Sourab Bapu Sridhar

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Date of Birth:
04.09.1994

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

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

Technical Skills

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

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

Languages

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

Core Competency

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

Hobbies

- Jogging
- Reading Books

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, Dodabelle, India
- Taught English to 40+ kids in class VI at Paranga Vidhya Kendra, Thorepalya, India
- Secured employee participation in fundraising activities

Awards

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