



IMESH BALASURIYA

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PROFILE

A third-year Computer Engineering undergraduate with a passion for problem solving and a strong interest in Computer Architecture and Vision.

SKILLS

Programming Languages

C, Java, Python

Hardware Programming

Verilog HDL, AVR C, ARM Assembly

Web Development

HTML/CSS, JavaScript, Node, React, Express

DBMS

SQL, MongoDB

Developer Tools

Linux (Bash shell), Git, Cloud Service Platforms (AWS, GCP)

Libraries

OpenCV, NumPy, Matplotlib

EDUCATION

BSc. Eng.(Hons.) Computer Engineering (Reading)

University of Peradeniya

Nov 2018 - Present

Current GPA: 3.77/4.00

G.C.E. Advanced Level Examination

Ananda College - Colombo 10

2017

Combined Mathematics (A), Physics (B), Chemistry (A)

PROJECTS

QuickPark – E-Parking System

2021 - Present

Node, Express, MongoDB, React/React Native, Python, AWS

Group |  

A fully-automated parking system consisting of a web-based portal for the car park owners, a mobile app for the car park users, and two IoT units for vehicle identification and parking spot allocation.

Contribution: Proposing the project, Web frontend, Mobile app, Spot assignment algorithm, MQTT communication, IoT unit hardware designs

Analytical Software for Next

Generation Skim Sequencing Data

2022 - Present

Java, Maven, JavaFX

Group |  

Created a standalone desktop application for analysis of Chloroplast, Mitochondria and ITS region NGS data.

Contribution: Setup of pipelines, UI design, CLI tool integration

Reconstruction of Highly-Degraded

License Plate Images

2022

Python, OpenCV, Tesseract-OCR

Group | 

Demonstrated the effectiveness of traditional image processing techniques in the reconstruction of low-resolution license plate images obtained from CCTV footage.

Techniques: EDSR upscaling, Fourier domain analysis, Degradation modelling (De-blur and De-noise), OCR

Compiler for COOL Language

2022

C++, Flex, Bison

Group | 

Implemented a 4-stage compiler for the COOL programming language comprised of a lexical analyzer, parser, semantic analyzer, and a code generator that generates MIPS assembly code.

Techniques: Finite State Machines, Abstract Syntax Trees, Regular Expressions, Context-Free Grammars

EXTRA-CURRICULAR

ACES (Association of Computer Engineering Students)

Faculty of Engineering,
University of Peradeniya

Secretary (Current)	2021/2022
Assistant Secretary	2020/2021
Committee Member	2019/2020

Rotaract Club of University of Peradeniya

University of Peradeniya

Vice President of Public Relations	2021/2022
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Director of Public Relations	2020/2021
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Active Member	since 2019
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REFERENCES

Dr. Isuru Nawinne

isurunawinne@eng.pdn.ac.lk

Senior Lecturer,
Dept. of Computer Engineering,
Faculty of Engineering,
University of Peradeniya, Sri Lanka

Dr. Asitha Bandaranayake

asithab@eng.pdn.ac.lk

Senior Lecturer,
Dept. of Computer Engineering,
Faculty of Engineering,
University of Peradeniya, Sri Lanka

8-bit Single Cycle Processor

2020

Verilog HDL

Group | 

Designed an 8-bit single cycle processor with a MIPS-style instruction set comprised of an ALU, a register file and control logic along with a Harvard memory architecture for the CPU including associated cache memory.

Fractal Generator

2020

Java, Swing, Multi-Threading

Individual

Designed a multi-threaded GUI app that generates the Mandelbrot and Julia sets according to user specifications.

ACHIEVEMENTS/CERTIFICATIONS

Hacktitude 2022 Inter-University

Hackathon | 99x

Jan 2022

37th place out of 200 teams | Team of Three

Technologies: Node.js/Express, Javascript, EJS, SQLite, Git

IEEEExtreme 16.0 Coding Competition

Oct 2022

713th out of 6,000+ teams worldwide (26th in SL) | Team of Three

iCS Hack The World 2.0 CTF Competition

Dec 2021

2nd Runner-Up | Team of Four

Technologies: Steganography tools (opensteg, zsteg), Cryptography tools (CyberChef, hashcat), Linux (Bash shell), Chrome Developer Tools

Linux Administration and DevOps

Engineering Training Program | WSO2

Jan 2022

Selected as one of 100 participants from 1,500+ registrants

Technologies: Linux (Bash shell), Google Cloud Platform, Web Servers (Apache, Nginx), Elasticsearch, Ansible, etc.

Introduction to Cybersecurity Tools &

Cyber Attacks | IBM

May 2020

Certificate in Business Accounting | CIMA

Nov 2018

EXPERIENCE

Casual Instructor (Teaching Assistant) 2021 - Present

Faculty of Engineering, University of Peradeniya

Involved in conducting lab sessions for undergraduates at the Department of Computer Engineering under the following courses.

- CO221 - Digital Design
- CO224 - Computer Architecture
- CO323 - Computer Communication Networks II
- CO325 - Computer and Network Security