

# Siddhant Sharma

+91-7990975969 | [siddhant.masters@gmail.com](mailto:siddhant.masters@gmail.com) | LinkedIn : <https://www.linkedin.com/in/code-barrage/>

“Curiosity is the very basis of education and if you tell me that curiosity killed the cat,  
I say only the cat died nobly.”

## EDUCATION

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**Bachelor of Engineering in Electronics and Telecommunications**

**Aug 2018 – June 2022**

Shah and Anchor Kutchhi Engineering College – University of Mumbai

**CGPA: 8.68**

## RESEARCH INTERESTS

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- Learning Based Control in Robots
  - Control of Multi-Robot System
  - Safety in Autonomous Systems
  - Perception based robotics and intelligence

## RESEARCH EXPERIENCE

### Intern

**Tata Institute of Fundamental Research, Mumbai**

**April 2021 - July 2022**

- Developed Python and R-based pipelines for processing and analysing single-cell, spatial transcriptomics data.
- Implemented pre-processing and normalization algorithms such as GRSN, Xcorr, LVSmiR, SVR to improve data quality and accuracy. Also used CrossNorm and ICN to remove irrelevant transcripts, false positives.
- Collaborated with researchers to tailor hippocampal gene expression analysis using Seurat, ggplot2, SingleR, dplyr, tidyverse, cellDex, RColorBrewer, SingleCellExperiment
- Implemented a local lab server network for easy, remote access to Jupyter projects and collaboration within lab.

### Autonomous Research Drone

**April 2021 - March 2022**

- Designed and built an open-sourced autonomous drone from readily available open-sourced components.
- Utilized **ROS** and **Gazebo** to simulate environments to test Python scripts and drone design.
- Enabled onboard **computer vision** capacity for object detection and tracking using **ArUco (Fiducial)** markers with a companion computer and **STM32 Microcontroller** as flight controller.
- Ensured safe operation with radio failsafe for BVLOS flights, and other measures such as **geofencing**, integrated low-cost telemetry modules for ground station data reception and tracking.
- Implemented **Pure Pursuit Algorithm** for improving precision in landing to 2 inches.
- Integrated whole system for a precision autonomous delivery system with an estimated range of 4-5 km.
- Incorporated low-cost **2D LiDAR** for **Pose Graph Optimization**, and generated **Binary Occupancy Grids** for indoor environments for autonomous navigation indoors.

### Intern for "Digital Virtual Shooting Gun"

**Research Cell, Shah and Anchor Kutchhi Engineering College**

**Aug 2020 - Feb 2021**

- Developed a virtual gun simulator and electronic memetic gun as a part of initiative to democratize professional rifle shooting in schools and create a low-cost system with high accuracy.

- Integrated gyroscope, accelerometer to track user motion pre-during-post shooting, providing real-time feedback on breathing patterns, motion for an immersive shooting experience.
- Successfully programmed the microcontroller in C++ and interface with a computer program for graphical representation on a target board.

### **Line Follower Bot**

- Designed & fabricated a robot (team of 3) within 3 days from scratch with self-manufactured infrared sensors assembly for a Line Follower. Tuned PID controller to minimize deviation from ref.line by using the feedback from infrared sensors.

## **TECHNICAL SKILLS**

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- Unix, Gazebo, ROS, webots, OpenCV, Machine learning, jQuery
- Human-Machine Interface (HMI) FX5U, STM, ESP32, UART, I2C, SPI, HAL basic
- Bare Metal Programming, Keil, Simulink, Altium, Inventor, SolidWorks
- Oracle Apps, SAP ATTP, SAP Basis
- Python, SQL, MATLAB, C/C++, JavaScript, PL/SQL, Jenkins (CI/CD)
- Google Cloud Digital Leader Certified.
- Oracle Cloud Infrastructure Certified - AI Foundations Associate
- Accenture Tech Leap – Machine Learning school, Modern Data Engineering School

## **TEACHING AND MENTORING EXPERIENCE**

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### **Quant Tutor**

**Kanan International, Surat**

**July 2022- Sept 2022**

- Developed and delivered engaging GRE quant lessons for individual students and group classes, catering to diverse learning styles.
- Utilized effective teaching methods to improve students' understanding of core quantitative reasoning concepts, including data analysis, algebra, and geometry.

## **PROFESSIONAL EXPERIENCE**

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### **Associate Software Engineer**

**Accenture Solutions Private Limited, Mumbai**

**Sept 2022 - Present**

- SAP ATTP expert skilled in the configuration of Serialization systems, CMO onboarding and post-production support. working on various global Serialization mandates, proficient in GS1 standards and global track and trace regulations.
- SAP ATTP Greenfield Implementation: Design, Configure/Build, Authoring of Test Cases and Scenarios, Unit Testing, System Integration Testing, UAT support, Cut-over preparation, Go-live
- Change Management: Implemented changes in the production system adhering to GMP Compliance change control policies.
- Resolved critical production issues: Collaborated with vendors to fix problems across globally dispersed applications, identifying root causes and implementing permanent solutions.
- Automated manual tasks and improved monitoring: Leveraged expertise in Track and Trace applications to automate manual tasks and enhance monitoring through tools like Tableau, Splunk, and email alerts.

## LEARDERHSIP

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### **Entrepreneurship - Cell, Shah and Anchor Kutchhi Engineering College**

**2018 - 2022**

- Organized and spearheaded various events under E-cell SAKEC as the graphics team head for events such as Project Pillar, Food Fiesta, Etc., leading a team of 50 students.
- Designed and created various posters, banners, videos, and presentations using tools like Adobe Photoshop, Illustrator, Filmora, Canva, Etc.

### **Research Cell, Shah and Anchor Kutchhi Engineering College**

**2021 - 2022**

- As the part of the student council helped organise and conduct various events and workshops.
- Designed and created various posters, banners, videos, and presentations using tools like Photoshop, Illustrator, Filmora, Canva, Etc.
- Led a GIMP workshop for 200+ participants, effectively communicating design principles and software functionalities, as the Co-head of the Graphics Team.

### **IEEE Bombay Section**

**2020 - 2022**

- As a Student volunteer conducted various events under IEEE Bombay Section such as SMELT, Student Congress, etc.
- As a part of the content and graphics team designed various posters, banners, videos, and presentations using tools like Adobe Photoshop, Illustrator, Filmora, Canva, Etc.

### **Student Council, Shah and Anchor Kutchhi Engineering college**

**2020-2022**

- Organized and managed large-scale annual events, including cultural, technical, and sports symposiums, for over 3,000 participants.
- Effectively coordinated event logistics, ensuring smooth execution and contributing to the college's successful NAAC accreditation.

## AWARDS

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- Pinnacle Award October 2023 – Accenture Pvt. Ltd.
- Second Prize in Online Technical poster presentation completion conducted by the Electronics and telecommunication department with IETE at Shah & Anchor Kutchhi Engineering College in 2022.
- Ministry of Human Resource Development Nation Innovations Contest – Finalists in the innovations.
- Smart India Hackathon Internal Round at Shah & Anchor Kutchhi Engineering College in 2020 - Participated in SIH in the internal round and was a runner-up.

## REFERENCES

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### **Rohan Borgalli**

Assistant professor,SAKEC

[rohan.borgalli@sakec.ac.in](mailto:rohan.borgalli@sakec.ac.in)

Shah and Anchor Kutchhi Engineering College,  
Mumbai, Chembur - 400088

**Varun Suresh**

Postdoctoral Scholar, UCSF

[varun.suresh@ucsf.edu](mailto:varun.suresh@ucsf.edu)

University of California San Francisco

**Mahima Bose**

Research Associate, TIFR

[mahima.bose@tifr.res.in](mailto:mahima.bose@tifr.res.in)

Tata Institute of Fundamental Research