PUBUDU PREMATHILAKA

Computer Engineer

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in linkedin.com/in/pubuduudara/   github.com/pubuduudara/   🔗 pubuduudara.github.io

PROJECTS

Accelerating Adaptive Banded Event Alignment Algorithm

Research Project

○ https://github.com/pubuduudara/abea-on-fpga

- Parallelise and optimise ABEA algorithm which developed for nanopolish software package by Oxford nanopore DNA sequencing, to run efficiently on FPGA architectures

`OpenCL` `Stratix V` `C/C++`

Novel Finite Element Based Structural Analysis Software

○ https://github.com/pubuduudara/FEM

- A novel software development for structural analysis based on a research done by Dpt of Civil Engineering
- Contribution: Algorithmic implementation, running time optimization

`Python` `Numpy` `Scipy` `Matplotlib` `MATLAB` `OOP`

(IIoT) Intelligent Road Traffic Controlling System

○ https://github.com/pubuduudara/3rd-year-project

- Sensor based, multiple junction traffic controlling system
- Contribution: Algorithm Development, Utilization of protocols for Data communication. Broker program and design

`MQTT` `Arduino` `Raspberry pi` `ESP32`

ML Model to Make Predictions Using Unknown Dataset

○ https://github.com/pubuduudara/ML-Classification

- Classification problem using unknown Data set
- Contribution: Data pre-processing, Feature exploration and model selection

`Python` `Weka` `Numpy` `Pandas`

Real-Time Vehicle Identification Using Image Processing

○ https://github.com/pubuduudara/RTVIS

- An autonomous ticketing system for highways
- Contribution: Implementing number detection system, Database, GUI

`OpenCV` `Python` `PyQt5` `MySQL` `pysql` `HTTP`

Auction Server

○ https://github.com/pubuduudara/Auction-Server

- Implemented a server which can be used by clients to bid for items in a stock exchange
- Contribution: Individual contribution

`JAVA` `OOP` `Threads` `Sockets`

More projects/achievements on: https://pubuduudara.github.io/

EDUCATION

BSc in Computer Engineering

University of Peradeniya   🎓 **GPA: 3.66/4**

📅 Nov 2016 – Ongoing

Dharmaraja College, Kandy

G.C.E. Advanced Level Examination

📅 Jan 2001 – Aug 2014

ACHIEVEMENTS

🏆 **Winner in ACES Hackathon 2019**
Intra university Hackathon

🏆 **Winner in Dialog App Challenge 2017**
National level inter university Application challenge hosted by Dialog Axiata

🏆 **1st Runner-up in Pre-Coders v7.0 2018**
Intra university programming contest

🏆 **4th Team Ranking in ACES Coders v7.0 2018**
Inter university programming contest

🏆 **1st Runner-up in Pre-Xtreme v1.0 2019**
Intra university programming contest

🏆 **2nd Runner-up in Pre-Coders v8.0 2020**
Intra university programming contest

🏆 **Project Data Over Sound Nominated as the Most Popular Idea of ACES Hackathon 2018**
Intra university hackathon

☆ **Semi-finalists in Xbotix 2018**
Inter university robotics competition hosted by university of Ruhuna

☆ **Top 10 finalists in SLRC 2018**
Inter university robotics competition hosted by university of Moratuwa

MINI PROJECTS

- **MAS Spreader Machine Automation,**
  Real-Time data measurement system using IoT capabilities for Spreader Machine to overcome the inefficiency of manual data entering procedure
- **Vocab,** An Android app using Flutter to save new english words
- **Tic Tac Toe Game-Board,** The Game-board is made for playing traditional tic tac toe game. Built using MATLAB, Arduino
- **VoCe** Multi user peer to peer audio call conferencing application
- **4bit-Arithmetic and Logic Unit,** A Verilog implementation of a 4-bit ALU
- **Who is Speaking,** A speaker recognition system with basic signal processing techniques
- **Pera SAP-I,** 8-bit Minimum Computer (AKA Simple As Possible Computer - SAP) made from simple logic ICs, flip-flops and a few memory modules

WORK EXPERIENCE

CASUAL INSTRUCTOR

🗓 Feb 2020 – Oct 2020

- Instructor for Computer Hardware courses of the Faculty of Engineering, Univerisyt of Peradeniya

ROBOTICS, PROGRAMMING & DEVELOPMENT CONSULTANT

🗓 Nov 2019 – Feb 2020

- Consultant at IgniterSpace, Kandy

VOLUNTEERING

- **Speaker**, at weekly Interactive coding sessions for freshman class of University of Peradeniya
- **Team leader**, of AISEC, Incoming Global Talent and Global Volunteer (IGET/IGE), University of Peradeniya

EXTRACURRICULAR

- **Toastmaster** - Hill capital toastmasters club
- **Troop leader** - 1st Kandy Dharmaraja scout group, troop number 7
- **Secretary** - Efficient Energy Using and Saving Society of Dharmaraja college, Kandy
- **Team member** - Athletics team, Dharmaraja college, Kandy
- **Member** - Association of Computer Engineering Students (ACES), University of Peradeniya
- **Member** - Hacker's Club, University of Peradeniya

REFEREES

Prof. Roshan Ragel (PhD UNSW)
Professor,
Dpt of Computer Engineering,
University Of Peradeniya, Sri Lanka
@ http://www.ce.pdn.ac.lk/academic-staff/roshan-g-ragel/
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Dr. Suneth Karunarathnal (PhD University of Oulu)
Senior Lecturer,
Dpt of Computer Engineering,
University Of Peradeniya, Sri Lanka
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SKILLS

Programming
- JAVA, C, C++, Python, JavaScript

Numerical Computing
- MATLAB, Octave, Numpy, Pandas, Sklearn, Keras

Hardware
- ESP Programming using Arduino/C
- FPGA (Cyclone IV, Statix V) Programming using HDL (Verilog) and HLS (OpenCL/C)
- CUDA/C

Internet Of Things
- MQTT Protocol, MQTT Broker Setup, Network Design
- AWS IoT setup.

Networking/Security
- Hands on experience with Cisco devices configuration with security implementations

Distributed Frameworks
- Apache Hadoop, Apache Spark

Software (Backend)
- Design, Algorithmic Optimizations, Data Structures, Multi-threading
- Software Testing
- AWS server (web hosting, Database Management)

Database
- SQL, NoSQL
- Query Optimizations and Database Tuning, Distributed Databases
- Database Security

Operating Systems
- Linux, Windows, Android

Development/Other
- Mobile Applications using Flutter, Firebase
- HTML, CSS
- Docker
- GitHub

COURSES/CERTIFICATES

- **Introduction to Big Data and Hadoop**
  Conducted by: Engr. Palash Gupta, OSS/CEM/Big Data
- **Data Center Virtualization and Cloud Computing Infrastructure** Conducted by: Bangladesh Research and Education Network
- **Machine Learning**
  Conducted by: Stanford University
- **Neural Networks and Deep Learning**
  Conducted by: DeepLearning.AI
- **Convolutional Neural Networks:**
  Conducted by: DeepLearning.AI
- **Introduction to OpenCL on FPGAs**
  Conducted by: Intel on Coursera
- **AWS Fundamentals: Going Cloud-Native**
  Conducted by: Amazon Web Services

Credential on:
https://www.linkedin.com/in/pubuduudara/