Praveen Dhananjaya

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EDUCATION

COMPUTER ENGINEERING BSc hons (Eng) | University of Peradeniya Sri Lanaka
Present – Oct 2022 | Faculty of Engineering

- 3rd-year undergraduate
- Current GPA : 3.40 / 4.00

GCE | Advanced Level
2016

- Maths - A , Physics - B , Chemistry - B
- z-core 1.83
- 1206 from 30000+ participants nationwide

SUMMARY

A 3rd-year Computer Engineering undergraduate who is highly motivated about hardware development and has hands-on experience in multiple hardware projects. I have a keen interest in hardware, embedded, and system integration. I am very excited to join your team and look forward to developing NTU's next groundbreaking research. I am seeking a hardware internship for the time period Dec/2021 to Apr/2022.

RELEVANT COURSEWORK

HARDWARE COURSES

- Computer Architecture, Digital Design, Embedded Systems, Signal Processing, Computer Systems Engineering: Industrial Networks, Electronics I ,Electronics II | Bsc Eng Degree Program
- Circuit Design

PROGRAMMING

- software construction, Data Structures and Algorithms, programming methodology, Software Engineering | Bsc Eng Degree Program
- Verilog , C++ , Arm , ARM assembly, Java, Python , Arduino

OTHER COURSES

- Machine learning,Operating Systems, Computer and Network Security | university course

TECHNICAL SKILLS

PROGRAMMING LANGUAGES | C , C++, Java, Python

HARDWARE PROGRAMMING | Verilog, arduino, AVR C, PIC, ARM Assembly

PCB DESIGN | Altium , eagle , easyeda

3D MODELING | Fusion 360 , solidworks

PROJECTS

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SMART WAREHOUSE MANAGEMENT SYSTEM 2021
This is a fully automated warehouse management system using agvs and robotic arms. This system is able to support shopping websites while preparing customer orders autonomously.

- Technologies : circuit design, AVR C and Arduino, multitasking(real-time scheduling) and interrupt, active filters, encryption schemes(fernet and ect), Mysql, mqtt, AWS server
- https://github.com/cepdnaclk/e16-3yp-smart-pharmaceutical-warehousing

8-BIT SINGLE-CYCLE CPU 2020
8-bit single-cycle CPU based on Harvard architecture which uses a 32-bit instruction word. This CPU is able to execute most algorithms.

- Technologies : Verilog, Harvard architecture, pipelining mechanisms , memory hierarchy(direct-mapped cache), custom assembler
- github: https://github.com/praveendhananjaya/CPU-8-bit-FPGA-

8 BIT COMPUTER SAP-1 2020
This is a common bus architecture (SAP-1) computer. It can compute simple algorithms. For this implementation, I designed and developed a custom PCB and microinstruction set.
- Technologies : VSAP-1 architecture, circuit design, custom assembler
- github: https://github.com/praveendhananjaya/CPU-8-bit-common-bus

MICRO-MOUSE 2019
develop a robot that can approach the destination of a maze.Real-time operation using interrupts and super loop approach.
- Technologies : custom PCB, Arduino and C flood fill algorithm A* algorithm, active filters, superloop programming architecture
- github: https://github.com/praveendhananjaya/micro-mouse

LANDSLIDE MONITORING SYSTEM 2018
This is low budget Land slide monitoring system. This system is capable to detect and monitor the land side and land behavior.
- Technologies : flexible piezoelectric sensor and single analyse, active filters, pattern recognition, UDP communication using WiFi network superloop programming architecture

HOSPITAL MANAGEMENT SYSTEM 2020
This system is able to manage hospital resources without starving the services. While handling all the cashiers' workers. Ex:- billing and recording.
- Technologies : MySQL, HTML, PHP
- github: https://github.com/praveendhananjaya/hospital-managment-system

FRACTAL VISUALIZER 2020
JAVA OOP base multithreading programme.Fractal Visualizer is java based program and calculates 640000 mandelbrot or Julia fractal within seconds. In order to maximize the performance, the master thread creates a job bank with 400 entries and continuously feeds. And these jobs are processed by CPUs. As a result, both CPUs and jobs aren't starving without resources.
- Technologies : Java OOP, Witch is accelerated by tiled base multi threading
- github: https://github.com/praveendhananjaya/Fractals

SURVEILLANCE CAMERA SYSTEM 2020
Suspicious activity tracking. ex:- Face covers , Abandoned packages , suspicious object , unauthorized people
- Technologies : python , tensor-flow

FOOTWEAR WAREHOUSE MANAGEMENT SYSTEM - REAL CUSTOMER present
We are developing a footwear warehouse management system for a local customer. In this project, we are addressing his issues and requirement. Such as reliable data recording, cashier pos system, salesman interface, product preview.
- Technologies : Java base system (host on raspberry pi) gradle automation, microservices architecture, Sql, javaFX, encryption.

LIVER PATIENT IDENTIFICATION SYSTEM present
These liver get diseases due to various reasons, and they are fuzzy in relations. The liver patient does not get symptoms in the early stages, and the symptoms may be vague. We are developing a machine model to solve this problem.
- Technologies : Garbage In Garbage out, Occam's Razor, PSO feature extraction, RANDOM FOREST(RF), SUPPORT VECTOR MACHINE (SVM) ,MLP (Multilayer Perceptron)
- Project Proposal:
  https://docs.google.com/document/d/1gmkr3Zk6c73GIBAXvno4e2rnpemJlmiZRz9w6iyu7oY/edit?usp=sharing

ACHIEVEMENT

CYBERSECURITY CISCO | 2021
course authorized by CISCO and offered through CISCO networking academy

NERUAL NETWORKS AND DEEP LEARING | 2021
course authorized by Deeplearning.AI and offered through Coursera

ROBOFEST MICROMOUSE 3rd place| 2019
14×14 Maze solving robot competition.Using small robot, nationwide competition over 100+ teams

ACES HACKATHON 1st place| 2019

Surveillance camera system Suspicious activity monitoring system, competition over 60+ teams

MORA XTREME 4.0 1st place| 2019

12-hour algorithmic coding nationwide competition,nationwide competition over 100+ teams

JAFFNA CODERS V1.0 4th place| 2019

12-hour algorithmic coding nationwide competition,nationwide competition over 80+ teams

ACES CODERS V7.0|2018 participation

12-hour algorithmic coding nationwide competition,nationwide competition over 150+ teams

ACES HACKATHON 1st place| 2018

landslide monitoring system , low cost landslid detection and alarming system, competition over 60+ teams

REFERENCES

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