

PUBUDU PREMATHILAKA

Computer Engineer

pubudu.premathilaka@eng.pdn.ac.lk +94719207825 Kandy, Sri Lanka
linkedin.com/in/pubuduudara/ github.com/pubuduudara/ pubuduudara.github.io



PROJECTS

Accelerating Adaptive Banded Event Alignment Algorithm

Research Project

Web Page

- Parallelise and optimise ABEA algorithm which developed for nanopore DNA sequencing, to run efficiently on FPGA architectures

OpenCL Stratix V C

Novel Finite Element Based Structural Analysis Software

Web Page

- 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

Web Page

- 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

Web Page

- Classification problem using unknown Dataset
- Contribution: Data pre-processing, Feature exploration and Model selection

Python Weka Numpy Pandas

Real-Time Vehicle Identification Using Image Processing

GitHub

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

OpenCV Python PyQt5 MySQL pymysql HTTP

Auction Server

GitHub

- 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 – Present

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, University of Peradeniya

Technical Consultant

📅 Nov 2019 – Present

- 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

🏠 Web

✉ roshanr@ce.pdn.ac.lk

Dr. Suneth Karunarathnal (PhD University of Oulu)
Senior Lecturer,
Dpt of Computer Engineering,
University Of Peradeniya, Sri Lanka

🏠 Web

✉ namal@eng.pdn.ac.lk

SKILLS

Programming

- JAVA, C, Python, JavaScript

Numerical Computing

- MATLAB, Octave, Numpy, Pandas, Sklearn

Hardware

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

Internet Of Things

- MQTT Protocol, MQTT Broker Setup, Network Design

Networking/Security

- Hands on experience with Cisco devices configuration with security implementations

Distributed Frameworks

- Hadoop

Software (Backend)

- Design, Algorithmic Optimizations, Data Structures, Multi-threading
- Software Testing

Database

- MySQL
- Query Optimizations and Database Tuning, Distributed Databases
- Database Security

Operating Systems

- Linux, Windows, Android

Development/Other

- 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/>