

# Tarun Kota

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## EDUCATION

### Yale University

New Haven, CT

**Majors:** Computer science and Data science; **GPA:** 3.8 (Technical GPA: 3.9)

September 2022–June 2026

- **Relevant Coursework (2022–2023):** Introduction to Computer Science, Data Structures and Programming Techniques, Data Analysis and Reasoning, Introduction to Psychology, Linear Algebra, Political Economy of Foreign Aid (Research Methods Class)
- **Hahn Scholar:** (Offered to only 10 students in entire class of 2026 based on prior research accomplishments)

### Eastview High School

Apple Valley, MN

Graduated Summa Cum Laude with highest honors; **GPA** 3.98; **SAT** 1550

September 2018– June 2022

**Coursework:** 14 Advancement Placement Courses; college honors-level math courses (differential equations & multivariable calculus)

## TECHNICAL EXPERIENCE

### Caltech Infrared Processing Analysis Center

Pasadena, CA

*Lead Researcher & Project Manager*

August 2020–July 2022

- Discovered 16 stars through creating a novel star detection method that applied machine learning methods to the CatWISE database
- Wrote custom python and SQL scripts to collect, transform, clean, and store 900,000+ stellar data, increasing efficiency of analysis
- Oversaw & mentored a team of 4 undergraduate and high school researchers on their own research projects
- Presented findings at the American Astronomical meeting as part of an international press conference (only high school presenter)
- **Publication:** Kota, T., Kirkpatrick, J.~D., Caselden, D., et al.,” Discovery of 16 new members of the Solar Neighborhood” (2022), *Astronomical Journal*, DOI:10.3847/1538-3881/ac4713

### Carnegie Mellon University, Tepper School of Business

Pittsburgh, PA

*Basketball Analytics Researcher*

June 2022–Present

- Conducted statistical analysis on 2020–2022 NBA regular season and playoff data to determine pertinent variables to lineup success.
- Applied Stackelberg equilibrium analysis on lineups in 2022 NBA finals to analyze and rate efficacy coaching decisions made.
- Currently writing paper intended for publication in Journal of Sports Analytics and deliverables for sports teams/companies of interest

### Yale Sports Analytics Club

New Haven, CT

*Quantitative Research Analyst*

September 2022–Present

- Built a machine learning model that ranks recruits based on various features to streamline recruiting process for Yale Football team
- Designed and produced “shot maps” for Yale hockey teams to identify weaknesses in opposing goalies and defenses
- Currently building R Shiny app and Tableau dashboards for Yale Basketball Team to visualize strengths and weaknesses of players.

### Western University Department of Physics and Astronomy

London, Ontario

*Research Intern*

May 2021–August 2021

- Led project that focused on determining observation targets for *POET*, a robotic telescope funded by the Canadian Space Agency
- Mined and analyzed data from 10+ astronomical databases to drive optimization and improvement of target selection
- Proposed and implemented a candidate selection model, leading to a final list of ~100 observation targets

## SERVICE EXPERIENCE

### Student Astrophysics Society

Eagan, MN

*Co-Founder*

April 2020–August 2022

- Organized monthly lectures by astrophysicists and biweekly book clubs for 125+ Society members to foster astrophysics interest
- Created mentoring program to provide underserved students the resources and mentorship to pursue their own research projects
- Chaired a board of advisors composed of 9 astronomers from NASA JPL, Univ. of Arizona, Fiske Planetarium, and other institutions

### Divarta Publications

Eagan, MN

*Founder & Editor-in-Chief*

September 2019–Present

- Managed publication staff, grammar quality, graphic design, and marketing for a student magazine with 25+ writers/900+ readers
- Created Alexa Application to distribute articles and used Amazon RDS and SMTP to store client data and distribute newsletters.

## HONORS, SKILLS & INTERESTS

**Honors:** National Young Astronomer Award; International Science and Engineering Fair finalist (first in school district’s history); presented research at American Astronomical meeting; invited to present at Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun.

**Skills:** Python (numpy, pandas, Scikit-learn, TensorFlow), Scala, Java, R, SQL, Tableau, C, C++, AWS, Excel VBA, intermediate Spanish

**Interests:** Sports analytics, improvisational comedy, close-up magic, education advocacy, stargazing, effective altruism, personal finance

