

SHISHIR SANTOSH SHIRAGAVECourse : **B.Tech**, Mechanical Engineering, 2027

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CGPA : 6.90

**ACADEMIC DETAILS**

| COURSE | INSTITUTE/COLLEGE | BOARD/UNIVERSITY | SCORE | YEAR |
|-----------|------------------------------------|-------------------------------------------------------------------------------|--------|------|
| CLASS XII | Dr. Shamrao Kalmadi Junior College | Maharashtra State Board of Secondary and Higher Secondary Education (MSBSHSE) | 68.5 % | 2023 |
| CLASS X | BVB's Paranjape Vidya Mandir | Maharashtra State Board of Secondary and Higher Secondary Education (MSBSHSE) | 85.2 % | 2021 |

PROJECTS

Convertible Quadruped-Biped Robot using Capstan-drive - Robotics and Automation **Jun 2025 - Present**

- This will be a convertible Robot which can be used as a Quadruped as well as a Biped depending on the need.
- We are using a new drive system which works on the Capstan Principle.
- The benefit of this drive is that it gives zero backlash error as it does not use traditional gear train drive system.

Currently it is in the prototyping stage and we are working on the prototyping of a single leg. Till now we have made 2 working prototypes, the 2nd one better and optimised than the 1st one.

POSITION OF RESPONSIBILITY

College Campus Ambassador - Forengers **Aug 2024 - Present**
I work as a College Ambassador for COEP at Forengers Foundation.

Mechanical Team Lead - Robot Study Circle, COEP **Sep 2023 - Present**
I am currently the Mechanical Team Lead of Robot Study Circle club and have been working in this club since the past 3 years. I have done various competitions and projects in the club so far as mentioned below.

EXTRA CURRICULAR ACTIVITIES

Canoeing
Practiced Canoeing at COEP Boat Club and performed at the 96th Regatta.

Kayaking
Practiced kayaking at the COEP Boat club and performed at the 97th Regatta.

COMPETITIONS

Mechanical Side Team Member **Jul, 2025**

- I worked on the Robot 1 which had the job to collect the ball and navigate till the centre line and pass the ball to Robot 2 which will further shoot and score.
- The theme was Basket ball playing robots.
- I worked on the Prototyping of the mechanisms of the robot as follows :
 - A 270° rotating simple ball gripper using a linear actuator converting it into the desired path of motion using linkages
 - A 2-Roller shooting mechanism which shoots the ball when fed into the mechanism.
 - An extension mechanism using Aluminium Extrusions and sliding nuts to extend to a specific desired height and dunk the ball into the basket.
 - A jumping mechanism using 3 - Pneumatic Pistons and compressed air used for the Robot to jump and score Dunk shot.
- I worked on designing the CAD of the whole Robot 1 using Solidworks.
- I ran few simulations on Solidworks as well as Matlab-Simulink.
- Procured all the components and did the Manufacturing of the whole Robot with the available tools in the lab.

- We scored 96/100 points in the stage 1 in which we have to submit the CAD and Mechanism Calculations with proper documentation.
- We scored 100/100 points in the stage 2 where we have to submit the video proof of Concept.
- In the Stage 3, where actual matches were held against teams from all over India, we acquired the 5th position out of 32 Teams from all over India.

VOLUNTEER EXPERIENCE

The Robotics Society of India - Role: Volunteer | Cause: Science and Technology **Dec 2025 - Dec 2025**
I worked as a Volunteer for the workshop held by The Robotics Society (TRS) of India and conducted by the Cyborg Robotics academy on basics of Drone - architecture, control and flying.
I was assigned to help the groups with any Technical assistance they need to build the drone.

ROSCon India - Role: Volunteer | Cause: Science and Technology **Dec 2025 - Dec 2025**
I worked as a Volunteer at the National Conference on Robot Operating System organised by ROSCon at the COEP Campus.

Robotex - Role: Technical Referee | Cause: Science and Technology **Aug 2024 - Aug 2024**

Deepstambh Organization - Role: Volunteer | Cause: Environment **May 2024 - Jul 2024**

LANGUAGES KNOWN

