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

All India Senior School Certificate Examination　(CBSE - XII Std)　　　**2016**

Maths, Physics, Chemistry and Computer Science (C++)
P S Senior Secondary School, Alarmelumangapuram, Chennai , India
Score: 462/500　(92.4%)

All India Secondary School Examination　(CBSE - X Std)　　　　　**2014**

P S Senior Secondary School, Alarmelumangapuram, Chennai , India
CGPA : 9.0

EXPERIENCE

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 artefact 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: Design of Microcontroller Based Wireless Controlled Animatronic Hand
Publisher: International Journal of Advanced Science and Technology
　　　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: Pneumonia Detection using X-rays - Created using Pytorch and Streamlit.

Team Size: 1

Period: May 2020 - June 2020

❏ Created an online application in streamlit with Pytorch and Keras to predict Pneumonia in X-Ray images uploaded to the application.

❏ The network uses convolutional neural network and shows whether the candidate has pneumonia with the prediction confidence.

Title: ECG learning using Pytorch.

Team Size: 2

Period: May 2020 – June 2020

❏ Worked on a ECG learning using Pytorch to classify the ECG into categories such as NORMAL, FUSION BEATS, VENTRICULAR ECTOPIC BEATS, etc using MITBIH dataset.

❏ The network performed with an accuracy of 80%.

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.

MINI-PROJECTS

❏ Image super-resolution - Coursera Guided Project using Keras.

❏ Quiz using Python Data Structures.

TRAININGS & CERTIFICATIONS

❏ [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.
- 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/Media – Photography - Since January 2014.
- Sports - Cycling - Since June 2013.