

# YUVRAJ GARG

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## EDUCATION

### KJ Somaiya College of Engineering, Mumbai

B.Tech in Mechanical Engineering | Sophomore

### Jamnabai Narsee International School, Mumbai

Grade 11& 12; IB Diploma Programme | HL: Mathematics AA, Physics, Economics; SL: Hindi, Chemistry, English LL

### Arya Vidya Mandir, Bandra West, Mumbai

Grade 1-10; ICSE Board | 93.4%

## ENGINEERING PROJECTS AND RESEARCH

### CERN Beamline for Schools (BL4S) | Participant

Apr 2024

- Represented India in a particle physics experiment proposal; wrote a research paper comparing scintillator efficiency across particle energies for electrons and positrons.

### AI Exercise Analysis Website | Research Project

Nov 2023

- Built a website under the guidance of a Harvard professor using AI, computer vision, JavaScript, HTML and CSS to detect incorrect exercise movements in Parkinson's patients.
- Integrated posture corrections and weekly progress charts to track exercise accuracy and suggest improvements.

### All-Terrain Rover | Creator

May - Nov 2023

- Designed and built a rover to explore hazardous, inaccessible environments using CAD, 3D printing, CNC, electrical systems and coding; invested 100+ hours in development and testing.
- Presented the rover to Amit Agarwal, Head of Amazon India.

### SOLIDWORKS Associate (CSWA) Examination | Examinee

2021

- Created 3D models, assemblies and 2D drawings using dimensions, constraints, sketch entities and relations.

## STEM AWARDS AND ROBOTICS

- **Industrial Design Award**, FRC Turkey Regionals, Istanbul (2024): Team award sponsored by General Motors for robot design, creativity and innovation.
- **Engineering Inspiration Award**, FRC, Long Island (2022): Team recognition carrying \$5,000 in NASA sponsorship; contributed to a robot built for a ball-shooting challenge.
- **Chairman's Award**, FRC World Championships, Central Asia, Africa and Europe Region (2021): Contributed to game design, game elements and a showcase video; also received the Concept Award.
- **Innovation Challenge Award**, FRC, Central Asia, Africa and Europe Region (2021): Developed a Parkinson's exercise solution and implemented computer vision code.
- VEX IQ (2019): **Excellence Award** and **STEM Research Project Award**, Indian Nationals, Delhi; **Create Award**, World Championships, Kentucky.
- IIT STEM Fest Indian Nationals, IIT Chennai (2019): **Winner and Top Scorer awards**.

## COMMUNITY SERVICE AND EXTRACURRICULAR ACTIVITIES

### Akola Initiative | R Factor | Women in STEM Outreach

2018 - Present

- Taught robotics, coding, CAD, physics and mathematics to students at an underserved all-girls school through visits and online classes; helped establish an all-girls FLL team that placed first nationally.
- Supported technology access through a \$5,000 donation (through NASA), collection and distribution of 150+ laptops, Wi-Fi infrastructure and mobile phones; helped students pursue admissions in top universities along with scholarships.
- Encouraged students to compete in FRC in the United States, where their team received an award.

### Khel Katha | Community Event Volunteer and Guitarist, Mumbai

Feb 2024

- Performed an 11-song Hindi medley for approximately 800 underserved and special-needs children; volunteered at interactive activity stalls with fellow JNIS students.

### Squash | Willingdon Catholic Gymkhana, Mumbai

2020

- Placed second as the youngest award winner, advancing through 5+ rounds in a field of 50+ participants.

## SKILLS AND INTERESTS

Technical: Python, Java, HTML, CSS, JavaScript, C, C++; web development; SOLIDWORKS, Fusion 360; Blender; Filmora.

Professional: Leadership, teamwork, time management. Languages: English, Hindi, Spanish-II (single semester in freshman year).

Interests: Robotics, technology, mathematics, physics, computer science, graphic design, football, squash, golf, table tennis, guitar and fitness.