Venkatakrishnan Sutharsan

59/1 (New No.40/1), 1st Main Road, Raja Annamalai Puram, Chennai - 600028,
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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 - RISE Lab, 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 Registeration 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 Trainee, **Chennai Port Trust, Chennai, India**   **June 2018**

❏ 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.