# Srijal Poojari

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## EDUCATION

### SARDAR PATEL INSTITUTE OF TECHNOLOGY
BE in Electronics
University of Mumbai
May 2019 | Mumbai, India
CGPA: 8.49 / 10

### MVM JUNIOR COLLEGE
Higher Secondary Certificate
Maharashtra State Board
Feb 2015 | Mumbai, India
540/650 (83.08%)

### ST. XAVIER'S HIGH SCHOOL
Secondary School Certificate
Maharashtra State Board
Mar 2013 | Mumbai, India
501/550 (91.09%)

## SKILLS

### PROGRAMMING
Proficient:
Python • C • C++
Intermediate:
MATLAB • LaTeX
Familiar:
C# • Lua • JavaScript

### HARDWARE
Development Boards and SoCs:
Arduino AVR, ARM • ATmega
ESP32 • ESP8266 • Microchip dsPIC
C2000 DSP • Raspberry Pi • MSP430
Nvidia Jetson TX2, Nano
Particle Photon • Spartan V FPGA
Design and Development:
PCB Design • Power PCB Layouts
SMD Soldering (QFP, QFN) • 3D Printing

### SOFTWARE
OpenCV • ROS • VRep
EAGLE • Fusion 360 • Unity

## OTHER INTERESTS

RC Planes • Aviation • Electronics Salvage
Swimming • Reading • Video Games

## ACHIEVEMENTS

- **2nd Prize in Technical Paper Competition** at SPIT, Mumbai (2019)
- **3rd Prize in Innovatron'18**, an inter-college project competition held at SPIT, Mumbai, for the project "Room Occupancy Indicating System" (2018)
- **1st out of 162 teams nationwide** in e-Yantra Robotics Competiton. (2016-17)
- **1st Prize in InterThrone 2017** an IoT focused contest. Award of INR 300,000 given for the automated cycle locking prototypes developed for CYKLO (2017)
- **1st Prize in Circuit Troubleshooting Competition** at SPIT, Mumbai (2016)
- **2nd out of 459 entries worldwide** in the Arduino All-The-Things Contest on Instructables, for the project of "The Companion IC" (2016)
- **1st Prize in CodeChamps**, a programming competition across all departments of SPIT, Mumbai. Language of choice used was C++ (2015)

## TEACHING

| | | |
|---|---|---|
| 2019 | Teaching Assistantship: Digital Circuits | SPIT, Mumbai |
| 2019 | Teaching Assistantship: Product Design | SPIT, Mumbai |
| 2019 | IEEE Workshop on adding WiFi to your projects using ESP8266 and MQTT | SPIT, Mumbai |
| 2019 | Teaching Assistantship: Robotic Vision | SPIT, Mumbai |
| 2018 | IEEE Workshop on Introduction to Microcontrollers, Sensors and Arduino | SPIT, Mumbai |
| 2018 | Workshop on Introduction to Embedded Systems Design | SPIT, Mumbai |
| 2016 | Robocon Workshop on PCB making and basics of a robotic system | SPIT, Mumbai |

## WORK EXPERIENCE

### SP PRODUCT DEVELOPMENT CELL | Research Associate
July '19 onwards | SPIT, Mumbai
Work on industry consultancy projects under Dr. R. R. Sawant and Dr. Y. S. Rao. Involves development of embedded systems of different microcontroller families like dsPIC, C2000 and ATmega that usually deal with high power electronics.

### DRISHTI WORKS | Intern - Robotics Engineer
4 Jun – 15 Jul '18 | Mumbai
Developed the sensing, power distribution and IMU system for AURUS, a beach cleaning robot. Vastly improved system reliability by creating a custom ROS nodes communication between the station (desktop) and the robot (Nvidia Jetson).

### FRACTAL ANALYTICS | Project Intern
27 Nov - 26 Dec '17 | Mumbai
Developed applications using Unity (C#) on the Microsoft HoloLens Mixed Reality(MR) headsets for displaying conventional statistical results in the form of holograms.

### IIT BOMBAY | Summer Intern - Modular Robots
27 Nov - 26 Dec '17 | Mumbai
Created self-reconfigurable robot modules inspired by the Dtto Robot. Developed virtual simulations of the same modules on VRep with bluetooth control.

# RELEVANT PROJECTS

### PROJECT ATLAS | BE final year project
Jul '18 - Apr '19 | Drishti Works, Mumbai

- Build of a tethered multirotor with an AUW of 10Kgs.
- Designed 140V to 32V@20A step-down converters in a small form-factor for increasing the altitude capabilities of the system. [Final Report]

### TINYBOT | Personal Project
Mar - Nov '19

- Created a very small wireless remote-controlled car of the order of 10*10*10mm as a challenge to a reddit post.
- Custom designed a PCB for the power regulators and motor drivers, to be used along with the ESP8285. I believe it to be the smallest hobby-level RC car.

### ROOM OCCUPANCY INDICATING SYSTEM | BE Sem VI project
Feb - Apr '18 | SPIT, Mumbai

- A network of small wireless sensors to detect human presence in a room, across multiple such rooms.
- Involved a strong focus on wireless networking, low power design, PCB design, 3D modelling and printing.

### 3D INDOOR MAPPING | BE Sem V project
Aug - Oct '17 | SPIT, Mumbai

- Used the Microsoft Kinect depth sensor and a Raspberry Pi running the Robot Operating System (ROS) to create a wireless 3D mapping setup.

### EYANTRA ROBOTICS COMPETITON
Nov '16 - Apr '17 | IIT Bombay

- Planned and implemented the algorithms for motion planning and used OpenCV with Python for Image Processing.
- Played the role of team leader in a team of 4. [Demo Video]

### CYKLO | Startup
Nov '15 - May '17 | SPIT, Mumbai

- CYKLO is a point-to-point, peer-to-peer cycle sharing service, started in 2015 at Sardar Patel Institute of Technology(SPIT), Mumbai, with me as a core part of the team.
- Designed, built and programmed several hardware prototypes for the automated cycle locking system, including the locking mechanism, electronic controller and network interface.

# TRAINING

### ROBOTICS: FUNDAMENTALS | UPennX, edX - Certificate
Oct 2018

Kinematics and Mathematical Foundations for describing robotic arms and mobile robots using MATLAB.

### COMPUTATION STRUCTURES | MITx, edX - Uncertified
Sep '16 - May '17

Designed a 32-bit 'Beta' processor, ground up, from basic logic gates on the Jade simulator.

### MSP-FPGA HARDWARE AND SOFTWARE CO-DESIGN | SPIT, Mumbai
Sep 2016

Workshop on interfacing of MSP430 with an FPGA to enable parallel processing of general purpose calculations on MSP and hardware optimized tasks on FPGA for faster throughput.

### EMBEDDED SYSTEMS DESIGN | SPIT, Mumbai
Jun 2016

Workshop on introduction to various technologies in Embedded Systems with hands-on practice on development boards including Atmel AVR, ARM, Texas Instruments MSP and DSP.

### ROBOCAMP(SR.) BY THINKLABS | IIT Bombay
Dec 2010

Basic STEM learning for school kids for an early start on autonomous robots and their control using graphical block-programming. Interfaced sensors like touch, IR and control of DC motor for robot actuation was learnt on the iPitara Robot by ThinkLABS. Participated in TRICKS 2010, IIT Bombay.