Ishaan Parikh

Nikunj Bungalow, next to Karnavati Club, SG Road, Ahmedabad 380058, India

Mobile: +91 88665 55555 **Email:** ishaanparikh8@gmail.com

Education

Ahmedabad International School (AIS), Ahmedabad, India — 2010-Present

- Cambridge A-Levels Board Examination, Grade 11-12 — 2023-2025
- Cambridge IGCSE Board Examination, Grade 9-10 — 2020-2023

Standardized Tests & Advanced Placement Exams

- Five AP: Calculus BC-5, Computer Science A–5, Computer Science Principles–5, Microeconomics–5, Environmental Science-5 — 2023-2024
- SAT: Total-1540 (Math-800, Reading and Writing-740) — 2023

Academic Honors & Awards

School

- Valedictorian, top-scorer in school exams throughout high school — 2024
- Ranked 1st in A level Physics and Chemistry, October mid-term exams — 2024
- Ranked 1st in AS level Physics and Chemistry — 2024
- Ranked 1st in IGCSE Chemistry, Physics, and Biology — 2023
- Ranked 1st in AMC10 — 2023
- Winner, YEA Young Entrepreneurs Award — 2021

International

- British Crest Gold Award — 2024
- Avogadro Chemistry examination: Ranked 1st in school, in the 94th percentile (top 500) internationally, with 5096 participants — 2024
- Canadian Senior Intermediate Math Competition: Ranked 1st in school and International distinction — 2024
- Hypatia Math Contest: Ranked 1st in school and International distinction — 2024
- AP Scholar Award with Distinction — 2023-2024

National

- Runner's up, Indian National Space Settlement Design competition — 2023-2024

Patents

Filed for 2 international patents at Matter Motor

Patent 1 — 2023

- Reviewed different welding techniques and analysed which best suited welding in battery applications.
- Analysed metallurgic properties of copper, and copper hilumin boundaries to validate potential parameters to optimise joint efficiency for battery pack welding. This technology is currently under use for manufacturing motorcycles.
- Observed a 72% increase in joint efficiency for the batteries used in Matter Motor electric vehicles.
- Experimented with Laser Arc welding machines under lab conditions and tested joint efficiency of these welds with different parameters of laser strength, welding speed, and weld pool shape.

Patent 2 — 2024

Worked on a composite material foam for application in battery insulation and cushioning to protect it from oscillations and heat
Material composition: Two compounds comprising of Poly-propylene glycol, and modified poly-iso-cyanate
More details are under NDA: Patent-pending

Materials Science Research

Ahmedabad University Research — 2024

- Mentor: Prof. Sham Gurav; Professor of Practice of Engineering at Ahmedabad University
- Researching and synthesising high strength biodegradable polyesters
- Curating polymers for applications in single use plastics, solving the problem of current low-quality biodegradable polymers

Independent Research Paper (Comparing performance and feasibility of Sodium-ion batteries against Lithium-ion batteries) — 2023-2024

- Mentor: Stepan Ozerov, PhD student, Purdue University
- Reviewed and analysed the economic and electro-chemical shortfalls of flagship Lithium-ion batteries.
- Compared their properties and operating principles with those of Sodium-ion batteries and analysed their feasibility in 3 major areas: grid power storage, electric vehicles, and consumer electronics.

Experiences

Intern, Matter Motor (Premium electric motorcycle startup with over 600 employees, focusing on emerging markets)

Designed a weld fault detector application — 2023

- Developed an intuitive application which can scan for welding faults in Battery Management Systems (BMS).
- Used Android app development and YOLOv8 to identify and locate weld faults.
- Implemented software in the production line to reduce in line checking time by 60%.
- Gained insights into battery operation in EVs and production lines in manufacturing.

Conducted Machine Learning research — 2022

- Developed a novel custom object detector based on the primary data, built upon the YOLO v5 (now v8) architecture.
- Implemented model on Qualcomm Snapdragon 700 series SOC for use in electric vehicles; kick-started their self-driving division.
- Deployed several object detection problems and tested their effectiveness in self-driving applications.
- Analysed and processed primary data for training of on road object detection.

Observerships

- **Arvind Mills**: Visited the world's largest denim manufacturer; explored the chemical process behind textile manufacturing. — 2024
- **Urja Fabrics:** Gained a materials engineering perspective on technical textile production, and their application in aerospace. — 2024
- **Packem:** Investigated and learned the industrial techniques in making industrial bags from plastic waste. — 2024

Mentoring & Teaching

- Founder and Mentor, AIS CubeSat(Satellite) Club; making a satellite which can detect and collect space waste. — 2024
- Teacher's Assistant, Stanford CS106A course; mentoring several groups of 13-15 students from all over the world. — 2024
- Teacher's Assistant, AIS MakerSpace; teaching engineering concepts to students from Grade 1-6. — 2023-2024

- Certified Schoolhouse SAT, Calculus, and Algebra Tutor. 2024
- Tutor to IGCSE Students; taught the ICT curriculum and increased their grade from D to A/B. 2021-2023

Social Entrepreneurship & Activities

Threads4Good Co-Founder and Chief Technical Officer, Ahmedabad, India 2023-Present

An international non-profit organization which upscales waste textile to school bags and donates them to underserved children.

- Empowering 20+ widows and members of disabled community through employment, providing them 1.4 times minimum wage.
- Upcycled 3,000 kgs of textile waste to school bags and saved 6.3 million litres of water.
- Donated bags to 2,600 students across rural India in 5 states; and scaling up internationally to Canada.
- Raised 200,000+ INR through donations, sponsorships and national/international grants.
- Global 3rd place for Young EcoHero Award for young environmental activists.
- Ashoka Ambition Accelerator Award winner. Won a grant for 20,000 INR for my community initiative Threads4Good.
- *Diana Award* winner

Community Science Centre 2022

- Volunteered at Vikram A Sarabhai Community Science Centre, which focuses on providing access to science to the community.
- Conducted experiments with students to spread practical scientific knowledge and help them enjoy science.
- Mentored 40 underserved students from Manav Gulzar (nonprofit) exposing them to STEM reducing dropout rates in high school.

Maker Portfolio 2018-Present

Mechanotrics

- **HydroDrip:** Engineered an automated drip irrigation system which used wastewater to irrigate plants depending on the soil moisture and plant needs. Implemented at Ekalavya School and saved 500 litres of water a week.
- **AutoMedi:** Create a medical drone delivery system which transported small medical packages based on a flight path.
- **Vehcho:** Developed a poker bot which can shuffle and deal cards and play poker with you and advance your skill level.

Python

- **X-ray pneumonia detector:** Used object detection to identify and locate area of pneumonia infection through an X-Ray scan.
- **Movie reviewer**: Uses natural language processing to find out whether a movie is good based on the review given.
- **Cryptography**: Developed a secure asymmetric encryption protocol for communication.

Android apps

- **Dekho:** Created an App to help blind people visualize surroundings using voice over and assembled a headset for ease of use, enabling them to navigate their surroundings and empowering them to live independently.
- **DigiD:** Created a comprehensive digital diary for students to navigate their way through online school during Covid-19.

leadership

Class Representative, Student Council 2024-2025

Head, External School Examinations 2023-2025

- Selected by school leadership to organise external exams for high school students including AMC10/12, UKMT, CEMC.

TEDx Lead Organizer, Radical Reforms 2024

- Led one of the most successful TEDx events in our state with over 200 participants and 8 speakers.
- Identified and invited decorated speakers like famous Indian cricketer Parthiv Patel.
- Directed a team of 40 volunteers; organised them into teams to ensure collaboration and flawless execution.
- Handled budgeting and sponsorships from several companies ensuring 100% coverage of our expenses.

Coach, SKF (a non-profit for underserved girls training them for their shot at football (soccer) glory) 2024

- Taught a group of 12 girls with varying skill levels, providing the best chance to succeed at football and life.
- Curate a coaching, diet, and schooling plan for their income background.

Leader, Indian Space Settlement Design Competition 2023-2024

- Led the team to the Indian nationals for only the second time in the school's history.
- Head of Automation at Indian Nationals for a team of 50 students, leading the team to the runner's up position.

Football (Soccer) Achievements

- All **India** Football Federation registered Level-8 referee. Youngest ever official referee in India. 2024
- Coach, currently training for license. 2024
- Runner's up in SGFI State competition, and selected for the state team. 2024
- Runner's Up in Gujarat State Football Association Football Association competition (State level). 2023
- 2x Runner's Up in India-League U15/U17 (State level). 2021/2023
- Winner and **Best Goalkeeper** in Ahmedabad Soccer Championship U15 (State level). 2022
- Represented my club **internationally** at the Kerala grassroots cup (International level). 2020
- Youngest U15 **team captain** (at age 13) in club history. 2020-2022

Courses & Competitions

- **BitsandCircuits:** Explored engineering concepts at an after-school engineering program. 2018-Present
- **International Research Olympiad:** International semi-finalist (top 10% in the world). 2023
- **Quantum Computing:** On Campus Summer course at **Brown University**, earning a grade of 100% 2022
- **Machine Learning:** 10-week online course with a deep dive into the theory behind ML algorithms, Stanford University. 2022-2023
- **ASSET Think Like a Mathematician:** 6-week selective course teaching applied mathematics, Manipal University. 2021
- **First Lego League:** International competition. Participants solve world problems by engineering; Won Best Design in India. 2019
- **Word Robotics Olympiad (WRO):** represented India internationally at WRO Denmark; regional winner 2018-2019

Skills & Interests

- Technical: 3D printing and CAD design in Blender, Creo, and SketchUp; Arduino and Raspberry Pi microcontrollers; various ML techniques and algorithms: Linear/Polynomial Regression, Artificial/Convolutional Neural Networks, Natural Language processing, YOLO, RCNN; Expert in Python, Java, and web design through HTML.
- Languages: Fluent in English, Hindi, and Gujarati.