PUBUDU PREMATHILAKA

Computer Engineering Undergraduate

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PROJECTS

Heterogeneous Framework for Gross Exposure Calculation
Internship Project

- Involved in developing low latency trading platform for gross exposure calculation using a GPU-FPGA based high performance computing system
- *Technologies/Tools: C++, OpenCL, Vitis, AWS*

Energy Efficient Adaptive Banded Event Alignment
Research: Publication Venue - IEEE ICIAfS 2021

- Parallelise and optimise ABEA algorithm which developed is for nanopolish software package by Oxford nanopore DNA sequencing, to run efficiently on FPGA architectures
- *Technologies/Tools: C/C++, OpenCL, CUDA, Altera Stratix V*

Finite Element Based Structural Analysis Software
Collaborative Project with the Department of Civil Engineering

- A novel software for structural analysis based on a research conducted by the Department of Civil Engineering University of Peradeniya
- *Technologies/Libraries: Python, Numpy, Matplotlib, MATLAB*

Auction Server

- Implemented a multi-client, highly scalable trading platform for the stock market
- *Technologies/Specifications: Java, Multi-threading, Java Sockets, OOP*

Real-Time Vehicle Identification Using Image Processing

- An autonomous highway ticketing system
- *Technologies/Protocols: OpenCV, Python, PyQt5, MySQL, HTTP*

ML Model to Make Predictions

- Classification problem using an unknown Dataset
- *Technologies/Libraries: Python, Matplotlib, Numpy, Weka, Pandas*

(IIoT) Intelligent Road Traffic Controlling System

- Multi-junction traffic controlling system based on a hardware/software co-design
- *Technologies/Tools/Protocols: MQTT, Arduino C, Python, JavaScript, HTML, CSS, MySQL, Raspberry pi, ESP32*

Spreader Machine Automation

- Real-time data gathering embedded system using IoT capabilities for Spreader machine to overcome the inefficiency of manual data entering
- *Technologies/Protocols: MQTT, Arduino C, HTML, CSS, JavaScript, MySQL*

WORK EXPERIENCE

Intern - R&D Accelerated Systems
LSEG Technology, Sri Lanka
📅 April 2021 – Present

Casual Instructor
Department of Computer Engineering, University of Peradeniya
📅 Feb 2020 – Oct 2020

Technical Consultant
IgniterSpace, Kandy
📅 Jan 2019 – Feb 2020

EDUCATION

BSc in Computer Engineering
University of Peradeniya   🎓 GPA: 3.70/4
📅 Nov 2016 – Present

Dharmaraja College, Kandy
G.C.E. Advanced Level Examination
📅 Jan 2001 – Aug 2014

CERTIFICATES

- **AWS Fundamentals: Going Cloud-Native**
  Conducted by: Amazon Web Services
- **Introduction to Big Data and Hadoop**
  Conducted by: Engr. Palash Gupta, OSS/CEM/Big Data
- **Building Scalable Java Microservices with Spring Boot and Spring Cloud**
  Conducted by: Google Cloud
- **Machine Learning**
  Conducted by: Stanford University
- **Neural Networks and Deep Learning**
  Conducted by: DeepLearning.AI
- **Data Center Virtualization and Cloud Computing Infrastructure** Conducted by: Bangladesh Research and Education Network

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

ACHIEVEMENTS

🏆 **Winner in ACES Hackathon 2019**
Intra-University Hackathon. Project 'tinyPod' was selected as the winner in the Medical & Healthcare Category

🏆 **1st Runner-up in Pre-Coders v7.0 2018**
Intra-University programming competition. Team JPAC

🏆 **1st Runner-up in Pre-Xtreme v1.0 2019**
Intra-University programming competition. Team JPAC

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

🏆 **Most Popular Idea of ACES Hackathon 2018**
Project 'Data over Sound' nominated as the most popular idea of ACES Hackathon 2018

🏆 **Winners in Dialog App Challenge 2017**
National level inter-University app challenge

🏆 **Finalists in SLRC 2019, Robot: Flying Dutchman**
Inter University robotics competition hosted by University of Moratuwa

🏆 **Semi-finalists in Xbotix 2018, Robot : Minotaur**
Inter-University robotics competition hosted by University of Ruhuna

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

🏆 **27th County Rank & 476th Global Rank**
IEEEXtreme 13.0

🏆 **41st County Rank & 528th Global Rank**
IEEEXtreme 12.0

🏆 **65th County Rank & 604th Global Rank**
IEEEXtreme 11.0

MINI PROJECTS

- **Vocab -** An Android app to save new English words
  Technologies: Flutter, Firebase
- **FleetApp -** Self-learning project
  Technologies: Spring Boot, MySQL
- **VoCe -** Multi-user peer to peer audio conferencing application
  Technologies: Java
- **Who is Speaking -** A speaker recognition system with basic signal processing techniques
- **4bit-Arithmetic and Logic Unit -** A Verilog implementation of a 4-bit ALU
- **Pera SAP -** 8-bit Minimum Computer (AKA Simple As Possible Computer - SAP) made from simple logic ICs, flip-flops and a few memory modules

REFEREES

Prof. Roshan Ragel
Department of Computer Engineering,
University Of Peradeniya,
Sri Lanka
✉ roshanr@ce.pdn.ac.lk

Dr. Suneth Karunarathne
Department of Computer Engineering,
University Of Peradeniya,
Sri Lanka
✉ namal@eng.pdn.ac.lk

SKILLS

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

High Performance Computing
- CUDA, OpenCL
- Experience in Vitis-Xilinx

Database
- MySQL

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

Cloud Computing/Internet of Things
- AWS
- MQTT Protocol, MQTT Broker Setup, Network Design

Distributed Frameworks
- Hadoop

Front End/Back End
- HTML, CSS
- Spring Framework

Operating Systems
- Linux, Windows

Development/Other
- Firebase
- Flutter
- GitHub/Bitbucket

EXTRACURRICULAR

- **Toastmaster** - Hill Capital Toastmasters Club
- **Troop leader** - 1st Kandy Dharmaraja scout group, troop number 7
- **Member** - Science 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
- **Member** - The Ceylon University Dramatic Society of University of Peradeniya

VOLUNTEERING

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