RATHEES THILLAINATHAN

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PERSONAL STATEMENT

A highly motivated Mechanical Engineer with expertise in **CAD/CAM design, automotive engineering,** and a deep passion for **agricultural** innovation.

EDUCATION

Bachelor of Science in Mechanical Engineering
University of Moratuwa, Sri Lanka CGPA: 3.15
January 2020 - May 2024 |

G.C.E Advanced Level
Kokuvil Hindu College, Z-Score: 1.9943
Mathematics:A Physics: A, Chemistry: A
January 2016 - August 2018

SKILLS AND INTERESTS

Design and FEA Softwares	- Solid Works, NX, Solid Edge, Auto CAD, ANSYS (Static Structural)
Automation Softwares	- Step 7 PLC, Yokogawa PLC, Python, C++, anaconda python
Interests	- Product Development, Design, Automobile, CAD/CAE/CAM, Automation, Finite Element Analysis, Optimization, Modeling and Simulation

WORK EXPERIENCE

R&D Engineer at ThermalR Industries, January 2023- June 2023
No 238 Kesbewa Road, Boralesgamuwa 10290

1. **Electric Motorbike Chassis Design and Analysis** February 2023 - June 2023
   Major Project as a part of curriculum : Tools- ***Solid Works, Ansys***

· Led the design of an electric motorbike chassis for local use. Used SolidWorks for detailed engineering, considering local conditions and preferences.
· Conducted FEA analysis with ANSYS to ensure safety and performance.
· Made design adjustments to enhance stability and cost-effectiveness.

2. **Manufactured the Developed chassis Design** April 2023 - June 2023
   Tools- ***Solid Works, Ansys***

· Oversaw the manufacturing process of the chassis design, overseeing quality control and addressing any issues that arose.
· Ensured that production met design standards and was cost-effective without sacrificing quality.
· Completed manufacturing phase within 2 months

3. **Design and Implementation of Rotating Platform for Peregrine bike** January 2023 - February 2023
   Minor Project as a part of curriculum: Tool- ***Solid Edge***

· Designed the stage considering the Weight and Wheel base of the Bike.
· Performed FEA analysis to minimise the Material and Cost.
· Selected the suitable Motor considering the rotating weight and rpm.

PROJECTS

1. **Design and Development of Automated Vegetable Transplanting Machine** July 2023 - Present
   Final Year Project: Tool- ***Solid Works***

· Designed a Transplanting Machine for local farmers to grow the seedlings in plant nurseries.
· CAD design for each part and mechanism with proper calculations.
· FEA for chassis and other components where the forces act.
· designed and developed a prototype with the same mechanism but in a small scale to ensure the mechanism is working properly.

2. **Design and development Garbage sorting system** July 2023
   Mechatronics Project: Tool- ***Solid Works***

· Designed a high-performing low-cost conveyor belt to sort the garbage.
· Fabricated using Arduino Uno, metal-detecting sensors, ultrasonic sensors, and servo motors.
· Wood-made sorting arm was tested with FEA using solid-work simulation.

3. **Implementation of Cooling system using SCADA** July 2023
   Mechatronics project: Tools- ***Python, C++***

· Built and installed the system using a cooling fan, temperature sensor, Potentiometer and ESP 32 were the apparatus used
· Created a Graphical user interface using the Tkinter library in Python.
· Log-in the window for the user and admin to make the interface more secure, Manual Mode and Auto Mode is available. it can shift at any time.

4. **Coconut Splitting machine Project** July 2023
   Industrial product design project: Tool- NX

· Generated Several Concepts and selected a suitable one using the concept sorting method.
· Designed each mechanism with proper calculation of parameters.
· Fabricated the product using University workshops.

5. **Design of Gearbox for tree climbing machine** December 2022
   Machine Design project: Tool- ***Solid Edge***

· Required power, each gear wheel's diameter, shaft's Diameter and required bearing numbers were calculated according to the needs.
· Designed input shaft, main shaft and countershaft according to the calculation.
· Gearbox casing design and assembled them to get the final gearbox.

COURSES AND ACTIVITIES

Courses

- Arduino Platform and C Programming : Link
- Introduction to Solid Edge : Link
- Embedded system design

Activities

- Participated in Provincial level Chess competition .
- Clubs: IEEE, IMechE and TLA.

REFERENCE

Dr. Sasiranga De Silva

- Former lecturer, University of Moratuwa.
- Founder and CEO of ThermalR Industries.
- ✉ sasiranga@gmail.com
- ✆ 0777358765

Mr.Ramesh Warusaritharana

- Senior Engineer, ThermalR Industries
- ✆ 076 862 7572