MOHIT PALLIYL SATHYASEELAN

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EDUCATION

Master of Science, Electrical and Computer Engineering   August 2021 - December 2021
University of Florida, Gainesville, FL   GPA 3.47/4
Bachelor of Engineering, Electronics and Communication Engineering   July 2017 - June 2021
Vellore Institute of Technology, Amaravathi,India   GPA 3.9/4

SKILLS

Programming Languages : C, C++, Python, VHDL, MATLAB, UVM, Embedded C
Software worked with : NI Labview, Proteus, Vivado, VHDL, ModelSim, Jupyter Notebook, Git
Hardware worked with : ZedBoard (Virtex7 FPGA) ,OMRON PLC - CJ2M-CPU33, Nadesco AC controller, Fanuc controller - R-30iB, Raspberry Pi, Aurduino, Esp (low powerd microcontrollers), LTE modules,RTOS, Drivers

PROFESSIONAL EXPERIENCE

GRADUATE RESEARCH ASSISTANT   August 2022 - Decemeber 2022
EAAR Lab National Science Foundation Funded Project; Developed a system which can predict the traffic using machine learning. (Microcontroller, Pre-polarized microphone, LTE solution and interface)

FORD MOTOR COMPANY (R&AE/Product Development Intern)   March 2022 - August 2022
Studied Visible Light Communication (VLC) and Positioning, established their factors in Indoor localization.
Proposed a Novel approach using April tags for localization, with maximum error of 6 cmsq.

WIN AUTOMATION (Intern)   January 2021- June 2021
Worked with the IoT solutions division. Built Medsmart – an IoT device used for COVID applications.
Collaborated on the FANUC project - implemented an IoT layer for industrial communication. (TCP, UDP)
Project related to NVIDIA jetson - UGV application

MINDTECK (R&D Intern)   June 2018 - July 2018
Assisted the CTO in building a BLE-based solution to track assets within an enclosed area.
Foundation of triangulation was crucial here requiring at least three Raspberry Pi's for the working of the system.
Collected and tested RSSI values for every one meter to help the system reach its accuracy.

RESEARCH PAPER

IoT Based COVID De-Escalation System Using Bluetooth Low-Level Energy (ICICT- 2021)
An IoT Device, which predicts COVID-19 cases in that proximity of the device using pre-existing data collected in the database.

COURSEWORK

Blockchain, Engineering Innovation, Parallel Computer Architecture, Computer Architecture, Advanced System Programing, IoT Privacy and Security, Reconfigurable Computing, Fundamental of Machine Learning, Image processing and Computer Vision.

ACADEMIC PROJECTS

Evaluation of NASA Advanced Supercomputing Parallel Benchmark on HPC
Used parallel computing programming interfaces such as MPI, OpenMP, CUDA; Profiled using gprof, score-p and nvprof profiling tools. Compared in depth performance of HiPergator HPC to the benchmarked HPC systems.

Handwritten Symbol Classification using Convolutional Neural Network
Designed a Convolutional Neural Network for a custom handwritten data set.
Evaluated other methods of classification. Improved model, to provide 94% accuracy.

1-D Time-Domain Convolution using FPGA
Implemented a custom accelerator circuit on FPGA to obtain 1-D convolution. Optimized circuit to a 14x speed with parallelism with respect to software implementation of the proposed convolution.

Design of Character Device Driver and USB keyboard driver
Modified USB keyboard driver to support different modes of operation on Linux and implemented a character device driver supporting independent ramdisk for each device with semaphores.

Benchmark performance comparison of In-order and Out-of-order CPU using ARM8 system in Gem5
Studied ARM8 Microarchitecture; Used benchmark suite to compare the performance of Inorder and Out-of-order CPUs.

AgrIoT
IoT system which obtains temperature and humidity data. The data is secured using AWS and is shared across the IoT system using AES encryption. Devices used MQTT protocol to transfer messages to one another.

Image Segmentation and Recognition of Vehicle Plates using Image processing techniques
Designed a model to accurately predict any vehicle's plate number using Tesseract Engine.
Implemented various Image processing techniques to improve the accuracy.