

# SARATH M

## Machine Learning Engineer

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## EXPERIENCE

### Specialist

#### Tata Elxsi

July 2016 – Ongoing

Technopark, Trivandrum

### Embedded System Engineer

#### Unisync Technologies

Jan 2015 – July 2016

Vyttila, Ernakulam

## MOST PROUD OF



#### My Professional Achievement

Awarded the highest rating "Outstanding" in three consecutive appraisal cycles in Tata Elxsi



#### My Academic Achievement

Final year academic project "Hexapod" was selected for the finals in State level competition



#### Martial Arts

Black Belt holder in Shito-Ryu style of Karate

## EDUCATION

### Course in Embedded Systems

#### Vector India Institute, Bangalore, Karnataka

2014

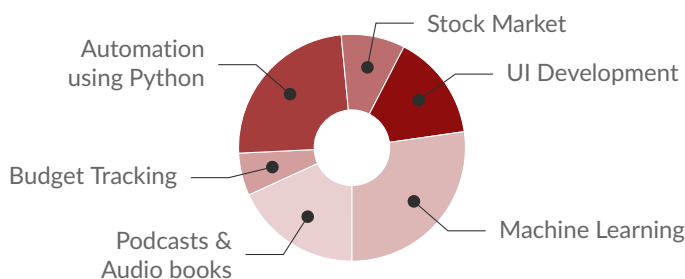
### B.Tech (ECE)

#### Govt. College of Engineering Cherthala,

#### Cochin University Of Science and Technology, Kerala

2010 - 2014

## INTERESTS



## MY LIFE PHILOSOPHY

*"Quality is not an act; it is a habit."*

## STRENGTHS

Team Player

Passionate Programmer

Fast Learner

Hard-working

Eye for detail

## SKILLS

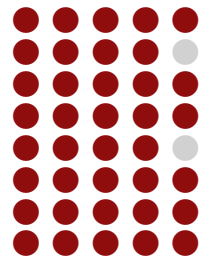
### Machine Learning Frameworks

Tensorflow  
Scikit-learn  
NLTK



### Visualization & Data Processing

Pandas  
Numpy  
Flask  
Bokeh  
Plotly  
Grafana  
Twitter Bootstrap  
PyQt4, Qt Designer



### Distributed Systems

ROS  
Paho MQTT  
Redis  
Apache Kafka



### Test Automation & CI

Jenkins  
Robot Framework



### Devops

Docker  
Ansible



## LANGUAGES

English  
Malayalam  
Hindi



# PROJECTS

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## ADAS features for Autonomous Vehicle project

 Role: Project Lead

Responsibilities:

- Development of Object detection system using Convolutional Neural Networks
  - Faster-RCNN, Yolo V2, Single Shot Detectors
- Development of Drivable Area using Image Segmentation
  - SegNet, Mask R-CNN
- Design and development of Distributed System using Robotic Operating System (ROS)
- Testing and deployment of the ML model in NVidia Jetson TX1 platform
- Object detection in 3D Point cloud data using PointNet

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## Lidargen

 Role: Project Lead

Responsibilities:

- Develop a tool to emulate LIDAR using mathematical model
- Use ray-casting to generate point cloud data
- Developed 3D visualization using Qt and ROS RViz

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## Intelligent Battery Management System

 Role: Project Lead

Responsibilities:

- Implemented Neural Network Regression model as a benchmark
- Implemented LSTM models to improve upon the benchmark results
- Supported in development of 'Digital Twin' of a cell with ML models mimicking the electrochemical characteristics
- Developed a POC on Anomaly detection algorithm to demonstrate online-learning capabilities of the framework
- Create a Data dashboard for monitoring sensor data in real-time using Flask and Bokeh

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## Natural Language Processing for JIRA ticket Analytics

 Role: Project Lead

Responsibilities:

- Data cleaning and Exploratory Data Analysis using NLTK
  - Remove stop words and Stemming the corpus
  - Named Entity Recognition using Spacy
  - Visualizations using Word Cloud
- Search and filter feature using BERT model and Elasticsearch
  - Converting each ticket into fixed length vector using BERT
  - Save the vectors into Elasticsearch
  - Use Cosine Similarity to compare and filter tickets

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## Automated Testing and CI Framework

 Role: Project Lead

Responsibilities:

- Develop a framework that enables rapid and Automated testing
- The framework should support both SIL and HIL testing