

# Yashas Gaurav Todi

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## EDUCATION

### The Cathedral and John Connon School

2010-Present

#### • International Baccalaureate Diploma Program (IBDP)

Higher Level Courses : Mathematics Analysis and Approaches, Physics, Economics

#### • International General Certificate of Secondary Education (I.G.S.E.)

## STANDARDISED TESTS

### SAT

2023

- Score: 1510 | Mathematics: 800 | English: 710

## ACADEMIC HONORS AND AWARDS

### School

#### Honours Distinction

2023-2024

- Academic excellence award for achieving grades in 9th, 10th and 11th.

### International

#### IRIS (Initiative for Research and Innovation in STEM) National Science Fair

2024

- Top 100 in India's biggest science fair.
- Selected as the top 5 projects in the Environmental Engineering category.

#### Stanford Math Tournament Honorable Award of Algebra

2024

#### CREST Gold Award for Anti- Reflective Coating Paper

2023

#### University of Waterloo Galois contest distinction and Galois Medal

#### UKMT Silver Medal

2023

#### Physics Bowl Distinction Asian Honorable Award (division 1)

2023

## SOLAR ENERGY RESEARCH & OUTREACH

### Solar Panel Fault Detection System

2023-2024

- Developed an algorithm to predict and detect faults in solar panels using image processing, aiming to reduce downtime and maintenance costs.
- Utilized five classifiers along with a convolutional neural network (CNN) built with TensorFlow for fault detection.
- Achieved approximately 95% accuracy with the best-performing supervised learning model in the system.

### Solar Panel Community Cost Analysis

- Learnt how to analyse current energy requirements and predict solar and energy requirements.
- Integrated learnings and created a solar panel cost analysis report for neighbourhood (5 buildings 1000+ residents) which included monetary and environmental benefits.
- Presented and got approval of the implementation of the solar panel fault detection system to these buildings.

## ENGINEERING EXPERIENCE

### Research Internships

#### Blue Star Ltd

2023-2024

#### Environmental engineering Intern

- Analyzed leakages via their Remote Monitoring System (RMS) to predict their future performance and provide strategic plans to the company.
- Simulated live chiller leakages in order to obtain further data.
- Co-authored a research paper which analyzed the environmental impact of Refrigerant Leakages in Chillers and developed an algorithm for the prediction of such leakages.
- Developed the algorithm in excel and python which could be implemented in their RMS system.
- Projected Savings of \$100,700 in FY 2024 (till September) by utilizing the algorithm.

#### Borosil Ltd

2024

#### Engineering research Intern

- Studied mechanics of Solar glass transmissions and Anti reflective Coatings.
- Completed literature survey on anti-reflective coatings.
- Conducted live experiments and research on UV Vis NIR spectrophotometer.
- Authored a research paper titled ' A performance evaluation of anti-reflective coatings on solar glass' under Dr Jeteendra Seghal.

#### Dhoot Automotive Systems

2023-2024

#### Electrical engineering Intern

- Conducted live experiments based on electronics of cells.
- Authored a research paper titled ' Studying the energy density and battery chemistry of lithium ion batteries.

#### Energy Advisory Services Private Ltd

#### Research Intern

- Learned the different ways in which sustainable energy can help industries and which analyses are necessary to make industries carbon free.
- Analyzed energy audits(such as carbon neutral audits) and water credits the company had already completed and actively helped the company via research in ongoing ones.
- Formulated a report on the usage of energy in the state of Maharashtra and it's implications on India.

## Summer Program

### Attended imperial engineering summer school

2024

### Independent Experimentation

2024

- Authored a research paper exploring the role of fluid dynamics in the circular hydraulic jump.
- Created an experimental set up and performed live experiments on it.

### AI Inspirit Scholars

2024

- Collaborated with peers across the world to complete a project named 'searching for exoplanets'.
- Used data from NASA's Kepler space telescope to train AI models for detecting exoplanets.
- Explored the method of transit photometry, and learned how astronomers detect planets orbiting stars.

2024

## LEADERSHIP EXPERIENCE

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### Table Tennis

#### School Table Tennis Captain (Grade 1-12)

2024-2025

- Organized School Tryouts for 200+ students.
- Captained School in National Level Tournaments.

### Mathematics and Physics Team

#### IB Captain

2024-2025

- Selected to represent school in International Physics and Mathematics Tournaments. (Physics Bowl and Stanford Math Competition)

### Football

#### Vice Captain

2024-2025

### Economics Round Square International Competition

#### Captain

2024

- Co-author of research paper titled, 'How has the Kusum solar panel Scheme impacted farmers' agricultural productivity and income levels in Rajasthan since 2019?'.

## TABLE TENNIS ACHIEVEMENTS

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- Captained India 'A' in ISF world school games. It is the biggest international school event and is in collaboration with the International Olympic committee. Played as India's first player against every nation and played the most games.
- Selected to represent India IBSO out of 150+ students in India's biggest national level Interschool tournament.
- 2<sup>nd</sup> place in Mumbai Men's division 2 interclub tournament.

2024

## COMMUNITY SERVICE

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### Habitat for Humanity

2021-2023

- Collaborated with Habitat and 2 classmates to fundraise \$3110
- Built houses, lavatories and provided electricity to the 'Hope Village' which was earlier constructed using sticks, cow dung, and mud.
- Participated in Habitat's monsoon campaign to raise awareness about the poor shelter in India by running the Tata Mumbai Marathon and interviewing with individuals who lived in 'Hope Village' and Dhobhighat (slum in Mumbai).

### Yasham Foundation

2023

- Taught 7th-grade children Mathematics, Science, and English weekly for a year.
- Initiated a homemade bake sale in school, and raised \$300 to provide clothing for each child for a year.

## ONLINE COURSES

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### Multivariable Differential Calculus

2024

- Completed the standford XM521 multivariable calculus course and achieved a score of 102/100 in the final term and an A grade.

## MODEL UNITED NATIONS

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- Outstanding Delegate in- Brown MUN.
- Moderator of specialized committee in an international MUN- CMUN.
- Only delegate ever to be selected for Harvard MUN after first MUN.
- Young entrepreneurs conference, winner of crisis committee and overall winners award.
- Organized tryouts for grades 8-10 for 150+ children.

2023

2024

2024

2024

2023

## FOOTBALL

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- 2<sup>nd</sup> Place in International School Sports Organization (ISSO) National tournament, won the man of the match award in the quarter finals.
- 1<sup>st</sup> place in the Anglo-Indian State School tournament.
- Winner of BD Liga District Tournament.

2023

2022-2023

2023

## LANGUAGES

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- English, Hindi, Marathi, Spanish, French.

## INTERESTS

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- Coding (Python & Javascript), Sustainability (eg: Podcast 'Probably True Solar Stories'), Sports, Reading.