/error outliers to narrow the dataset to 83 stars for follow-up.
- Used standard-deviation-based filtering to prioritize candidate variables and develop a ruleset for comparison with prior Dyson-object searches; presented the research workflow through ASDRP to 400+ attendees .

Experience

ReliablyME | *Front-End Development Intern* Summer 2025
- Implemented responsive front-end components in JavaScript and HTML/CSS within an existing website codebase, resolving cross-device layout and interaction issues.
- Used Git-based team workflows to debug changes and iterate on implementation based on team feedback.

Mathnasium | *Instructor* Sep 2024 – Aug 2026
- Taught mathematics to students from Pre-K through 11th grade, breaking down complex concepts and adapting explanations to individual learning styles.

Honors & Awards

- **International Astronomy Honors:** Team Canada selection – **International Olympiad on Astronomy and Astrophysics** Jr. (**IOAA-Jr**); International Astronomy Olympiad (**IAO**); Gold Honor (Top 3%), International Astronomy and Astrophysics Competition (IAAC).
- **Math & Astronomy Competitions:** Qualifier for **American Invitational Mathematics Examination (AIME)** (2024); 13th, Canadian Astronomy and Astrophysics Olympiad (CAAO, 2023; youngest Top-15); 1st Place, Canadian Astronomy Competition – Junior Division (2023).
- **Innovation & Research Competitions:** Conrad Innovator Award (2025); Top 350 Finalist, 2025 Blue Ocean Student Entrepreneur Competition (12,784 participants); **Two-time Top 50 Proposal Worldwide**, CERN Beamline for Schools (2025 & 2026; distinct projects).

Technical Skills

Languages: Java, Python, C++, JavaScript/TypeScript, HTML/CSS | **Web/Data:** React, Next.js, Tailwind CSS, Supabase, PostgreSQL, Prisma
AI/ML/Data: Gemini API, YOLOv8m, Roboflow, Orange Data Mining, pandas, NumPy, Matplotlib
Developer Tools/Platforms: Git, GitHub, Stripe, Vercel, Claude Code, Google Colab
Other Interests: Astrophotography, percussion/drum set, human-centered design, volleyball, AR/XR