



# Sourab Babu Sridhar

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Richertsgatan 2E LGH 1008  
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**Nationality:**

Indian

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## Academic History

### 2019 - Present

#### Master of Science - System, Controls, and Mechatronics

Chalmers University of Technology, Gothenburg, Sweden

Courses: Deep Machine Learning, Humanoid Robotics, Computer Vision, Image Analysis, Sensor Fusion and Nonlinear Filtering

### 2011 - 2015

#### Bachelor of Engineering - Electrical and Electronics Engineering

B N M Institute of Technology, Bangalore, India

Courses: Artificial Neural Networks, Embedded Systems, Control Systems, Digital Signal Processing

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## Work Experience

September 2019 -  
August 2020

#### Project Engineer

Chalmers Formula Student Driverless, Gothenburg, Sweden

- Designed and tested vehicle state estimation algorithm based on Extended Kalman Filter (EKF), Unscented Kalman Filter (UKF), and Cubature Kalman Filter (CKF) using GPS-IMU integration
- Developed embedded system software for the low voltage system incorporating a test-driven development framework
- Spearheaded the team into ZF Formula Student Driverless Challenge 2020

April 2018 -  
June 2019

#### Senior Software Engineer

Robert Bosch Engineering and Business Solutions, Bangalore, India

- Supported requirement engineering and devised test strategy for device drivers and ECU hardware verification software, setting up development activities for the next generation of Bosch electrical braking system
- Optimized software variant handling for safety-critical supply module in all Bosch electrical braking system products, diminishing software maintenance effort by 50% for over 30+ projects worldwide
- Investigated over 25+ production issues all over the world with an average resolution time of 3 days, decreasing the defect rate to 5 ppm

April 2017 -  
March 2018

#### Product Software Developer

Robert Bosch GmbH, Abstatt, Germany

- Collaborated with 60+ stakeholders across the world to build the first "Redundant Supply Concept" for all Bosch electrical braking system products, resulting in the development of two autonomous driving level 3 compatible active safety products from Bosch
- Developed device drivers and created hardware and software tests for safety-critical redundant supply module in all Bosch electrical braking system products, ensuring series production of 5+ autonomous driving level 3 compatible active safety projects worldwide

July 2015 -  
March 2017

#### Associate Software Engineer

Robert Bosch Engineering and Business Solutions, Bangalore, India

- Designed device drivers for safety-critical supply module in all Bosch electrical braking system products, ensuring ASIL-D compliance in over 30+ projects worldwide
- Implemented and deployed simulation models and tests for over 60% of all Bosch electrical braking system-specific device drivers, expanding software tests by over 500% in over 30+ projects worldwide
- Secured ASPICE process compliance for all personal development activities, aiding in ASPICE level 1 assessment for all Bosch electrical braking system products

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## Technical Skills

<b>Programming:</b>	Python, C++, C, MATLAB
<b>Machine Learning Framework:</b>	Pytorch, Tensorflow, Keras
<b>Development Tool:</b>	Microsoft Visual Studio, Eclipse, PyCharm
<b>Operating Systems:</b>	Windows - All platforms, Linux
<b>Technologies:</b>	Convolutional Neural Network, Recurrent Neural Network, Reinforcement Learning
<b>Other Tools:</b>	Git, SVN (Version Management) Microsoft Azure (Cloud Computing for Machine Learning) IBM DOORS (Requirements Management) ALM (Application Management) Docker (Software Containerization)

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## Projects

### Data Augmentation Using Generative Adversarial Networks (GANs) (10/2020 - Present)

- **Summary:** Designed and implemented a Conditional Generative Adversarial Network (cGAN) to generate training images from semantic segmented label map using image-to-image translation technique
- **Programming Language:** Python
- **Machine Learning Framework:** Keras, Tensorflow

### Object detection and tracking with multiple cameras (10/2020 - Present)

- **Summary:** Designed and implemented an object detection algorithm to detect and track multiple objects and handle the handover between multiple cameras
- **Programming Language:** Python

### Robotic Manipulation using Linear Genetic Programming and Visual Feedback (09/2020 - 10/2020)

- **Summary:** Developed a linear genetic algorithm for a robot to learn picking up an object using its gripper
- **Programming Language:** Python

### Cone Detection using YOLOv2 (06/2020 - 09/2020)

- **Summary:** Designed and implemented a cone detection algorithm using the YOLOv2 object detection algorithm
- **Programming Language:** Python

### MNIST Handwritten Digit Classification using Convolutional Neural Networks (01/2020 - 03/2020)

- **Summary:** Designed and implemented a fully convolutional neural network for handwritten digit classification
- **Programming Language:** Python

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## Languages

- English: C2
- German: A1
- Hindi
- Kannada

## Core Competency

- Leadership Skills
- Team Player
- Problem Solving
- Critical Thinking
- Communication

## Hobbies

- Jogging
- Reading Books

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## Volunteering

June 2019 -  
August 2015

### Education Volunteer

Robert Bosch Engineering and Business Solutions, Bangalore, India

- Mentored 100+ students from class VIII to class X on career development at Government High School, Dodaballe, India
- Taught English to 40+ kids in class VI at Paranga Vidhya Kendra, Thorepalya, India
- Secured employee participation in fundraising activities

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## Awards

- **Young Achiever Award** - ESP Department, Robert Bosch Engineering and Business Solutions (2016)
  - **Best Outgoing Student** - B N M Institute of Technology (2015)
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