

Yash M. Mehta

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EDUCATION

Indian Institute of Science, Bangalore

August 2017 - Present

Bachelor of Science (Physics Major)

CGPA : 8.8/10.0

Senior Secondary Education (CBSE)

upto March 2017

Science Subjects : 94.0%

RESEARCH EXPERIENCE

TIFR, Mumbai

Dec 2018 - Dec 2019

Advisor: Prof. Sourav Chatterjee

- Developed an assembly of codes (Python) to test whether a globular cluster's tidal potential is a responsible factor for lowering of binary fraction in such clusters, and how this varies with parameters.
- Modified the code of COSMIC-popsynth (FORTRAN and Python) to generate and evolve binary star systems of input initial age, mass distribution, time period distribution and other orbital parameters.

IIST, Trivandrum

Dec 2017

Advisor: Dr. Sarita Vig

- As a part of a group, calibrated and edited radio interferometric data from GMRT for the construction, display and analysis of an astronomical image with Fourier synthesis methods, using AIPS software.
- Estimated various parameters of the HII region and the corresponding massive YSO present in the radio image constructed; and refined our conclusions using the IRAS infrared images of the same region.

ACADEMIC AWARDS AND ACHIEVEMENTS

- Simon Marais Mathematics Competition merit list 2020
- National Initiative on Undergraduate Science (NIUS) Program in Physics 2018-2019
- Madhava Mathematics Competition merit list 2018, 2019
- Ranked 493rd in Joint Entrance Examination, taken up by 1.2 million students 2017
- Infosys Foundation felicitation and Cash prize for Olympiad medallists 2016
- Silver Medalist** at the International Olympiad on Astronomy and Astrophysics (IOAA) 2016
- Best Data Analyst** and Team Member Qualification at Astronomy Selection Camp 2016
- Ranked 42nd in KVPY, earned fellowship and financial award as a student in basic sciences 2016
- Qualified for INMO (2015, 2016), INAO (2016, 2017), INPhO (2017) and INChO (2017) 2015-2017
- Country-wide rank 1 in IIT-Guwahati's **Technothlon** 2015, 2016
- Country-wide rank 1 in SOF **International Maths Olympiad** 2009, 2013

COMPUTER SKILLS

Languages	Python, JavaScript, C, C++, HTML, Go*, FORTRAN*, Assembly*
Libraries	Numpy, Scipy, Pandas, Tensorflow, Tkinter, Selenium, Sockets, etc.
Web & Databases	CSS, Flask, Django*, React, Vue*, MySQL, PostgreSQL, SQLite, etc.
Other Tools	L ^A T _E X, Git, Octave, SciDavis, Matplotlib, MATLAB*, Heroku, etc.
Operating Systems	Windows, Linux

MENTORING EXPERIENCE

Teaching Assistant (Code/Astro Workshop, Caltech) *2021*

Responsible for curriculum review for teaching fundamental software engineering skills and best practices for building sustainable open-source packages for the workshop to be held on June 21-25.

Student Facilitator (Selection and Training Camp for IOAA / GeCAA, HBCSE, Mumbai) *2018 - 2020*

Mentored about 30 country-wide top high school students at the orientation cum selection camp to select the national team for the International Olympiad on Astronomy and Astrophysics (IOAA) in 2018 and 2019; and mentored the selected team of 5 in 2019 (IOAA) and team of 10 in 2020 (GeCAA).

LEADERSHIP EXPERIENCE AND POSITIONS OF RESPONSIBILITY

Member of National Astronomy Olympiad Resource Generation Camp *Oct 2018 - Present*

Responsible for generating candidate questions for the Indian National Astronomy Olympiad and the Selection Camp of team India for the International Olympiad on Astronomy and Astrophysics.

Convener of Rangmanch - IISc Dramatics Club *Sep 2018 - Sep 2019*

Co-organised a rehearsed reading as the opening performance at the Rangashankara Theatre Festival.

Founder and Convener of IISc Astronomy and Astrophysics Club *Dec 2017 - Aug 2019*

Invited talks from distinguished speakers such as the Director of Nehru Planetarium Delhi, initiated an astronomy outreach programme for school students in Bangalore, and hosted sky & telescope sessions.

Cofounder and Finances & Sponsorship in-charge of Cube Fiesta Surat *Jan 2016 - Present*

Cofounded a non-profit organisation for promoting speedcubing as a popular sport by organising annual speedcubing competitions and workshops in Surat, affiliated with the World Cube Association.

CONFERENCES AND POPULAR TALKS

The Stellar Structure (Ensemble - IISc Physics Club) *Sep 2018, Jan 2021*

Demonstrated the equilibrium model of a star under convective and radiative modes of transfer, using which, motivated stellar evolution on the HR diagram and the existence of variable stars.

Introduction to Astronomy 1 - 3 (Astrae - IISc Astronomy Club) *Jan - Mar 2018*

Co-delivered a series of talks on topics ranging from positional astronomy to the distance ladder to night sky observation; as an introduction to astronomy in the newly formed Astronomy club.

Encounters on the Random Walk (Student Seminars, IISc Mathematics Dept.) *Nov 2017*

Presented a generalised solution of the N-dimensional Random Walk problem, and subject to certain assumptions, put forth examples of its utility in determining the number of species in a certain habitat, and in optimally searching for misplaced sandals.

Solving a Rubik's Cube using 5 Faces (National Mathematics Conference, Bhopal) *Dec 2015*

Motivated how the group of all move sequences on a Rubik's cube generated by six moves - R, L, F, B, U and D, can also be generated by just five of these moves.

MISCELLANEOUS

- **Guinness World Record** for the fastest time to solve a Rubik's cube in team of two in January 2019
- Reached the Top Rank (1 Kyu) in Codewars, a popular competitive coding platform
- Silver at 4x4x4 blindfolded and Bronze at 5x5x5 blindfolded speedcubing at **Indian Nationals 2018**
- Qualified for Inter-IISER Sports Meet for 4x400m relay (2018, 2019), 400m (2019) and long jump (2019)
- Created speedsolving methods for 3x3x3 (Mehta), One-handed 3x3x3 (YruRU), etc.
- Passed (1st class or better) 5 years of Tabla, 3 years of Harmonium and 3 years of Indian classical vocals