

Yash Sanghvi

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Education



B.Tech + M.Tech, Mechanical Engineering,

Indian Institute of Technology Bombay (IITB), 2013-2018

- GPA: 9.39/10
- Ranked 2nd in the Dual Degree Batch out of 48 students

Awards



- **Gold Medal** by PM Narendra Modi, Chief Guest at the 56th Convocation of IITB, for being the most outstanding student considering academics + extracurriculars
- **Institute Organizational Roll of Honor**, for the digital and technological transformation of NSS, changing the archaic image of social service to one more relatable by millennial IITians
- **Institute Technical Citation**, for taking IITB to the space age through the launch of Pratham satellite in 2016

Skills



Professional Experience



Mar, 2020 - Present

Lead, Data Science, [Carnot Technologies Pvt. Ltd.](#)

Carnot is an agri-IoT startup with 8000+ telematics devices installed on tractors across India, generating > 10 GB data per day

- Developed geo-data and usage-data based algorithms to determine tractor buying tendency of farmers
- Engineered Carnot's data lake, perhaps the largest private collection of farmers' data (more than a million farmers)
- Identified the right spots for OEMs for performing marketing and sales activities based on the location intelligence performed on the telematics data received from our IoT devices
- Cofounded and maintained the [Data Kisaan](#) publication for sharing our data insights with the outside world, appreciated by Dr. Rajesh Jejurikar, Executive Director, Auto and Farm Sectors, Mahindra Group

May, 2019 – Feb, 2020

Senior Firmware Developer, [Carnot Technologies Pvt. Ltd.](#)

- Reduced device cost by > 10% by implementing a custom bootloader to perform self-OTA (Over-The-Air) update of the microcontroller
- Adapted the ARM cortex M3 code to M0, enabling the use of a cheaper microcontroller, further reducing cost by 10%
- Created SMS-based diagnosis and troubleshooting mechanism to debug devices remotely, saving >33% recalls

Sep, 2018 – Apr, 2019

Research Associate, [NCAIR](#)

NCAIR is an industry-academia consortium founded at IITB to improve the manufacturing ecosystem in India; partners include Boeing and DMG-Mori

- Determined the state of the shop floor machines (ON/ OFF/ Cutting) using current and vibration sensors
- Developed the server side scripts for data collection and processing

Data	Analytics and ML	Numpy, Pandas, Dask, Shapely, Scikit Learn
	Data Visualization	Plotly, Seaborn, Dash, Streamlit, Matplotlib
	Data Storage	PostgreSQL (with PostGIS extension), MySQL, Redis
Cloud	AWS	Compute: Lambda, EC2, EBS, Storage: S3, S3 Glacier, RDS, Hosting: Amplify, Networking: API Gateway, Route53
	Azure	Compute: Function App, App Service, Storage: Storage Account, SQL Database, Networking: API Management
	Heroku	Heroku Postgres, Redis, Scheduler
IoT	Communication	WiFi, HTTP, HTTPS, TCP, UDP, BLE, LoRa, Zigbee
	Onboard Communication	SPI, I2C, UART, CAN
	Microcontrollers	ESP32, 8266, STM32F0, F1, ATmega 8, 16, 32, nRF51xxx, Arduino
Android	Programming Language and IDE	Java (Android Studio). Link to my first Android App: DIEM - Daily Income and Expense Manager

Publications



- Sanghvi Y., Sikka A., Ranade A.R. (2020) **Quality Assurance Practices for Student Satellite Teams**. In: Sastry P., CV J., Raghavamurthy D., Rao S. (eds) *Advances in Small Satellite Technologies. Lecture Notes in Mechanical Engineering*. Springer, Singapore.
https://doi.org/10.1007/978-981-15-1724-2_42
- Sanghvi Y., Tewari A. et al., **Manufacturing Analytics: IoT based Overall Equipment Effectiveness (OEE) Measurement and Improvement** poster presentation at Applied Materials India Engineering and Technology Conference (IIT Bombay, India), September 27, 2018

Human Languages



- English
- Hindi
- Gujarati (Mother Tongue)
- Marathi

Public Speaking



- Delivered a [speech](#) representing the U.G. batch at the Institute Valedictory Function, 2018
- Delivered an [Institute Lecture](#) on Pratham, the first satellite of IIT Bombay, for the esteemed alumni of the institute

Consultation Roles



Oct, 2019 - Present

IoT Consultant, [Machine Intelligence Program, IIT Bombay](#).

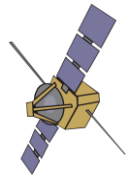
- Advising a team of 10 firmware and software engineers in Prof. Asim Tewari's group in various projects under the ambit of MIP:
 - Smart Energy Meter
 - Structural Health Monitoring using IoT
 - Site Survey Kit

May, 2019 – Feb, 2020

Firmware Consultant, [Zargun Electronics and Science](#).

- Advised a team of 3 engineers developing the firmware of the Smart Waste Module of Zargun ES, with special focus on:
 - Over-The-Air (OTA) update
 - Captive Portal
 - Time sync with NTP

Projects and Internships



May, 2016 – Jul, 2016

Pratham, [1st Student Satellite, IIT Bombay](#)

- Led the Electrical Subsystem, consisting of Power and Onboard Computer segments
- Developed the flight-firmware (embedded C) in a team of two
- Presented before the ISRO Scientists in the Critical Design Review (CDR) and Pre-Shipment Review (PSR) to secure a launch slot
- Satellite **launched** on 26th September 2016, onboard PSLV-C35

May, 2016 – Jul, 2016

Mechanical R&D Intern, [Hindustan Unilever Limited](#)

- Developed an eco-friendly refrigeration system for Pureit Floor Standing RO water purifier
- Reduced carbon footprint by >40 kg CO₂ e/unit by modifying the system to work with the eco-friendly HC R-600a refrigerant
- Awarded Pre-Placement Interview based on output and leadership skills displayed during the internship

Miscellaneous Highlight

May, 2015

Founder, [OLI – NSS, IITB](#)

- Ideated and created this YouTube channel under NSS, to fill the gap in educational content in regional languages on the internet
- Amassed over 100,000 subscriber and 1,00,00,000 views
- Invited by the Ministry of Human Resources and Development (MHRD) to partner with them on their platform [DIKSHA](#)
- Used by the schools of Giridih, an insurgency-affected district in Jharkhand, to educate students in absence of permanent teachers
- Lectures broadcasted on Bihar Doordarshan TV channel, to educate students at home during the lockdown

