



# Chathusanka Jayasingha

Mechanical Engineer




## PROFILE

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I'm a very open minded, flexible person with creative ideas with the ability to work in different environments under any pressure. I excel at starting new projects and work hard to achieve goals. Furthermore, I am extremely motivated to constantly develop my skills and grow professionally.

## CONTACT

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-  Paranagama, Giriulla
-  Chathusanka.77@gmail.com
-  077 566 9844

## SKILLS

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SolidWorks	<div style="width: 90%;"></div>
AutoCAD	<div style="width: 75%;"></div>
MATLAB	<div style="width: 85%;"></div>
Arduino	<div style="width: 80%;"></div>
MS Excel	<div style="width: 100%;"></div>
MS Word	<div style="width: 100%;"></div>
MS PowerPoint	<div style="width: 100%;"></div>
PLC	<div style="width: 60%;"></div>
HTML	<div style="width: 50%;"></div>

## EDUCATION

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### University of Maryland Baltimore County, USA

Aug 2014- May 2018

- Bachelor of Science in Mechanical Engineering (GPA: 3.775)
- Graduated with high honor (Magna Cum Laude)
- Highlights: President's list 2014, 2015, and 2016

### Infortec International, Sri Lanka

Sep 2011 – Sep 2012

- Higher diploma in computer Science

### Maliyadeva Collage

2007 – 2010

- GCE Advance Level

### Wickramashila National School

1997 – 2007

- GCE Ordinary Level

## PROFESSIONAL AFFILIATIONS

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- Member of American Society of Mechanical Engineers

## CERTIFICATIONS

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- OSHA 30 Hour Construction Outreach Training Program

## LANGUAGES

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Sinhala 

English 

## RELEVANT COURSEWORK

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### Some Upper Level Classes

- ENME 204- Introduction to engineering design with CAD
- ENME 321- Transfer process
- ENME 320- Fluid mechanics
- ENME 360- Vibrations
- ENME 301- Structure and properties of engineering material
- ENME 304- Machine design
- ENME 444- Mechanical engineering system design
- ENME 408- Mechatronics
- ENME 423- Heat, Vent, AC design
- ENME 432L- Fluids and energy laboratory
- ENME 482L- Vibrations and controls laboratory
- ENME 403- Automatic controls

## WORK EXPERIENCE

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### 6 Month Training at Camso Loadstar

Mar 2019 – Present

- Industrial Safety
- Industrial hydraulics & pneumatics
- Utility maintenance (Boilers, Compressors etc.)
- Steel fabrication basics
- FMEA (Failure Mode Effective Analysis)
- ESOP(Engineering Standard Operation Procedure)
- Management Systems(5S, LEAN, Kaizen)
- Problem Solving Tools (A3, Pareto, 5 Whys, Fishbone)
- Industrial safety
- Lube room practices
- CNC operation & programming
- Basic electrical & PLC
- PDM technologies
- Computerized Maintenance Management System

### 6 Month Training at Punsara Auto Cables (Pvt) Ltd

Sep 2018 – Feb 2019

- CNC lathe machining, programming
- Stock keeping
- Cable manufacturing process
- Basic injection molding

## EXTRACURRICULAR ACTIVITIES

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- Member of the university fencing team
- Member of the school chess team

## PERSONAL INFO

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- Date of Birth : 14/04/1991
- Nationality : Sri Lankan
- Marital Status : Single

## PROJECTS

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### **Curing oven project (Camso Loadstar)**

The curing oven currently used in our plant is a convection oven that was built about 20 years ago. Due to the significant time it takes for wheels to get the curing temperature, the company was looking into ways to optimize the curing cycle time of wheels. I and another trainee were given the project to research latest technologies used in today's world and find a suitable one for us. After a thorough research, we came up with a gas catalytic IR curing oven as a replacement for our current system. Since this is a new technology to our company, we had to do our own research and directly communicate with suppliers to decide if the new system is capable of retaining our current paint quality and how the oven is implemented. The IR oven can bring the curing cycle time from current 60 minutes to less than 15 minutes, which is a huge cycle time reduction. We have already chosen a design by proposed by an American Company and are currently in the process of presenting details to the management.

### **Production automation project (Camso Loadstar)**

A gripper system was installed for product transferring between two hydraulic press machines in a production line. The grippers were made using pneumatic cylinders and the structure would often break due to impact forces of the gripper. Therefore, we redesigned a new system that uses universal grippers and does the same job with a higher accuracy outputting less impact forces. It was the bottleneck of the production line and with this new system, the breakdown time was reduced significantly.

### **Production Line Breakdown Analysis (Camso Loadstar)**

I was given a project to analyze machine breakdown patterns in a production line and come up with new modifications to reduce machine breakdowns. I analyzed the historical machine breakdown data using Pareto Charts and VLOOKUP function in excel and submitted a project report indicating the critical machines, critical machine parts along with an action plan for relevant modification. The modifications were approved by the senior engineer and they were implemented soon after.

## NON RELATED REFERENCES

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### Mr. Eranda Dewasinghe

Mechanical Senior Engineer  
Camso Loadstar (Pvt) Ltd  
Wheel Manufacturing Division, 25C,  
Industrial Estate, Ekala, Ja-ela,  
Sri Lanka  
Tel. (+94) 76 643 1784

### Mr. Charith Liyanagama

Mechanical Senior Engineer  
Camso Loadstar (Pvt) Ltd  
Wheel Manufacturing Division, 25C,  
Industrial Estate, Ekala, Ja-ela,  
Sri Lanka  
Tel. (+94) 77 251 9527

### Winery Netting Capstone Project (UMBC)

I worked in a team of four to design and build a netting machine for a client in Boordy vineyard within 15 weeks under a \$200 budget. Traditionally, netting was cast on the trellises by hand to prevent birds from eating the grapes. This was a very tedious and time consuming manual task so the objective was to increase the efficiency by mechanizing the netting process. We first went to Boordy vineyard and mapped out the requirements and constraints for a solution.

After considering several design proposals, we settled on the one we believed would work best. A CAD model was built using SOLIDWORKS and we also performed calculations to verify if the system can operate without flipping over as we believed it was the critical issue with our design. A stress analysis was also performed on SOLIDWORKS to ensure the system can support all external and internal forces. We successfully built the scaled down model within the given budget and time and it operated as we expected.

### Arduino Based PID Control System: Fan Speed Modulation (UMBC)

I collaborated with a team of three to design, build, and program using Arduino a proportional- integral- derivative (PID) controller which controls the speed of a fan to keep the temperature inside a box at a set-point value. The PID controller works by comparing the input set point value with the actual current value (process variable) reported by a sensor. We experimented to figure out the optimal modes of controls for stabilizing the temperature as well.

### Arduino Dot Finder (UMBC)

This project was done for my mechatronics class and involved working with sensors as well as a lot of Arduino programming. The goal of this project was to create a control system that can detect the location of several dots on a 6"x6" Lexan sheet. We used a rail system that consisted of pulleys and belts to transmit the power. The system is designed to sweep the sensor head along the plane in a zigzag pattern using two stepper motors. Certain calculations were done to determine the type of pulleys and belts to use and to ensure the belt won't slip during operation.