

# SIDDHARTH JAIN

+1 (623) 326-7382   [sjain238@asu.edu](mailto:sjain238@asu.edu)   [linkedin.com/in/tellsiddh/](https://www.linkedin.com/in/tellsiddh/)   [github.com/Siddharth-jain99](https://github.com/Siddharth-jain99)   [siddharth-jain99.github.io](https://siddharth-jain99.github.io)

## Education

### Master of Science, Robotics and Autonomous Systems

Expected May 2024

Arizona State University, Tempe, AZ

**Relevant Coursework:** Reinforcement Learning, Deep Learning, Embedded Machine Learning, Optimal Control, Modelling and Control of Robots

### Bachelor of Engineering, Mechanical

May 2022

D. J. Sanghvi College of Engineering, Mumbai, India

GPA: 8.74/10

**Relevant Coursework:** Structured Programming Approach, Industrial Electronics, Robotics, Machine Design

## Technical Skills

<b>Languages:</b>	Python, C++, MATLAB & Simulink, Embedded C, SQL, PowerShell
<b>Software:</b>	Docker, ROS2, Solidworks, Autodesk Fusion 360, Arduino IDE, Altium, Microsoft Office
<b>Hardware:</b>	Semtech SX12xx, NRF BLE, ESP32, SAMD21, Arm Cortex-M microcontrollers, ATmega, Raspberry Pi
<b>Technologies:</b>	FreeRTOS, Gazebo, React Native, MQTT, Ubuntu, Tensorflow, Scikit-Learn, PyTorch
<b>Protocols:</b>	SPI, I2C, CAN Bus, UART, RF integration (ZigBee, LoRa, Wi-Fi, BLE)
<b>AWS:</b>	IoT Core, Lambda, Timestream, DynamoDB, S3 Buckets

## Professional Experience

### Embedded Systems Engineer

Oct 2022 – Current

#### Mobile Systems Engineering and IoT

Tempe, Arizona

- Engineered a self-sustained proprietary UHF off-grid full mesh protocol for ASU cart tracking and smart campus IoT initiative.
- Developed a Bluetooth Low Energy mesh network using ESP32s for SOS signals via a self-developed React-Native application.
- Wrote Lambda Functions with API Gateways and Timestream to obtain real-time location data as well as information about active nodes around campus.
- Programmed mpu9250 for deep sleep acceleration-based interrupt and achieved 3 years of battery life for the cart tracker.

### Graduate Student Researcher

Dec 2022 – Current

#### Bio-Inspired Robotics, Technology and Healthcare Lab

Tempe, Arizona

- Designed an articulated 3-axis linear cartesian robot attached to a 6-axis load cell with a closed-loop controller to perform tests that were used to determine the frictional characteristics of the gripper pads fabricated for the Lizard Inspired Tube Inspection (LTI) robot.
- Designed and fabricated gripper pads with curved textured surfaces using a Polydimethylsiloxane (PDMS) polymer to enable the LTI robot to perform friction-based mobility on curved surfaces irrespective of the material and surface texture.

### Vice Captain

Mar 2019 – May 2021

#### DJS Kronos India

Mumbai, India

- Headed and Co-founded the electric ATV team powered by a 8kWh BLDC Motor and a custom 48V Li-ion Battery pack.
- Incorporated 15+ sensors based on I2C and SPI communication protocol to collect data in real time.
- Simulated the vehicle's performance on MATLAB and Simulink resulting in a 17% more efficient design.

## Academic Projects

### Dexterous Manipulation with a Robotic Hand | *Reinforcement Learning, Actor Critic* Aug 2022 – Oct 2022

- Compared various on-policy methods like DAPG, Monte-Carlo return methods like AWR to Advantage Weighted Actor Critic giving 20% higher success rate.
- Reduced the time required to learn a range of robotic skills to practical time-scales by incorporating prior offline data along with online tuning.

### Self Balancing Platform | *MATLAB & Simulink*

Sep 2022 – Dec 2022

- Designed a closed-loop PID controller for linear actuators that controlled the position of every individual linkage of a Stewart platform to balance the motion of the ball placed on the platform. Reduced Steady State Error by changing the integral value.

### Data Acquisition System | *Raspberry Pi, ThingSpeak, Arduino*

Jun 2019 – Dec 2019

- Developed a DAQ System to collect data from 12 sensors for data telemetry in real time using Arduino microcontroller.
- Integrated a GSM SIM 900 Module to Raspberry Pi Zero and transmitted sensor data using ThingSpeak Communication Library.

## Extracurricular

### Robotics and Autonomous Society

Jan 2020 – Dec 2020

Co-Committee

Dwarkadas J. Sanghvi College of Engineering

- Managed a 3D Printing, PLC Automation Seminar and invited guests speakers from industry.