

K Viraj Dilupa

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Sri Lanka

OBJECTIVE

Motivated Mechanical Engineering undergraduate with a solid background in mechanical design, thermodynamics, automation, manufacturing processes and programming. Skilled in CAD software and 3D modeling, with an interest in applying knowledge to solve practical engineering problems. Demonstrates strong problem-solving skills, attention to detail and the ability to work effectively in a team. Actively seeking an internship to gain hands-on experience and contribute to innovative engineering solutions.

EDUCATION

- **University of Moratuwa** March 2022 - Present
Bachelor of the Science of Engineering (Hons.) Moratuwa, Sri Lanka
 - Department : Mechanical Engineering
 - GPA : 3.6/4.00 (Upto 7th semester)
 - Expected Graduation : 2026 June
- **University of Moratuwa** January 2023 - 2024
Bachelor of Information Technology (External) Moratuwa, Sri Lanka
 - Diploma in Information Technology
- **Taxila Central College** October 2020
G.C.E. Advanced Level Examination Horana, Sri Lanka
 - Stream : Physical Science (3A's for Combined Mathematics, Physics and Chemistry)
 - Z Score : 2.2825
 - District Rank : 15 (Kalutara District)
 - Island Rank : 374

PROJECTS

- **Automated Water Management System : Managed and controlled the water supply system** July 2023
Tools: Arduino programming, sensors and microcontrollers
 - Manage extra water storage and supply when the main system is down.
 - Recorded data on water flow rate and consumption.
 - Integrated pH measurement with automatic chemical adjustment to maintain pH within a desired range.
 - Added a backup filtration system that automatically switches in case of filter failure.
- **Reverse Engineering Project on a Toaster with 3D Modeling** March 2024
Tools: SolidWorks, Manufacturing techniques and methods for material identification and sorting
 - Conducted an analysis to identify and categorize materials for sorting.
 - Suggested manufacturing techniques for producing parts efficiently.
 - Optimized toaster functionality through design improvements, performance and reliability.
 - Performed detailed calculations to identify key areas for optimizing functionality.
- **Store Management System for Manufacturing company with Database Management system** July 2024
Tools: MySQL and C# windows form application programming
 - Developed a user-specific login system with distinct access levels for employees, supervisors and management.
 - Implemented a real-time updated database to ensure current information availability.
 - Enabled secure access through username and password authentication.
 - Integrated a feature allowing users to request parts or equipment from the shop remotely via the system.
 - Designed a user-friendly interface for streamlined functionality and ease of data access and discussion.

• External Gearbox for the PTO shaft of a Tractor in the Agricultural Industry with 3D Model

September 2024

Tools: Solid Edge, MatLab and Auto CAD

- Designed and implemented an external gearbox with 4 forward gears and a reverse gear to extend the range of applications powered by a tractor's PTO shaft.
 - Performed calculations to determine optimal gear ratios, shaft distances, and gear modules by analyzing applied torques, power outputs, bending moments, and axial loads for enhanced performance.
 - Designed appropriate shaft diameters for the gearbox, considering operational stresses.
 - Created detailed 3D models of all gearbox components and the gear-shifting mechanism using CAD software.
- **Design and development of domestic food waste dryer, crusher with pelletizer (University final year project)** May 2025
- Tools: Solid Works, Ansys, AutoCAD
- Developed a prototype converting wet food waste into biomass fuel, significantly reducing waste volume.
 - Optimized drying rates and processing speeds to maximize the fuel's net calorific value.
 - Ensured hygienic operation via enclosed, corrosion-resistant design and validated fuel combustion properties.

INDUSTRIAL EXPERIENCE

• Industrial Internship - Unilever Sri Lanka LTD

December 2024 to July 2025

Horana Manufacturing Site

- Exposure to real world engineering practices and industrial operations. Involved projects are detailed in the attached service letter, provided as a reference at the end of this CV.

SKILLS

- **Programming Languages** : Java, C#, C++, Python, HTML/CSS
- **Database Systems** : MySQL
- **3D modeling** : Solidworks, Solid Edge, CAD
- **Mathematical & Statistical Tools** : MatLab
- **Engineering simulation software** : Ansys, FluidSim
- **Plant and process management** : Siemens tecnomatix plant simulation
- **Industrial processes and machinery** : PLC programming - Ladder logic

HONORS AND AWARDS

• Merit award of Physics

October 2018

Taxila Central College, Horana

- Annual prize giving and colours award ceremony.

LEADERSHIP EXPERIENCE

• Lead yourself program

2020

Sasnaka Sansada foundation - Sri Lanka

- Developing a winning mindset through personal leadership

VOLUNTEER EXPERIENCE

• EXMO Exhibition

July 2023

University of Moratuwa - Sri Lanka

- Department facilitator for Mechanical in EXMO 2023. This was an exhibition focused on showcasing history and modern trends in the engineering field to the general public.

PROFESSIONAL MEMBERSHIPS

- **Institution of Mechanical Engineers**, Membership ID : 80652159
- **Institution of Engineers Sri Lanka (IESL)**, Student Membership ID : S-30234
- **ASHRAE Professional association**, Student Membership ID : 8611897

CERTIFICATIONS

- **Web designing**
- **Python for beginners**
- **Python Programming**
- **The fundamentals of digital marketing**

ADDITIONAL INFORMATION

Languages : Sinhala , English

Interests : Energy and Automation Engineering , Sea Swimming

REFERENCES

1. **Dr.Lihil Uthpala Subasinghe**

B.Sc. Eng.(Moratuwa,Sri Lanka) ,
P.h.D. Li-ion/Na-ion Battery Technology (National University of Singapore,
Senior Lecturer,
Department of Mechanical Engineering,
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2. **Dr. Manoj Ranaweera**

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18 June 2025

TO WHOM IT MAY CONCERN

This is to certify that Mr. Viraj Ranathunga was at Unilever Sri Lanka Limited on a trainee contract from 16 December 2024 to 15 June 2025, designated as an Industrial Trainee – Supply Chain attached to the Supply Chain Department. Following is a summary of his assignments during his contract period:

- Assisted in modifying the line 5 robotic case packer for the Dove variant by performing electrical troubleshooting(sensors,pneumatics and automated process), mechanical adjustments and designing a pickup head with SolidWorks 3D modeling and analysis.
- Improved the efficiency of the overhead conveyor system by optimizing sensor and guard placements, updating PLC logic for emergency stops and roller blocker mechanism functionality using Siemens Tecnomatix Plant Simulation.
- Implemented a hygienic multi-pipe flow plate system with integrated CIP features to reduce ramp-up time, enhance line efficiency and minimize product aeration during pumping.
- Assisted in developing a nano area conveyor system with a puck return mechanism by analyzing production needs, optimizing layouts in AutoCAD and integrating conveyor systems for better space utilization.
- Modified the Cologne Plant filler by integrating a pneumatic capping mechanism with PLC control logic and safety compliance for flammable environments including simulation in FESTO FluidSIM.
- Commissioning of the new pouch machine in the Nano area, including equipment installation, AutoCAD plans, relocation of product pipes and pigging unit and conveyor designs.

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- Elimination of SOC's and HTA points in the production line by resolving minor stoppages, contamination risks to maintain hygiene standards.
- Installation of SMC pneumatic air management modules, reducing compressed air consumption in the case packer's venturi system.

This letter is being issued at the request of Mr. Viraj Ranathunga. Should you need any clarifications or further details, please contact the undersigned.

Yours faithfully

UNILEVER SRI LANKA LIMITED

Nadee Hemachandra

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Head of People Experience – Sri Lanka