# SAGAR KRISHNA

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## EDUCATION

**MSc Computer Control and Automation, Nanyang Technological University (NTU), Singapore** **Aug 2018 – Jun 2019**

- School of Electrical and Electronic Engineering (EEE).

**Bachelor of Technology** (**B.Tech.**), **College of Engineering Trivandrum, Kerala, India** **Jul 2013 – May 2017**

- Applied Electronics and Instrumentation Engineering(AE&I).

## WORK EXPERIENCE AND INTERNSHIP:

**Research Engineer at DELTAxNTU Corporate Lab (under Assoc Prof Su Rong)**

**Jul 2020 - Current**

- Developed interface algorithm, in NodeRed, for Hardware in the loop test-bed to interface a Discrete Event System Step Controller , Visual Simulation, and Production-Linen to the Delta Cloud Platform (DIALink) .
- Developed a collective algorithm to relay the tags of all instruments in the production line from the cloud to the controller and visual simulation.
- Developed and packaged a constrain-based simulation, in python, to optimise Automated Guided Vehicle(AGV) Fleet management for DELTA factory base automation.
- Generate performance analytics data and way point data for production lines and AGVs respectively and relay them to the front end.

**Research Engineer at INFINITUS Lab in the project Automated Charging for Kerbside Parking to Reduce Active Enforcement (under Assoc Prof Lee Yee Hui)(Project funder by Urban Redevelopment Authority, Singapore).**

**Dec 2019 - Jun 2020**

- Implemented a C++ code to be configured into the Road Side Unit(RSU) which can read and store the configuration files of different parking lots, thus deriving the respective location parameters for the same.
- Evaluated and prototyped a web application to give a real-time view of the parking lot status on the map using NodeJs.
- Collected data for positioning engine which helps in locating the position of the parking vehicle.
- Sourced the components and implemented the system staging and mesh network for the demo to be displayed to the contract company.

**Interned at Bharat Petroleum Corporate Limited, Kochi Refinery.** **May 2016 – June 2016**

- Underwent in-plant training at the Distillation Chamber wing of the refinery. Was introduced to distributed control system and the valves and equipment used in the petrochemical extraction process.
- Got introduced to the Honeywell's distributed control boards, operating systems and PLC ladder circuits.

## ACADEMIC PROJECTS

**School of Electrical and Electronics Engineering (EEE), NTU Singapore and Energy and Research Institute at NTU(ERI@N).** **Sep 2018 – May 2019**

**Title: Data Driven Extraction of Challenging Situations for Autonomous Vehicles**

- Proposed a method to detect lane change and speed breakers based on CANBus(Controller Area Network) data using different machine learning algorithms which would increase the efficiency of the existing system to around 95 percentage .
- Performed data preprocessing, feature engineering and data analysis on manually annotated data
- Implemented the above using machine learning algorithms with help of libraries like Scikit learn, NumPy, etc.
- Improved the decision making of the system with the help of WEKA to increase productivity.

**Department of ECE, College of Engineering Trivandrum, Kerala, India.**

**Sep 2016 – Mar 2017**

**Title: Density Based Traffic Control System**

- Proposed and Designed a traffic signal timer control wherein, a junction is monitored using a camera or multiple cameras. After every cycle, of traffic, images of roads are taken and using image processing tools in MATLAB, the number of vehicles in each road is estimated.
- Presented report in college technology seminar.

**Department of ECE, College of Engineering Trivandrum, Kerala, India.** **May 2016**

**Title: Smart 101**

- Developed a GSM based Fire Alarm with Atmega-328p that alerts the owner of a property in case of fire breaking out and also instantly triggers the water sprinkler and circuit breakers.
- Demonstrated understanding of PCB fabrication skills, as we designed the PCB board in EAGLE software.

## SKILLS

- Skills: Data Analysis, Machine Learning, Signal Processing, Software Packaging, Bash Scripting, Back-End Interfacing, Simulation Building, Node-Red interfacing.
- Programming Skills: Python, Javascript, Simulink, C++, MATLAB.
- Familiar Software and Tools: PyCharm, Anaconda, NodeJs, NodeRed, Flask, Google Colab, Jupyter, WEKA, LINUX, Visual Studio Code, GitHub, Moba-Xterm, MS Office, Latex, Arduino IDE.
- **Language skills:** English, Hindi, Tamil and Malayalam.

## AWARDS AND ACHIEVEMENTS

- Build a tool to improve vocabulary through iPhone notifications when screen is unlocked. **Aug 2020**
- Secured a grant of 30000 INR for actively pursuing the project DENSITY BASED TRAFFIC CONTROL SYSTEM under the Centre for Engineering Research and Development (CERD). **Aug 2016 – Mar 2017**
- presented a Seminar on Computational Photography as part of coursework and received the title of the best seminar in the department. **Jan 2017**
- Delineated and executed circuit and setup for Real-Time PACMAN game held as a part of college technical fest. Our team was awarded highest grossing booth of the event. **Jan 2017**

## LEADERSHIP AND CO-CURRICULAR ACTIVITIES

- Started an in-house electrical component store called Go-Geek with peers to deliver components to students for their project work. **May 2016 – May 2017**
- Won several prizes as lead singer of college band(ADWAITHAM) in various cultural fests. **Aug 2015 – Feb 2018**
- Won several awards for debate, JAM and music for intra college competitions that helped the EEE department achieve the best overall department. **Jan 2014**
- Won prizes for Ghazal and Hindustani Classical music in Kerala State University Youth Festival. **Mar 2014 – Mar 2017**
- Founded and lead the college band “ADWAITHAM” and NTU Graduate Students Band “The Fouriers”. Founding Member of college Debate Club, Photography Club and Music Club. **Sep 2018 – Jun 2019**
- Attended TEDx, CET(March 2017) and TEDx, NTU. **Nov 2018**