

## SHIVAM WADHWA

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### EDUCATION

**Mallya Aditi International School**, Bangalore, India; **2024 - Present**  
-ISC Math, Physics, Chemistry, Biology, English, Grade 12.  
**Vidya Niketan School**, Bangalore, India; **2012 - 2024**  
-ICSE Math, Physics, Chemistry, Biology, English, History, Geography,  
Computer Applications, French, Grade 10

### ACADEMIC HONORS AND ACHIEVEMENTS

**Silver Medallist, Karnataka ICSE School Association (KISA) Science Talk**, Bangalore **July, 2023**  
• Chosen from Vidya Niketan School through a rigorous selection process; only one student selected per school.  
• Shared a 600-word abstract on “Technological Advancements in Sustainable Energy Sources,” in round 2, chosen from a competitive pool of applicants.  
• Presented the abstract + presentation to a distinguished panel of judges, along with a comprehensive Q&A round.  
• Won the silver medal from 100+ participants.  
  
**Gold Medallist, Hongkong International Math Olympiad** **May 2025**  
• Ranked in the top 20 from among 300+ Participants nationwide.

### WORK EXPERIENCE

**Technical Intern, Nettur Technical Training Foundation (NTTF)**, Bangalore **September 2025**  
• Assisted software department head and shop floor supervisor in programming and operating CNC machines.  
• Worked in the Innovation Lab, applying 3D printing and wire electrical discharge machining (EDM) to create and test prototype components.  
• Executed robotic welding operations (MAG and MIG techniques) to learn how metal components are joint.  
• Conducted metrology inspections using precision instruments to verify component dimensions and authored a technical report on learnings.

**Design & Process Manufacturing Intern, NASH Industries**, Bangalore **May 2025**  
Observed and contributed to the application and details of projects including:  
• Development and testing of a dosing control unit for heavy trucks to reduce Nox emissions.  
• Design of a battery management system for electric vehicle applications  
• Gained hands-on understanding of metal fabrication, laser cutting, stamping and surface coating processes.  
• Attended Gemba Kaizen – event to improve material flow in Solid Oxide Fuel Cell module assembly.

### LEADERSHIP POSITIONS

**Founder & Chairperson, Science and Technology Club**, Vidya Niketan School, Bangalore **June 2023-May 2024**  
• Organized the **first** Science and Technology Club at Vidya Niketan, chosen by the principal of the school.  
• Worked on a comprehensive plan for the club, shared ideas with juniors and school staff along with forming a committee of students.  
• Led a team of 25 students, aimed at STEM related activities throughout the school.  
• Worked on two notable projects: involving a robotic arm and a 3D working model of the human heart.

**Captain, U-19 Cricket team**, Vidya Niketan School, Bangalore **June 2022-May 2024**  
• Selected from a competitive pool of 100+ students through practice matches and inter-school tournaments.  
• Led the school team through various inter-school tournaments, involving the prestigious KSCA (Karnataka State Cricket Association)  
• Qualified for the quarter final round amongst 200+ teams.  
• Led weekly practice sessions and set up bowling drills for fast bowlers, coordinating between students and staff.

## **STEM-RELATED ENDEAVORS AND PROJECTS**

**Robotic arm prototype**, Science and Technology Club, Vidya Niketan School

**June 2023-2024**

- Worked on different platforms to write the code, alongside a team of 15 students.
- Used Arduino boards and connected sensory panels to them, eventually creating the glove.
- Connected the glove to the computer system and ran the code, in order to read hand movements.
- Used a 3D printer and laser cutter to create the robotic arm, attached sensory panels from the glove, and integrated both to capture and replicate hand movements.

**Working model of the Human Heart**, Science and Technology club, Vidya Niketan School

**June 2023-2024**

- Researched and mapped the exact dimensions of the human heart to ensure anatomical accuracy.
- 3D printed individual heart components and assembled them into a complete model.
- Designed and programmed a circuit to stimulate the heart's rhythm, integrating it within the assembled model.

**Reusable Wetness Detection Sensor**

**June 2024 - Present**

Designed a reusable wetness detection sensor integrating conductive threads within fabric to sense liquid contact.

- Embedded alternating Input / Output and Ground Conductive threads connected to IoT GPIO pins for real-time wetness detection and data transmission.
- Engineered the sensor to be washable, foldable, and reusable, ensuring durability and cost-effectiveness for healthcare and infant care applications.
- Enabled IoT-based wireless monitoring to detect liquids such as water, urine, or coffee and send instant alerts.
- Aimed at improving hygiene monitoring in hospitals, nurseries, and smart home environments. Recognized by local doctors for its innovating, practical design praised as "a breakthrough in affordable smart sensing."

**Research Paper: Regulatory Shifts in Alzheimer's Cortex**

**April – October 2025**

Conducted independent research on genetic regulation in Alzheimer's affected brain tissue.

- Explored molecular mechanisms behind neuronal decline using advanced bioinformatics analysis.
- Identified key genes linked to memory and cognition loss, offering new perspectives on early diagnosis
- Published in the Curieux Academic Journal for its originality and contribution to neurodegenerative research.
- Cleared the first round of the Saint Yao High School Science Award and applied for the Gold Crest Awards, awaiting results.

## **COMMUNITY SERVICE**

**Founder, ST(EMpower) Bangalore**

**September 2024-Present**

- Organised factory visits for 100+ underprivileged students from ITI (Industrial Training Institute)(Govt. school)
- Exposed students to manufacturing units within the automotive and sustainable industries; showed them process of making lithium-ion batteries.
- Focused on gender inclusion; Aimed to inspire young girls to take up STEM as a long-term career option.
- Conducted career-mapping sessions outlining diverse roles in manufacturing (from assembly line to R&D) and emphasized their long-term viability compared to short-term employment in delivery and fast-food sectors.

**Project Head, People for Animals Shelter, Bangalore**

**April-May 2024**

- Coordinated and responded to over 20+ kite rescue calls, assisting veterinarians in transportation
- Built an enclosure for 2 injured jackals Included planting saplings, cementing rocks to form a den, and digging a 5-foot depression to create an artificial pond.
- Prepared animal feed for over 60 different animals and 7 different species.
- Conducted public awareness presentations on safety in AHI, Animal-Human Interactions.

## **SKILLS AND INTERESTS**

**Languages:** English, Hindi, Tamil, French

**Interests:** Academic: Biology, Chemistry, Physics, Mathematics

Non-Academic: Cricket, Animal Welfare, Reading, Table Tennis

**Skills:** Adaptability, Leadership, Research, Conflict Resolution