

# DININDU THILAKARATHNA

Sri Sumanawansa Mawatha, Kebillewela South, Bandarawela, Sri Lanka

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## INTERESTS

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- Robotics and Automation
- Algorithmic Programming
- Embedded Systems
- Mobile Application Development
- Web Application Development

## EDUCATION

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### University of Peradeniya

Undergraduate in BSc. Engineering(Hons.)

*2021 Apr - Present*

**GPA: 3.893/4.00**

### Bandarawela Central Collage, Bandarawela

G.C.E. Advanced Level Examination

District Rank - 10, Island Rank - 471

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

*2003 - 2016*

**Z-Score: 2.0702**

G.C.E. Ordinary Level Examination

A passes for all 8 subjects, B pass for English Literature

## SKILLS

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### Programming Languages

Python, Java, JavaScript, C, C++

### Numerical Computing Packages

MATLAB, Octave, Numpy

### Hardware Programming

Arduino, Verilog HDL

### Mobile Application

Flutter, Android Studio

### Web Application

Python Django, PHP Laravel

### 3D Modelling

Fusion360, Solid Works, AutoCad

### Practical Skills

Soldering, PCB design and development

### Languages

English, Sinhala

## ACHIEVEMENTS

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### IEEEEXTREAM 14.0

(Country Rank - 9, World Rank - 124)

Task : Algorithmic Programming Competition

*2020*

### Google Code Jam

Selected to round 2 (world rank - 3847)

Task : Algorithmic Programming Competition

*2020*

### Google KickStart

Round A (world rank - 2777)

Task : Algorithmic Programming Competition

*2020*

### UOJ Cordors v8.0

Second Runners-up

Task : Inter University Algorithmic Programming Competition

*2019*

<b>Pre-Extreme</b>	2019
Second Runners-up	
Task : Intra University Algorithmic Programming Competition	
<b>IEEEEXTREAM 13.0</b>	2019
(Country Rank - 7, World Rank - 172)	
Task : Algorithmic Programming Competition	
<b>ACES Corders v8.0</b>	2019
Country Rank - 5 (more than 120 teams)	
Task : Inter University Algorithmic Programming Competition	
<b>ACES Hackathon</b>	2019
Finalists	
Project : SAFERO (Safe Route Escape System During Flood)	
<b>SLIIT Overnight Hackathon</b>	2019
Finalists	
Project : Algorithmic Programming Competition	
<b>SLIIT CODEFEST</b>	2019
Merit Award	
Project : You See World (Personal Guidance System to Blind people)	
<b>HACKDEV YOUTH SOCIAL INNOVATION CHALLENGE</b>	2019
Selected to final teams (Get an opportunity and funds to develop our project as a product)	
Project : You See World (Personal Guidance System to Blind people)	
<b>IEEE ADVANCING TECHNOLOGY FOR HUMANITY HUMANITARIAN TECHNOLOGY PRODUCT COMPETITION, GENERAL TRACK</b>	2018
Runners UP	
Project : You See World (Personal Guidance System to Blind people)	
<b>ACES Corders v7.0</b>	2018
Country Rank - 7 (more than 120 teams)	
Task : Inter University Algorithmic Programming Competition	

## PROJECTS

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<b>Obstacle robot swarm for swarm robotic project</b>	2020-2021
<ul style="list-style-type: none"> <li>· swarm robos.</li> <li>· <i>Technologies: Python, OpenCV, numpy, MQTT, JavaScript, GRPC</i></li> <li>· <i>Techniques: Image Processing, stochastic gradient descent, Encryption</i></li> </ul>	
<b>Crypto currency ticker site</b>	2020-2021
<ul style="list-style-type: none"> <li>· Crypto currency to fiat currency conversion sites with high refresh rates And analysing trends real time</li> <li>· <i>Technologies: Python, MQTT, JavaScript, CSS, Web Sockets, Nginx, Python Django</i></li> <li>· <i>Techniques: Real time web socket connections to clients for fast refresh rates</i></li> </ul>	
<b>Vegetable delivery system Seller App (Elavalu Gowiya on Playstore)</b>	2020-2021
<ul style="list-style-type: none"> <li>· Vegetable delivery system, Seller registration, Item Management and Order management</li> <li>· <i>Technologies: Flutter, Firebase, Fire-store, Cloud Functions</i></li> <li>· <i>Techniques: Firebase and Firestore based App for Android and IOS</i></li> </ul>	

## **Design and installation of automation system and the Electrical System for Disinfection Chambers for Diyathalawa Base Hospital, Bandarawela Hospital**

2020

- Atmel microcontrollers, Solenoid valves and Contactors for pump
- *Technologies: C++ Atmel Microcontrollers, Custom PCB Design*
- *Techniques: Embedded systems, Micro controller Programming, 220v Pump Controlling using contactors*

## **Automatic Water tank filling system to Hotel ALOFT Grand, Ella**

2020

- Intelligent tank filling system, tanks located in three height levels. Controlling water pumping and solenoid valves to direct water to tanks necessary
- *Technologies: C++ Atmel Micro controller, Custom PCB design*
- *Techniques: Embedded systems, Micro controller Programming, 220v Pump Controlling using contactors*

## **Verilog Based CPU**

2020

- Designing of a 32-bit CPU which supports simple instructions with caching.
- *Technologies: Verilog*
- *Techniques: Computer Architecture*

## **8-bit Computer**

2020

- Design and building a 8-bit computer.
- *Technologies: Embedded system, Integrated circuits*
- *Techniques: Computer Architecture*

## **Escape route generation system during floods**

2019

- Generates escape routes during floods by estimating water levels in rivers and inundation maps.
- *Technologies: Flutter, Google Maps Direction API*
- *Techniques: Shortest Path and optimization algorithms*

## **Personal Guidance System for Blind Person**

2019

- Stick with sensors and chest mount camera to process images, notify the details about surrounding to the blind person through a vibration belt. And a user friendly app with voice control capabilities ( to find the stick if misplaced or notify relatives if the blind person needs help ).
- *Technologies: Arduino Microcontroller, Raspberry Pi, Ultrasonic Sensors, Gyroscope, OpenCV, TensorFlow*
- *Techniques: Sensor Calibration, Vibration Pattern Optimization, Android Studio, Bluetooth Communication*

## **Various Other Hobby/Course Projects**

2018-2019

- Analog Line Follower (PD Controller based), Logic Gate level implementation of a 4-digit pass-code lock, Smart home system with raspberry PI, Wire Bending Machine (CNC)
- *Technologies: Analog and Digital Electronics, Arduino*

## EXTRA-CIRRICULAR

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Casual Instructor, University of Peradeniya (2020/2021)

Active member ACES club of the University of Peradeniya (2020 - Present)

Active member of the Hacker's club of the University of Peradeniya (2020 - Present)

Active member Science Society, Bandarawela Central College (2014 - 2016)

## OTHER INTERESTS AND HOBBIES

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3D modeling and digital art Enthusiast.

Designing Embedded systems.

Music

Athletics

## REFERENCES

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**Prof. Roshan G. Ragel**

Professor, Dept. of Computer Engineering

University of Peradeniya

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**Dr. Isuru Nawinne**

Senior Lecturer, Dept. of Computer Engineering

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