

# 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 Computer Engineering BSc. Engineering(Hons.)

*Top of 60 Computer Engineering Students in E/16 batch*

*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

8 A Passes, 1 B Pass

## ENTREPRENEURSHIP

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### Tronicode Engineering (PVT) Ltd (Director, Founder)

*Mobile application, web development and embedded system development company*

*2020 - Present*

#### Projects

- Gedarata Elavalu App ( on PlayStore )
- Disinfection Chambers Electrical and control system (Diyathalawa base hospital)
- Drone control system project

*Facebook - <https://www.facebook.com/tronicode.engineering>*

## 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

### PCB Related

Soldering, PCB design and development

### Languages

English, Sinhala

## ACHIEVEMENTS

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<b>IEEEExtreme 14.0</b> (Country Rank - 9, World Rank - 124) Task : Algorithmic Programming Competition	<i>2020</i>
<b>Google Code Jam</b> Selected to round 2 (world rank - 3847) Task : Algorithmic Programming Competition	<i>2020</i>
<b>Google KickStart</b> Round A (world rank - 2777) Task : Algorithmic Programming Competition	<i>2020</i>
<b>UOJ Cordors v8.0</b> Second Runners-up Task : Inter University Algorithmic Programming Competition	<i>2019</i>
<b>Pre-Extreme</b> Second Runners-up Task : Intra University Algorithmic Programming Competition	<i>2019</i>
<b>IEEEExtreme 13.0</b> (Country Rank - 7, World Rank - 172) Task : Algorithmic Programming Competition	<i>2019</i>
<b>ACES Cordors v8.0</b> Country Rank - 5 (more than 120 teams) Task : Inter University Algorithmic Programming Competition	<i>2019</i>
<b>ACES Hackathon</b> Finalists Project : SAFERO (Safe Route Escape System During Flood)	<i>2019</i>
<b>SLIIT Overnight Hackathon</b> Finalists Project : Algorithmic Programming Competition	<i>2019</i>
<b>SLIIT CODEFEST</b> Merit Award Project : You See World (Personal Guidance System to Blind people)	<i>2019</i>
<b>HACKDEV YOUTH SOCIAL INNOVATION CHALLENGE</b> 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)	<i>2019</i>
<b>IEEE ADVANCING TECHNOLOGY FOR HUMANITY HUMANITARIAN TECHNOLOGY PRODUCT COMPETITION, GENERAL TRACK</b> Runners UP Project : You See World (Personal Guidance System to Blind people)	<i>2018</i>
<b>ACES Cordors v7.0</b> Country Rank - 7 (more than 120 teams) Task : Inter University Algorithmic Programming Competition	<i>2018</i>

## PROJECTS

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### Obstacle robot swarm for swarm robotic project

2020-2021

- swarm robos.
- *Technologies: Python, OpenCV, numpy, MQTT, JavaScript, GRPC*
- *Techniques: Image Processing, stochastic gradient descent, Encryption*

### Crypto currency ticker site

2020-2021

- Crypto currency to fiat currency conversion sites with high refresh rates And analysing trends real time
- *Technologies: Python, MQTT, JavaScript, CSS, Web Sockets, Nginx, Python Django*
- *Techniques: Real time web socket connections to clients for fast refresh rates*

### Vegetable delivery system Seller App (Elavalu Gowiya on Playstore)

2020-2021

- Vegetable delivery system, Seller registration, Item Management and Order management
- *Technologies: Flutter, Firebase, Fire-store, Cloud Functions*
- *Techniques: Firebase and Firestore based App for Android and IOS*

### 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, Costom 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*

## **CO-CURRICULAR**

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Casual Instructor, University of Peradeniya

- CO224 - Computer Architecture

*2020 - 2021*

Sessions on algorithmic programming, Hackers Club, University of Peradeniya

*2020 - 2021*

## **EXTRA-CURRICULAR**

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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

Univeristy of Peradeniya

roshanr@eng.pdn.ac.lk

### **Dr. Isuru Nawinne**

Senior Lecturer, Dept. of Computer Engineering

Univeristy of Peradeniya

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