Siddhant Ray
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EDUCATION

Jamnabai Narsee International School (JNIS), *Mumbai*   2020 - 2025
- **IB Diploma: Higher Level**: Physics, Chemistry, Mathematics Analysis and Approaches; **Standard Level**: Economics, Hindi B, English A: Language and Literature
- **IGCSE**: Physics 0625 (**A***), Chemistry 0620 (**A***), Extended Mathematics 0580 (**A***), Additional Mathematics 0606 (**A***), Information and Communication Technology 0417 (**A***), Economics 0455 (**A***), Hindi as Second Language 0549 (**A***), Biology 0610 (**A**), First Language English 0500 (**A**)

STANDARDIZED TESTS:

SAT: 1510 (710 - Evidence-Based Reading & Writing; 800 - Math)   May 2024
IELTS Academic: 8.0 / 9.0 (Listening 8.5; Reading 8.5; Writing 7.5; Speaking 7.0)   September 2024

AWARDS AND HONORS:

- **Industrial Design Award** sponsored by General Motors at **First Robotics Competition** in Turkey Regionals   March 2024
- **Gold Medal of Excellence (School Ranker)** in **International Mathematics Olympiad** in Grade 11   January 2024
- **Medal of Distinction (Zonal Award)** in **International English Olympiad** in Grade 11, **International Rank 90***   December 2023
- **Certificate of Distinction (ICE Certificate)** for achieving **7A*s** in **Cambridge Board Examinations**   August 2023
- **Gold Medal of Excellence (School Ranker)** in **International Mathematics Olympiad** in Grade 10   January 2023
- **Gold Medal of Excellence (School Ranker)** in **International English Olympiad** in Grade 9   December 2021
- **Medal of Distinction (Zonal Award)** in **International General Knowledge Olympiad** in Grade 9   November 2021
- Consistently received **School Rank 1*** in all **International Olympiads** from Grade 9 - 11   2021-23

CORPORATE EXPERIENCE:

Tech Withholding Tax & Gen AI Intern, **Deloitte Haskins & Sells India**, *Mumbai*   July 2024
Deloitte Haskins & Sells a leading Big 4 providing a host of advisory and consultancy services
- A month-long internship where I developed a Lookup function for the **Gen AI** team to obtain specific withholding tax provisions in the income tax law using the 'pandas' library in Python
- Authored a research paper that helped AI analysts better understand the Python code and deploy it in their programs
- This code is now being used by the **Gen AI** Team at Deloitte to implement it in their tech solutions

Machine Learning Intern (Backend Developer), Prisma AI, *Mumbai*   June 2024
Prisma AI is a visionary intelligence company providing visual artificial intelligence and ML-based solutions
- Developed a fully functional blur detector tool for the company's ongoing project at **Sardar Vallabhbhai Patel International Airport, Ahmedabad,** that can differentiate between a clear image and a blurred image using thresholds of Laplacian variance
- Developed an anti-spoofing tool that helps prevent theft activities at banks and other commercial venues
- Explored the intricacies of computer vision, and gained proficiency in OpenCV and Haar Cascade classifier and its wide-scale applications in the development of Machine Learning tools, Deep Learning tools, and software
- Learned concepts like annotation, keypoint assignment, bounding boxes, and training models using the Anaconda Environment

Web Development Intern, **D'Design Studios**, *Mumbai*   December 2022
D'Design Studios is a premium web designing and online marketing company, serving high-value clients internationally
- Designed 2 websites (using HTML, CSS, and JavaScript) for SK Oil Field and Shri Tripura Junior Science College
- Collaborated with the employees at the workspace to understand complex concepts in web development such as flexboxes, CSS grids, media queries, pseudo-classes, and pseudo-elements
- Explored the processes used in web designing entailing slicing followed by programming in HTML, CSS & JavaScript; learned how to enhance the UI / UX (User Interface / User Experience) of the website when serving a client

COMPUTER SCIENCE & ENGINEERING ACTIVITIES: July 2021-Present

- **Owner of a fully monetized YouTube channel - Siddhant's Coding World**; generated up to **$1,000 in revenue**, garnered **500,000+ views** in the past 4 years on all platforms; developed videos solving real-life problems using technology; videos on Python programming and videos on other interesting technology-related topics
- **Created a static website for a turnkey interior design firm called Bed2Bell Interio** using Wix Studio - this was my first commercial assignment where I also learned consumer relations, fulfilling customer requirements on time, and updating the website portfolio gallery on a regular basis
- **Solved the 15 GB storage limit on Google Workspace (Gmail, Google Drive, and Google Photos)** using the POP/IMAP method and Gmail Shuttle Cloud Migration; published 3 YouTube videos on the same which garnered over 150,000 views
- **Developed a 12-video series on Basics of Python Programming**, teaching concepts like dictionaries, string slicing, logical operators, lists & 2D lists, and typecasting; published the course as a playlist on my YouTube channel; garnered over 10,000 views

- **Developed a 12-video series on Basics of Java Programming**, teaching concepts like printing, classes, objects, escape sequences, and iteration; published the course as a playlist on my YouTube channel; garnered over 10,000 views
- **Coded an IoT personal assistant** using Python which carries out functions like opening websites, playing music, and searching for information using voice commands; shared the code and its working as a YouTube video
- **Developed a 'NewsBot'** that gives latest news using an API key in Python; shared the code and its working as a YouTube video

ROBOTICS
Smart IOT Based Plant-Watering System, Innovation Project, *Mumbai, India*   February-June 2024
- Developed a system that plants water autonomously based on the moisture content in the soil
- Used components like NodeMCU ESP8266 Microcontroller Board as the main circuit board, solar panel and a voltage regulator for it, soil moisture sensor, all-weather liquid crystal display for printing the moisture level of the soil, water pump and a relay to regulate it, temperature humidity sensor, and backup batteries
- Implemented this project at various places in Mumbai such as Khar & Bandra (suburbs in Mumbai), which planted water autonomously when connected using a direct tap water supply

FIRST Robotics Competition, *India, Turkey*   2023-2024
- Played an integral role within the mechanical, electrical, and programming team, mastering the end-to-end robot-making process
- Designed and built a custom MK4i L2 swerve drive chassis with a reduction ratio of 6.75:1 and two 2 telescopic arm contraptions, contributing to the robot's functionality; assisted in programming with Java and computer vision integration
- Integrated wiring from the power distribution hub to all components of the robot via a Canbus system (CANcoder connections)
- Awarded the Industrial Design Award for creating a unique 8-part mechanism in the shooter and enhancing the robot's performance

Robotic Arm, Innovation Project, *Punjab, India*   June 2023
- Built a robotic arm using ESP32 Development Wi-Fi Board, EMG (Electromyography) sensors, servo motors, and cardboard, programmed with Arduino UNO to respond based on thresholds of the lift force of individual fingers
- Designed the arm to lift four fingers or the thumb at a time when connected to a human forearm using EMG sensors which detect electrical activity in the forearm and plot a trend on the serial plotter in Arduino, demonstrating advanced control and functionality
- Submitted the project to Plaksha University (India) for demonstration to undergraduate students

RESEARCH PURSUITS
Research Paper on AI-based gold price prediction for India, *Mumbai, India*   January 2024 - September 2024
Worked alongside Dr. Martin Sewell, Senior Research Analyst from the University of Cambridge
- Developed an AI & ML Based Gold Price Predictor in Python using Neural Networks & LSTM by training it on the price of gold in India for the past 24 years to predict and justify the price for 2024
- Used sklearn, keras, and Tensorflow libraries to build the price predictor to achieve an accuracy rate of 96.79%
- Authored this development in the form of a research paper (DOI: https://www.doi.org/10.56726/IRJMETS61395)

Self-made Research Paper, *Prisma AI, Mumbai, India*
- Topic: Developing a deep-learning-based real-time blur detection tool using the Haar Cascade Classifier, leveraging OpenCV, NumPy, and PyQt5 for efficient real-time image processing and user interface implementation
- Authored a research paper in the final week of my internship at Prisma AI on a blur detector tool I developed for the company which can differentiate between clear and blurred images using thresholds of Laplacian variance
- Used Haar Cascade classifier's pre-trained model through an XML (Extensible Markup Language) file for object detection for faces in the frame of a Logitech 720p camera
- The research paper and AI tool are now with Prisma AI who are looking to implement it as required in their tech solutions

LEADERSHIP POSITIONS:
Founder/Owner/Host, YouTube Channel: Siddhant's Coding World   July 2021-Present
  (https://www.youtube.com/@siddhantscodingworld6296)
- **Statistics**: **1,200+** subscribers, **200,000+** views, **$1000** generated
- **Content**: Coding-related content on web development, Python, and Java, and small impactful projects made using these programming languages

Founder/Owner/Mentor, Non-Governmental Organisation (NGO): Elysium - Community Comes First
- **Initiated** an NGO (Non-Governmental Organization) in February 2020 before the COVID-19 pandemic for socio-economic improvement and empowerment in Mumbai **(Instagram followers: 2400+; total posts: 200+)**
- **Led** a group of 20+ interns and trained them on how to make community posts and reels on Instagram for our activities at schools

IBDP Cultural Representative, Student Government, Jamnabai Narsee International School   January 2024 - January 2025
- Elected as the Cultural Head by the student body, representing and organizing cultural activities for a cohort of over 190 students
- Organized Mathathon (Math Interhouse Competition) in Grade 11, Grand Cultural (Interhouse Acting Competition), and Literary Quiz Interhouse competition in Grade 12; learned and mastered the skills of compèring and public speaking

Team Representative/Leader, EUMIND (Europe Meets India) Foreign Exchange Programme
- Led a team of 6 students while interacting online with students from The Netherlands and discussed how cultural norms in the nation affect family life and relations
- Managed the editing, videography, information, report, and communications teams for smooth coordination during report making and submissions of reports on cultural differences between families in The Netherlands and India

EXTRACURRICULAR ACTIVITIES:
MUNs (Model United Nations)   July 2020 - September 2024
- **Chairman** of G20 Committee (biggest committee comprising 98 delegates) at IYC (International Youth Conference) 2024 on the agenda of illicit smuggling and human trafficking in South Asia
- **Chairman** of Night Crisis at IYC (International Youth Conference) 2024 on the agenda of India - Pakistan Liberalisation in 1971
- Won **Best Delegation** in G20 Committee at IYC (International Youth Conference) 2023 on the agenda of drug trafficking in Latin America; came up with a draft resolution to help combat this issue which passed the G20 Committee at IYC 2023
- **Selected** for Night Crisis (10 out of 500+ best delegates get selected) and represented the United Kingdom on the agenda of the China and Taiwan Conflict at IYC 2023

EUMIND (Europe meets India) Foreign Exchange Programme   July 2021 - March 2022
- **Interacted** online with students from The Netherlands and discussed how cultural norms affect family life and relations
- **Wrote** several reports about how families in The Netherlands differ from those in India
- **Conducted** several interviews of 3 different generations lasting over 10+ hours; learned about the emotional connection between families, and their hierarchical structure; researched traditional gender roles and how social support systems differed between both nations
- **Led** a team of 6 members, broadened cultural perspectives, improved teamwork and interpersonal communication skills, and developed articulation skills
- Won the award for the best team for timely and well-ideated submissions of reports

Members of International Schools Association (MISA) Research on Digital Marketing   January 2022 - October 2022
- **Conducted** in-depth primary and secondary research on the role of Digital Marketing in different sizes of firms in India
- **Authored** a research paper with the title: 'Digital marketing and its role in the business success of small and large enterprises - a perspective'
- **Interviewed** 4 first-generation entrepreneurs (Deloitte Haskins & Sells, Herbalife India, Lusso Interior Fitout Studio, and SpiceLab Delhi) and gathered primary data on the extent and impact of digital marketing in the growth of each firm
- **Got selected** to present this research paper to an esteemed jury for the second round of the **MISA** competition

COMMUNITY SERVICE
ELYSIUM - COMMUNITY COMES FIRST NGO, *Mumbai*   February 2020 - Present
- Instagram followers: **2,000+** and **1,000,000+** views on posts and reels
- **Impacted** the lives of up to 400+ students by teaching them real-world applications of finance and how to leverage technology
- **Delivered** mental health talks at several orphanages such as Old Lady's Home & Urja Trust Foundation
- **Carried out** a beach cleanup drive at Versova Beach, a popular beach in Mumbai, India collecting over 50 kg of trash
- **Organized** a marathon to raise cancer awareness by running 10 km in Mumbai

ROBOTICS OUTREACH EVENTS, Team R-Factor #6024:   October 2023 - March 2024
- **Ran** and **hosted** FTC (First Tech Challenge) CenterStage 2024 in India (usually an event organized outside India) with my team; volunteered for pit running (addressing each team and calling them for their respective qualification), robot inspection (checking the robot before qualifications), and field inspection (checking if the robot is compatible for the playfield) at FTC CenterStage 2024 (International Event in Goa)
- **Demonstrated** and **explained** the mechanism and working of our FRC 2024 Crescendo Robot at **IIT Bombay TechFest** (Asia's largest science & technology festival) and **Taqneeq Fest** at Mukesh Patel School of Technology Management and Engineering to a crowd of **120,000+**; assisted under-privileged children from local schools to gain hands-on experience on the robot and also drive the same at IIT TechFest
- **Taught** robotics to **100+** students of **St. Haris High School** (a private school in Mumbai) including skills such as how to use a drilling machine, filing tool, metal cutter, and Dewalt power tool, and introduced them to mechanical elements used in our FRC Robot including shafts, churros, box channels, motors, compliant wheels, and stealth wheels

Sustainability Club, Jamnabai Narsee International School, Mumbai   July 2023 - 2024
- Recycled old crayons to make newer ones by the 'double boiling method' and then placed the melted crayons into molds to make newer crayons
- Distributed these new crayons with professional hand-made packaging to under-privileged children in orphanages in India

Crowdfunding, Milaap.org, fueladream.com, InfinityX Program Delivery Partner, *Mumbai*   July 2020 - Present
- Raised over Rs. 30,000 ($360) to help tribals in Palghar, Maharashtra fight hunger during the COVID-19 pandemic
- Raised over Rs. 40,000 ($480) to help build permanent houses for tribals living in Palghar (a district on the outskirts of Maharashtra)
- Raised over Rs. 30,000 ($360) to help children with Congenital Heart Disease so they can afford surgery at BK Wadia Hospital
- Raised more than Rs. 30,000 ($360) to help 30 NGO robotics teams (500+ students) with registration fees to participate in National Robotics Championships and pursue STEM courses

SKILLS AND INTERESTS
Languages: English, Hindi, Bengali
Interests: Programming, Video & Photo-editing, Content Creation (YouTube), Artificial Intelligence, Machine & Deep Learning, Calculus (Mathematics), Mechanical Physics, Athletics, Cricket
Skills: Python, Java, HTML, CSS, Filmora 9, Adobe Premiere Pro, Adobe Photoshop, Public Speaking, MUNs