

Venkatakrishnan Sutharsan

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ACADEMIC QUALIFICATIONS

Bachelor of Engineering in Electrical and Electronics Engineering

2016 – 2020

SSN College of Engineering, Affiliated to Anna University, Kalavakkam - 603 110 , India. June 2020

CGPA - 8.16

EXPERIENCE

Project Associate, Indian Institute of Technology - Madras, Chennai, India

Jan 2021 – Present

Mentored by : Prof. V Kamakoti - Director, IIT Madras

- ☐ Working on developing Secure Hypervisor (Sec-V) for Shakti Processor which is based on RISC-V Architecture.
- ☐ Developing device drivers specific to Shakti based SoC in bare-metal programming, bootloaders and Linux Kernel.
- ☐ Workshops held for Students and working professionals on using Shakti Microprocessor.
- ☐ Presented to various Government Ministries and Organizations about Shakti Processor.
- ☐ Mentored/Guided Master's students on their Master's Thesis Project.

Teaching Assistant, Indian Institute of Technology - Madras, Chennai, India

Jan 2022 – Jun 2022

Professor : Prof. C Pandurangan - Advanced Data Structures and Algorithms (CS5800 and Lab)

- ☐ Teaching Assistant for Prof. C Pandurangan taking care of Assignment and Semester Evaluation also with other administrative works.

Teaching Assistant, Indian Institute of Technology - Madras, Chennai, India

Jul 2021 – Jan 2022

For Professor : Prof. C Pandurangan - Cryptography Basics (CS6530)

- ☐ Teaching Assistant for Prof. C Pandurangan taking care of Assignment and Semester Evaluation also with other administrative works.

Backend Web Developer, Corporeal Health Solutions Ltd.

Nov 2020 – Jan 2021

- ☐ Worked on Python for Backend Web Development using Flask. Worked on SQLite3 and PostgreSQL Databases.
- ☐ Analytics/Data Handling of User Data for Chest X-Ray based COVID-19 Detection.
- ☐ Data Security for Databases(Database Encryption and Hashing Sensitive Information).
- ☐ Automation of Forgot Password Mails and Registration Mails. Gallery handling from backend.

Project Intern, Council for Scientific and Industrial Research, Chennai, India

Dec 2019 – June 2020

Mentored by : Dr. Madan Kumar Lakshmanan, Senior Scientist, CSIR - CEERI, Chennai.

- ☐ Lead my team on a project to denoise Electroencephalogram (EEG) signals.
- ☐ Created a classifier to classify Cognitive Stress (such as words like *COLLEGE*, *LAB*) in the brain using Deep Neural Networks.
- ☐ Worked on data acquisition system for EEG data collection and processing.

Trainee, Council for Scientific and Industrial Research, Chennai, India

May 2019 – June 2019

Guided by : Dr. Madan Kumar Lakshmanan, Senior Scientist, CSIR - CEERI, Chennai.

- ☐ Worked on a project on Signal Processing Techniques for Electroencephalogram (EEG).
- ☐ Studied various kinds of Internal and External Noise Interference.
- ☐ Studied source estimation techniques like Independent Component Analysis.
- ☐ Implemented source estimation algorithm (FastICA) using python for artifact removal.

- ❑ In-plant training at Chennai Port Trust, Chennai, India. June 2018.
- ❑ Had an opportunity to have an understanding of various Departments in Chennai Port Trust, which include Railway Network for Goods Transportation, Electrical Sub-Stations for Power Supply, Illumination for lighting inside the Port and Crane Operations.

PAPER PUBLICATIONS

Title: [Electroencephalogram Signal Processing with Independent Component Analysis and Cognitive Stress Classification Using Convolutional Neural Networks](#)

Publisher: Lecture Notes in Networks and Systems (2022)
Vol 341. Springer, Singapore.

Title: [Design of Microcontroller Based Wireless Controlled Animatronic Hand](#)

Publisher: International Journal of Advanced Science and Technology (2020)
Vol. 29, No. 9s, (2020), pp. 3715-3724

ACADEMIC PROJECTS

Title: Electroencephalogram Signal Processing using Independent Component Analysis to classify Cognitive Stress

Period: May 2019 – June 2020

Team Size: 3

- ❑ Project on Electroencephalogram Signal Processing using Independent Component Analysis to classify Cognitive Stress

Title: Design of Microcontroller Based Wireless Controlled Animatronic Hand

Period: June 2017 – April 2018

Funded by SSN Innovation Centre

Team Size: 6

- ❑ A wirelessly controlled animatronic hand using Arduino and HC - 05 bluetooth for the application of bomb defusal, chemical usage and prosthetic arm.

Title: Satellite Weather receiver using MC3362

Team Size: 2

Period: January 2015 – May 2015

- ❑ Development of a low cost satellite weather receiver to acquire image signals from satellites launched by National Oceanic and Atmospheric Administration(NOAA) for weather forecasting.
- ❑ Received signals from NOAA satellites and decoded APT Images using WxToIMG. Utilized pre-built Tall narrow QFH antenna.

TRAININGS & CERTIFICATIONS

- ❑ [Advanced Data Structures and Algorithms - IIT Madras - CS5800 - Grade : B](#)
- ❑ [Foundation to Computer System Design - IIT Madras - NPTEL \(Gold Medalist\)](#)
- ❑ [Computer Networks and Internet Protocol - IIT Kharagpur - NPTEL \(Silver Medalist\)](#)
- ❑ [Neural Network and Deep Learning - deeplearning.ai.](#)
- ❑ [Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization - deeplearning.ai.](#)
- ❑ [Structuring Machine Learning Projects - deeplearning.ai.](#)
- ❑ [Convolutional Neural Networks - deeplearning.ai.](#)
- ❑ [Sequence Models - deeplearning.ai.](#)
- ❑ [Mathematics for Machine Learning: Linear Algebra - Imperial College London.](#)
- ❑ [Mathematics for Machine Learning: Multivariate Calculus - Imperial College London.](#)
- ❑ [Mathematics for Machine Learning: Principle Component Analysis - Imperial College London.](#)
- ❑ [Machine Learning with Python - IBM.](#)
- ❑ [COVID - 19 Contact Tracing - Johns Hopkins University.](#)

- ❑ [Programming for Everybody \(Getting Started with Python\).](#)
- ❑ Certified Amateur Wireless Station Operator, issued by the Ministry of Communication & IT, Government of India. August 2017.
- ❑ Certificate Course in Management, Great Lakes Institute of Management, Chennai, India. November 2015.

AWARDS & ACHIEVEMENTS

- ❑ Successful completion and demonstration of Smart farm using IoT prototyping in the 24-hour intra-college Hackathon – Hackerspace 2019.
- ❑ [Winner at Short Film Contest conducted by the Election Commission of India. \(2020\)](#)
- ❑ Participated in Project Exhibition held on the occasion of SSN Innovation Day - 2019.
- ❑ Presented paper at SRM Easwari Engineering College on ‘Electroencephalogram signals and noise reduction techniques’ - 2019
- ❑ Completed 75KM endurance cycling (Gran Fondo) conducted by Track and Trail – 2018.
- ❑ Winner (First Place) in the prestigious National Science Exhibition conducted by the Central Board of Secondary Education held at Gurgaon, Haryana, for the project RAD-SATT (Satellite weather receiver using MC3362).
- ❑ Completed 200KM endurance cycling conducted by Tamil Nadu Cycling Club - 2014.
- ❑ Displayed “Stirling Engine” during project fest event at St. Joseph’s College of Engineering - 2014
- ❑ Successful Completion of Dawn to Dusk Marathon - 2014
- ❑ Won second prize at Javelin throw at the Annual Sports meet - 2014, 2016.
- ❑ Participated in a 24KM cycling ride organised by Hercules Roadeo Chennai Cycling – 2013.
- ❑ Completed 100KM endurance cycling conducted by Tamil Nadu Cycling Club - 2013.
- ❑ International rank of 171 in National Science Olympiad - 2012.

EXTRACURRICULAR ACTIVITIES

- ❑ Photography - Since January 2014.
- ❑ Cycling - Since June 2013.