BHRIGU UPPAL

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EDUCATION

Sanskriti School: Grades 7-12 (2020 - Present)

Relevant Coursework:

- Grade 11-12: Mathematics, Physics, Chemistry, Computer Science, English Language and Literature
- Grade 9-10: Mathematics, Science, Social Science, Spanish, English Language and Literature, Information Technology
- Class 9: 92.83%; Class 10: 97.33%; Class 11: 94%

ACADEMIC HONORS AND AWARDS

- Awarded **Academic Excellence** in **Grades 9 and 11** (**Top 5%** of class, highest in Computer Science) and **3rd Topper** in Grade 10 CBSE Board exams (2023–2025)
- Awarded **AP Scholar Award with Distinction** by College Board for scoring 5s in 5 AP examinations.
- Awarded **2x CREST Gold Awards** for Project Sensefly and Project Aqua Regain by British Science Association and got opportunity to present research at the **Sigma Xi Innosphere Conference 2025**.
- Received **Letter of Commendation** from **Ministry of Environment, Forest and Climate Change of India** for successfully deploying Project Sensefly at 5+ landfill sites across India. (2025)

STANDARDIZED TESTING

- SAT - **1550/1600** (Math - **800;** EBRW - **750**)
- Advanced Placement: **5/5 in 5 subjects**: Calculus BC, Computer Science A, Pre-Calculus, Microeconomics, Psychology
- TOEFL iBT: **116/120** (Speaking: 30, Listening: 29, Reading: 29, Writing: 28)

PROJECTS

Founder and Innovator, Project Sensefly (Patent Pending) (2022 - Present)

- Developed a sensing device mounted on a drone to send live landfill data about harmful methane emissions online: (Product Description) & deployed it at **5+ major landfills** across India, including Hyderabad and Delhi (Faridabad).
- Received commendation from the **Ministry of Environment, Forest, and Climate Change (MoEFCC)**, Government of India.

Founder and Innovator, Project Aqua Region (Patent Pending) (2024 - Present)

- Developed multi layered greywater filtering system for domestic settings: (Product Description)
- **Deployed in 3 slum communities** through the All India Citizens' Alliance for Progress & Development (AICAPD). (link)

STEM Teacher & Curriculum Developer, AICAPD (2024 - Present)

- Designed a **3-month STEM curriculum** in Math & Science for underprivileged students in grades 3–9, and **increased student engagement by 70%**. Pictures: (link)
- **Letter of Recommendation** by Sandeep Rajput, Director of AICAPD.

RESEARCH EXPERIENCE

Independent Policy Researcher, Journal of Student Research (2023)

- Published a policy paper titled **Landfill Management: Challenges and Opportunities.**

Published Researcher, International Journal of Agriculture & Environmental Science (2024)

- Published a research paper titled **Mitigation of Methane Emissions from Domestic Waste Through Overlaying Method: A Research Investigation**.
- Awarded the **CREST Gold** Award for contributions to STEM research & presented findings at the **Sigma Xi** Innosphere Conference 2025.

Public Policy Advocate, filed a Public Interest Litigation at Supreme Court of India (2025)

- Filed a **Public Interest Litigation (PIL)** at the SC of India to safeguard the rights of sanitary workers in landfills by referring **Article 21 (Right to Life),** after multiple **Right to Information (RTI)** applications to Delhi Municipal Council & New Delhi Municipal Corporation.

SUMMER PROGRAMS

Summer Scholar & AI Developer, Inspirit AI Scholars Program (Certificate) (2022)

- Learned core AI principles like **Supervised Learning**, **Chatbot Development**, and other applications like computer vision and predictive modeling to create & train an AI model for **Exoplanet Detection**.

Student Scholar, Oxford Scholastica Academy – Science & Technology Program (Certificate) (2024)

- Completed a 2-week course studying engineering, computing, and physics, along with **HTML, CSS & Excel modeling** to integrate **Python & Blender** to create animations. (Letter of Recommendation)

Young Technology Scholar Program, Plaksha University (Certificate) (2025)

- Completed a 2-week residential, scientific **summer program** studying a range of topics, from **cancer cell biology & dimensional analysis to marine robotics & computational modeling**.
- Led a capstone project, **"Poo Power"**, involving the cultivation of algae using TAP & mother culture for one week, followed by **extraction of biodiesel** and generated electricity using motors & LED.

PRE-PROFESSIONAL EXPERIENCE

Vecros Technologies Limited , Shark Tank Featured Company **(2025)**

- Using **sensor fusion** algorithms with Kalman filtering, I combined LiDAR & ultrasonic sensor to contribute to the ***Jasper*, an autonomous aerial system**, of Vecros, a shark tank featured company.
- Developed backend modules on **ROS (Robot Operating System) with Python**, deployed on an 8 GB Raspberry Pi for embedded system testing & assisted in drone calibration with 3D modeling efforts.

Robotics Wizard (Letter of Recommendation) **(2025)**

- Installed **3 Atal Tinkering Labs** & conducted **STEM workshops** on robotics, IoT in govt. schools in Charkha Dadri, Haryana.
- Coordinated **NITI Aayog officials, school administrators, and training staff**, while engaging with students and supporting resource allocation, training logistics, and curriculum delivery.

STUDENT ORGANIZATIONS/GOVERNMENT

Sports Vice Captain, Sanskriti School (2024 - 2025)

- Led **7 school teams** across various sports with **3 practices/week.**
- Organized **intra- and inter-school events, tournaments, and ceremonies** like Sports Days, Prize Distribution Ceremonies, Athletic and Aquatic Meets.

Head of IoT & Robotics Department, Project Beta Club of Sanskriti School (2024 - Present)

- Led a **30-member department** mentoring peers in robotics, IoT, and applied STEM.
- Organized **2 national events** with participation from **20+ schools**, and **7 intra-school** competitions.

Director of United Nations General Assembly, Sanskriti MUN (2024 - Present)

- Directed **UNGA committees** (SPECPOL, DISEC, ECOFIN) at **SMUN 2025 & SMUN 2024**.
- Experienced delegate with **10+ MUNs** with awards like **Best Delegate & Outstanding Delegate.**

COMPETITIONS

Shri Niamat Rai Rajpal Mathematics Contest (2024)

- Developed ***"Dot Dynamics"***, a dot city to model epidemic spread, in a 4-member team, and secured **2nd place** amongst leading Delhi schools. (Pictures)
- Designed the model based on **SIR, Reinforcement Learning,** and **K Mean Clustering algorithms**.
- Included data-driven **lockdown strategy simulations**, to balance economic and health parameters.

International Research Olympiad (Certificate, Honor Roll) (2025)

- Reached semifinal **round** with **rank 81** and achieved **Rank 2** in the MCQs of the Semifinals Exam.

SKILLS

- Proficient in Hindi, English, Spanish, Telugu, and Punjabi.
- Proficient in Python, Java, Canva, Blender, AV Editing.