DININDU THILAKARATHNA

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PROFILE

A computer Engineering undergraduate with a passion to learn and understand the theory and motivation to work on practical projects and produce results. Experienced in design, development, and implementation of software and hardware solutions. I am a self-motivated student who is currently doing well in both academics and extra projects. I have initiated a Startup, TroniCode Engineering (Pvt) Ltd, that builds hardware and software solutions for business applications of small to medium scale businesses. The work I have done was possible because of my passion and the capability of solving engineering problems with my skills and knowledge. With my leadership, management, and communication skills I can take responsibility and work with minimal supervision.

INTERESTS

Robotics and Automation	Computer Architecture	Embedded Systems
Mobile Application Development	Web Application Development	Machine Learning and AI
Algorithmic Problem Solving	3D Modeling	PCB Designing

EDUCATION

University of Peradeniya *2017 Nov - Present*
Undergraduate in Computer Engineering BSc. Engineering(Hons.) **GPA: 3.90/4.00**
2nd of 60 Computer Engineering Students in E/16 batch

Bandarawela Central Collage, Bandarawela *2003 - 2016*
G.C.E. Advanced Level Examination
District Rank - 10, Island Rank - 471 **Z-Score: 2.0702**
Physics (A), Combined Mathematics (A), Chemistry (B)

ENTREPRENEURSHIP

Tronicode Engineering (PVT) Ltd (Director, Founder) *2020 - Present*
Mobile application, web development and embedded system development company

Projects

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

SKILLS

Programming Languages	Python, Java, JavaScript, C, C++, Dart
Procedural Programming	ARM Assembly
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

PROJECTS

Project Repositories - https://dininduwm.github.io#projects

Obstacle robots for swarm robotic project *2020-2021*

- Obstacle bot capable of positioning themselves without colliding with each other for the existing swarm robotic platform.
- *Technologies: Python, OpenCV, numpy, MQTT, JavaScript, GRPC*
- *Techniques: Image Processing, stochastic gradient descent, Encryption*

Crypto currency ticker site *2020-2021*

- Crypto currency to fiet 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 fully automation system for Disinfection Chambers for Diyathalawa Base Hospital, Bandarawela Hospital *2020*

- Atmel microcontrollers, Solenoid valves and Contactors for pump
- *Technologies: C++ Atmel Microcontollers, 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*

Guidance Assisting System for visually impaired persons *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*

ACHIEVEMENTS

IEEExtreme 14.0 *2020*
(Country Rank - 9, World Rank - 124 more than 2200 teams)
Task : Algorithmic Programming Competition

Google Code Jam *2020*
Selected to round 2 (world rank - 3847 more than 96,000 teams)
Task : Algorithmic Programming Competition

Google KickStart *2020*
Round A (world rank - 2777 more than 100,000 teams)
Task : Algorithmic Programming Competition

UOJ Corders v8.0 *2019*
Second Runners-up (more than 100)
Task : Inter University Algorithmic Programming Competition

Pre-Extreme *2019*
Second Runners-up (more than 30 teams)
Task : Intra University Algorithmic Programming Competition

IEEExtreme 13.0 *2019*
(Country Rank - 7, World Rank - 172 more than 4000 teams)
Task : Algorithmic Programming Competition

ACES Corders v8.0 *2019*
Country Rank - 5 (more than 120 teams)
Task : Inter University Algorithmic Programming Competition

ACES Hackathon *2019*
Finalists
Project : SAFERO (Safe Route Escape System During Flood)

SLIIT Overnight Hackathon *2019*
Finalists
Project : Algorithmic Programming Competition

SLIIT CODEFEST *2019*
Merit Award
Project : You See World (Personal Guidance System to Blind people)

HACKDEV YOUTH SOCIAL INNOVATION CHALLENGE *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)

IEEE ADVANCING TECHNOLOGY FOR HUMANITY HUMANITARIAN TECHNOLOGY PRODUCT COMPETITION, GENERAL TRACK *2018*
Runners UP
Project : You See World (Personal Guidance System to Blind people)

ACES Corders v7.0 *2018*
Country Rank - 7 (more than 120 teams)
Task : Inter University Algorithmic Programming Competition

CO-CURRICULAR

Casual Instructor, University of Peradeniya

- CO321 - Embeded Systems *2021 - present*
- CO224 - Computer Architecture *2020 - 2021*

Sessions on algorithmic programming, Hackers Club, University of Peradeniya *2020 - 2021*

EXTRA-CURRICULAR

Active member ACES of the University of Peradeniya *2020 - preset*

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

3D modeling and digital art Enthusiast.

Designing Embedded systems.

Music

Athletics

REFERENCES

Prof. Roshan G. Ragel
Professor, Dept. of Computer Engineering
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