Venkatakrishnan Sutharsan

979-286-4518 venkatakrishnan.sutharsan@[tamu.edu & gmail.com] LinkedIn GitHub PortFolio

Education

Texas A&M University Dec 2024

Master of Science in Computer Engineering — ***CGPA - 3.25/4.00*** *College Station, Texas*

- **Relevant Coursework:** Computer Architecture, Microprocessor System Design, Operating System, Machine Learning Engineering, Data Visualization, Law and Policies in Cybersecurity, Quantum Logic Synthesis.
  Mentored by: Prof. Jeyavijayan Rajendran

Anna University Apr 2020

Bachelors of Engineering in Electrical and Electronics Engineering — ***CGPA - 8.16/10.00*** *Chennai, India*

- **Relevant Coursework:** Micro-processor and Micro-controllers, Digital Logic Circuits, Circuit Theory,

Technical Skills

Languages: C, C++, Python, Verilog, Bluspec System Verilog, SQLite3, PostgreSQL, Makefile, Java
Libraries: Flask, TensorFlow, PyTorch
Concepts: Operating System, Virtual Memory, Cache Memory, Compiler, Boot loaders, Artificial Intelligence, Machine Learning, Neural Networks, REST API, Data Visualization.
Tools: Vivado, Final Cut Pro

Certifications

Foundation to Computer System Design - IIT Madras (NPTEL)
Deep Learning Specialization - DeepLearning.ai
Mathematics for Machine Learning Specialization - Imperial College London
Certificate Course in Management - Great Lakes Institute of Management, Chennai (2015)

Experience

Indian Institute of Technology, Madras Jan 2021 – Dec 2022

Project Associate *- Mentored by: Prof. Kamakoti - Director, IIT Madras* *Chennai, India*

- Engineered the first boot-up of the I-Class Processor (16-stage OOO Processor) in FPGA for the Shakti Ecosystem.
- Spearheaded a team on developing Secure Boot in hardware using Cryptographic accelerators in Shakti Processor.
- Collaborated 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, boot-loaders and Linux Kernel.
- Addressed students and delegates from the Government of India with demo's and workshops on various features (including security) and working of Shakti Microprocessor.

Corporeal Health Solutions Ltd. Nov 2020 – Jan 2021

Backend Web Developer *- Mentored by: Mr. Hari Haran P - CEO, Corporeal Health Solutions Ltd.* *Chennai, India*

- Optimized and created an Efficient backend for AI based Healthcare Product (CHOCO) using Flask (Python).
- Overhauled the data security infrastructure in the system including databases. Remodeled the Database System.

Projects

Hardware Fuzzing using Beagle Bone Black | *C, C++, Makefile, TI CCS, ARM Toolchain, JTAG DP* Present

- Working with Beagle Bone Black Board to have hardware fuzzing on AM335X processor for developing framework for PLC Fuzzing using tools like OpenOCD, GDB to create platform for fuzzing.

EEG Signal Processing using ICA to classify Cognitive Stress | *Python, sklearn, PyTorch* May 2019 - Jun 2020

- Orchestrated an EEG signal analysis strategy using Sklearn and PyTorch to enhance human brain predictability.

Design of Micro-controller based Wireless Controlled Animatronic Hand | *C, ATMEGA328P* Jun 2017 - Apr 2018

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

Satellite Weather receiver using MC3362 | *PCB Design, WxToIMG* Jan 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.

Publications

- Sutharsan, V., et al (2022), *Electroencephalogram Signal Processing with Independent Component Analysis and Cognitive Stress Classification Using Convolutional Neural Networks*, Proceedings of International Conference on Recent Trends in Computing, Lecture Notes in Networks and Systems, vol 341. Springer, Singapore. doi: 10.1007/978-981-16-7118-0_24

- Swaminathan, Alagappan & Sutharsan, Venkatakrishnan & Tamilselvi, S.. (2021). *Wind Power Projection using Weather Forecasts by Novel Deep Neural Networks.*