CURRICULUM VITAE
PRITHVI SURESH
prithvisuresh@ieee.org

EDUCATION

SRM Institute of Science and Technology   Kattankulathur, Kanchipuram, Tamil Nadu
Bachelor of Technology in Electronics and Communication *GPA: 9.53*   July 2016 - May 2020

Arsha Vidya Mandir   Velcahery, Chennai, Tamil Nadu
XII Grade, Computer Science (Python) *Percentage: 91.6%*   June 2015 - May 2016

Arsha Vidya Mandir   Velachery, Chennai, Tamil Nadu
X Grade *GPA: 9.4*   June 2013 - June 2014

RESARCH EXPERIENCE

Healthcare Technology Innovation Centre   IITM Research Park, Chennai, Tamil Nadu
Research Intern   December, 2019 | Present

- Conducting research on the applications of Machine Learning on Physiological signals, with an emphasis on quantized models for deployment on edge devices.

Solarillion Foundation   West Jafferkhanpet, Chennai, Tamil Nadu
Undergraduate Research Assistant   July, 2017 | Present

- Pursuing research in the field of Embedded Systems/IoT at the crossroads of Machine Learning.

RELAVANT COURSES

Signal Processing:	Signals and Systems, Digital Signal Processing
Embedded Systems:	Microprocessors and Microcontrollers, Embedded C
Communication:	Communication systems, Digital Communication
Digital System Design:	Digital systems, VLSI Design, VHDL
Machine Learning:	Practical Machine Learning with Tensorflow (online)

SKILLS

Programming Languages:	Python, Arduino, Embedded C, Matlab, Verilog, VHDL
Domains:	Machine Learning, Deep Learning, Embedded Systems, Signal Processing
Deep Learning Frameworks:	Tensorflow, Keras, PyTorch

PUBLICATIONS

Robust Modelling of Reflectance Pulse Oximetry for SpO2 Estimation
Accepted at the 42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society

A minimally calibrated, data driven approach to obtain Specific Oxygen in the blood from reflectance photoplethysmogram.

Gait Recovery System for Parkinson's disease using Machine Learning on Embedded Platforms
Accepted at 14th IEEE SysCon (2020), Montreal, Canada

Design and Optimization of a machine learning model for assisting recovery of patients with Parkinson's disease encountering Freezing of Gait on resource constrained devices such as an ATmega2560.

Low-cost Wearable Gesture Recognition System with Minimal User Calibration for ASL
Presented at 12th IEEE International Conference on Internet of Things (iThings-2019), Atlanta, GA, USA

A wearable gesture recognition system that identifies the alphabetic gestures in the American Sign Language (ASL) efficiently, requiring minimal user calibration. The system uses a heterogeneous collection of sensors, viz., contact, flex and inertial, placed strategically on the hand.

PROJECTS

Open Source Monitoring System for Neonates and Infants
Tools Used: Pytorch, OpenBCI, Raspberry Pi
https://github.com/prithusuresh/OMNI
OMNI provides a deep learning algorithm to robustly extract the Heart Rate and Breathing Rate of infants from a single lead ECG, implemented on a Raspberry Pi.

Enhanced Depth of Field Synthesis using Multi Sensor Focus Stacking
in progress (as part of the Samsung Prism Program)
Project aims at utilizing multiple camera sensors with different focal length to generate a composite with a larger Depth of Field whilst retaining detail and sharpness.

Speed Control System of a DC motor
Tools Used: Arduino
https://github.com/prithusuresh/Closed-loop-speed-control.git
The project consists of building a non-contact type tachometer and using this information to control the speed of the shaft of a DC motor.

Object Recognition Module for Culinary purposes
Tools Used: Python, Drive API, Darkflow
A cloud based system that identifies food ingredients captured in an image and retrieves recipes consisting of identified ingredients.

Awards and Recognition

- Obtained a **scholarship for two consecutive years** as result of ranking within the top 5 in the ECE department.

  - Secured the 2nd **rank** in the second year of undergraduation and 3rd **rank** in the first year of undergraduation, in the ECE department out of **912 students**.

- Won best presentation at "Tech Talk - 2016" conducted by SRM Institute of Science and Technology on topic - "MPEG video compression".

Teaching Experience

Solarillion Foundation   West Jafferkhanpet, Chennai, Tamil Nadu
Undergraduate Teaching Assistant   July, 2017 | Present

- Mentoring students in the fields of Embedded Systems and Machine Learning.

- Designing and Grading Coding Assignments and Projects in Python and Arduino.

John Lee's School of Music   St.Thomas Mount, Chennai, Tamil Nadu
Guitar Instructor   April 2017 | January 2020

- Prepare students to face the plectrum guitar exam conducted by Registry of Guitar Tutors, London College of Music.

Extracurriculars

Solarillion Foundation

- Work space automation using Slack API.

- Server Maintenance.

Non-Technical Skills and Qualifications

- Guitar (Grade 4 London College of Music)

- Theory of Music(Grade 6 Trinity college of Music)

- Keyboard