

## Summary

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Space and Astronautical Engineer with a strong background in design, mathematical modeling, simulation, and control of Space and Ground Robotic system. Expertise development of cross platform 3D simulation, visualization and GUI tools. Hands-on experience with embedded systems and firmware development.

## Work History

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### Engineer, Robot Teleoperation

Jul 2021 - Current

*Istituto Italiano di Tecnologia Genova, Italy*

Development of architectures and modules for the integration of the devices developed in the main teleoperation system. Integration of suitable control algorithms and intelligent operating modes in wearable robots, force feedback devices and sensor systems; Low and high level software development for various devices and systems related to wearable robots, force feedback devices and sensors. Development of appropriate drivers to interface teleoperation devices to host systems; Implementation of existing firmware and development of new functions in existing and new embedded systems.

### Firmware Engineer

Mar 2020 - Jun 2020

*SED Soluzioni per l'Energia e Diagnostica Srl Rome, Italy*

Microcontroller developer for IIoT Abacus platform project Artes 4.0, Development of library, test tools for RS485 ModBus Based IMU Network.

### Design and Integration Engineer

Jul 2016 - Apr 2017

*Aman Aviaion and Aerospace Pvt. Ltd. Mumbai, Maharashtra*

Design development of 100kg class UAV for military applications

## Education

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### Master of Science in Space And Astronautical Engineering

2021

*Sapienza University of Rome, Italy Rome*

Thesis: Neural Network based Steering and Hardware in Loop Simulation of Variable Speed Control Moment Gyroscope.  
Graduated with 104/110

### Bachelor of Technology in Aerospace Engineering

2016

*SRM University, Chennai Chennai, India*

Thesis: Design, Fabrication and study of the Single Rotor Spherical VTOL UAV.  
Graduated with 7.42/10

### Diploma in Computer Science

2011

*Institution of Electronics and Telecommunication, New Delhi*

Thesis: Design and development of Antivirus software  
Graduated with 6.45/10

## Technical Skills

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Programing	C/C++, MATLAB, JavasRipt, Python, C#, Java, MySQL
Tools and Frameworks	CMake, Git, Microsoft Visual Basic 6.0, PyQt GUI, OpenGL and Boost C++, Tensorflow, Keras. Knowledge of digital signal processing, Software Defined Radio, GNU Radio.
Document Processing	Microsoft Office, Open Office, LaTeX.
Drafting and Modeling	Expertise in AutoCAD, CATIA V5 and Solidworks.
Simulation	Simulink, Multibody Dynamics with MSC Adams, FreeDyn, Bullet Physics, CFD and post processing using ANSYS Fluent.
Embedded Systems	Hands on experience on AVR, ARM Microcontrollers. Proficient in robotics and automation using open source development frameworks, STM32 IDE, Arduino IDE, and single board computers such as Raspberry Pi, Nvidia Jetson TK1.

## Publications

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S. N. Deore, F. Santoni, F. Piergentili, and P. Marzioli. "Attitude control of a fast retargeting agile nanosatellite using Neural Network based steering for Variable Speed Control Moment Gyroscopes", St. Petersburg, Russia, 2021, International Astronautical Federation (IAF)

S. N. Deore, F. Santoni, F. Piergentili, and P. Marzioli. "Design and Manufacturing of Hardware in Loop simulation testbed equipped with Variable Speed Control Moment Gyroscopes", St. Petersburg, Russia, 2021, International Astronautical Federation (IAF)

## Projects

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**ABU Robocon** 2012 - 2016  
International Robotics competition conducted by Asia Pacific broadcasting Union Developed and tested algorithms to map the arena and autonomous and manual locomotion of various drive platforms such as Omni directional drive / Differential drive. Control of actuators and end effectors that are used to perform desired task autonomously

**AIAA CANSAT, Texas, US** 2013  
Developed Ground Station, Responsible for design, development and test of Science Payload and Container, Perform ground and flight-testing procedures on prototypes.

**University Rover Challenge, Conducted by Mars Society, at MDRS, Utah USA.** 2012 - 2016  
Design, development, and testing of UGV Rover and its Arm. Development of Ground station for teleoperation.

## Achievements

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Gallactic Prize, Second Rank in Space App Challenge, Rome 2019  
First in ASIA, University Rover Challenge, Mars Society, MDRS Utah, USA 2016  
Best Academic Project awarded by Aman Aviation and Aerospace Pvt. Ltd. 2016  
Second Rank in Worldwide , AIAA Cansat, Texas, USA 2014  
Best Economical Robot Award, ABU ROBOCON, India 2014

## Hobbies

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Trekking, Swimming, Horse Riding.

## Personal Details

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Languages English (Advanced), Italian (Basic), Marathi (Native), Hindi (Native)  
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GitHub [www.github.com/siddharthdeore](http://www.github.com/siddharthdeore)