



# RATHEES THILLAINATHAN

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in [rathees-thillainathan](#)

## PERSONAL STATEMENT

A highly motivated Mechanical Engineer with expertise in **CAD design, FEA analysis, and automotive engineering**, currently excelling as an **Executive in PU Engineering at Midas Safety Lanka**. Passionate about innovation, problem-solving, and optimizing engineering solutions for efficiency and safety.

## EDUCATION

### Bachelor of Science in Mechanical Engineering(Hons)

University of Moratuwa, Sri Lanka CGPA: 3.17/4.0  
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 Software Platforms Automation Software Platforms Interests

- SolidWorks, NX, Solid Edge, AutoCAD, ANSYS, Abaqus  
- Step 7 PLC, Yokogawa PLC, Python, C++, Anaconda Python  
- Product Development, CAD Design, Automobile, Automation, Finite Element Analysis, Optimization.

## WORK EXPERIENCE

**R&D Engineering Intern at ThermalR Industries,**  
*No 238 Kesbewa Road, Boralesgamuwa 10290*

(Jan 2023 - Jul 2023)

- Electric Motorbike Chassis Design, FEA Analysis and Manufacturing** (Feb 2023 - Jul 2023)  
*Tools - SolidWorks, Ansys Operations- Lathing, Welding, Drilling, Cutting, 3D Printing*
  - Led the team in designing an electric motorbike chassis and other components, considering local conditions and user preferences..
  - Conducted FEA analysis in Ansys to ensure safety and performance, optimizing the design for stability and cost-effectiveness.
  - Oversaw the manufacturing process, ensuring quality control and addressing production challenge.
  - Ensured the prototype met design standards while maintaining cost efficiency, completing the manufacturing phase within two months.
- Design and Implementation of Rotating Platform for Peregrine Bike - 🌀** (Jan 2023 - Feb 2023)  
*Minor Project as a part of curriculum: Tool- Solid Edge*
  - Designed the stage considering the Weight and Wheelbase of the Bike.
  - Performed FEA analysis to minimize the Material and Cost.
  - Selected the suitable Motor considering the Moment of Inertia and rotating rpm.

## WORK EXPERIENCE

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### **Executive - PU Engineering at Midas safety (Pvt) Ltd.**

(Sep 2024 - Now)

*Lot. D17, Seethawaka EPZ, Avissawella*

#### **1. Responsible for PM Master plan- 2025**

(Jan 2025 - Now)

- Established a structured preventive maintenance (PM) schedule for all critical machinery and equipment.
- Analyzed crew availability, skill levels, and shift patterns to optimize workload distribution
- Priority-Based Categorization.
- Management of spare parts.

#### **2. Leader of 5S Implementation at PU Engineering Workshop and store Areas**

(Jan 2025 - Now)

- Designed the stage considering the Weight and Wheelbase of the Bike.
- Performed FEA analysis to minimize the Material and Cost.
- Selected the suitable Motor considering the Moment of Inertia and rotating rpm.

#### **3. Digitization of HSE Processes**

(Oct - Nov 2024)

- Identified and Streamlined HSE Processes
- Implemented Power BI Dashboards for Data Analysis for Compliance tracker, Action Tracker, Risk Assessment summary, Incident Records and Activity Calendar
- Integrated the PowerBI Dashboards with PowerApps for User-Friendly Access
- Designed and proposed Single Application for all the HSE Activities

#### **4. Conduct the Risk Assessment for All three Disposable Sections(HH,SF,DF)**

(Oct - Nov 2024)

- Observed all the Activities in the Factory Area for Hazard identification
- Conducted the Risk Assessment
- Developed Mitigation Strategies
- Discussed and got the Stakeholder's approval
- Developed and suggested the Safety action plan

## FREELANCING PROJECTS

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#### **1. Topology Optimization of Lower Control Arm of Volkswagen 2005 Model**

(Jul 2024 - Sep 2024)

*2024)*

*Tool - SolidWorks, Ansys*

- Conducted a literature review on topology optimization.
- Modeled the initial CAD design for the lower control arm (LCA) to fit the vehicle and imported the design into ANSYS.
- Calculated the loads and identified the supports.
- Conducted FEA analysis for the LCA using ANSYS static structural.
- Obtained the topology-optimized version of the LCA.
- Refined the design and validated it.

#### **2. PAW POD: Design and Development of Medical Box for Pets**

(Jan 2025 )

*Tool - SolidWorks*

- Designed actual and prototype models of a pet medical box.
- Built a low-cost prototype using local materials.
- Tested successfully in real-world conditions.

## ACADEMIC PROJECTS

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- 1. Design and Development of Automated Vegetable Transplanting Machine** (Jul 2023 - Jul 2024)  
*Final Year Project: Tool- SolidWorks*
  - Designed a Transplanting Machine for local farmers who grow the seedlings in plant nurseries.
  - Modelled CAD design for each components with Engineering calculations.
  - Conducted FEA Analysis for chassis and other components using Solidworks Simulations.
  - Developed a prototype with the same mechanisms but on a small scale to ensure all the mechanisms and control system are working as expected.
- 2. Design and Development of Garbage Sorting System - 🌀** (May 2023)  
*Mechatronics Project: Tool- SolidWorks*
  - Designed a high-performing low-cost conveyor belt to sort the garbage.
  - Control system consists Arduino Uno, metal-detecting sensors, ultrasonic sensors, and servo motors.
  - Tested Wood-made sorting arm with FEA using solid-work simulation.
- 3. Implementation of Fundamental SCADA System for Industrial Automation** (Jul 2023)  
*Mechatronics Project: Tools- Python, C++*
  - Installed the system using a cooling fan, DHT11 temperature sensor, potentiometer and ESP32 micro-controller .
  - Created a Graphical user interface using the Tkinter Python library.
  - Two modes are Developed; Manual Mode and Auto Mode, and the system can shift modes at any time.

## COURSES AND ACTIVITIES

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### Courses

- Arduino Platform and C Programming
- PowerBi Essential training
- Introduction to Solid Edge
- Embedded System Design

### Activities

- Team Leader of Zonal level champion in Chess Competition (2013, 2015) and foot ball Competitions (2013)
- Participant in province level of Science and Maths Quiz Competitions (2013)
- Former Secretary of the Science Union at Velanai central college
- Member of IEEE, IESL and IMechE
- Management Member of TLA.

## REFERENCE

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### Mr. Sanjeevan E

Manager,  
QHSE,  
Midassafety Lanka (Pvt) Ltd.  
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### Mr. Sasiranga De Silva

Founder and CEO of ThermalR Industries.  
Former Lecturer, University of Moratuwa.  
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### Dr. Dumith Jayathilaka

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