

Sanath Thilakarathna

📍 Kandana, SL ✉ dmsksanath@gmail.com ☎ +94 719626147 🔗 sanath-kumara.github.io in sanaththilakarathna
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Professional Summary

Highly motivated and results-driven Mechatronics Engineer with extensive expertise in mechanical design, robotics, and R&D projects. Skilled in machine design, embedded systems development, desktop application development, and advanced manufacturing techniques. Experience in managing complex engineering projects, collaborating in dynamic team environments, and delivering innovative, cost-effective solutions to technical challenges. Adept at leveraging cutting-edge technologies to optimize processes and drive innovation, with a strong commitment to achieving excellence in every project.

Key Skills

- **CAD Modeling & Mechanical Design:** SolidWorks, Fusion 360, Inventor, AutoCAD, FreeCAD
- **Prototyping & Fabrication:** 3D Printing, CNC Machining, Welding, EDM
- **Simulation:** SolidWorks, ANSYS
- **Embedded Systems Development:** ATmega328, ATmega128, ESP32, STM32, Raspberry Pi pico
- **Automation & Control Systems:** PLCs (Omron, Siemens, Delta), MATLAB Simulink
- **PCB Design & Development:** KiCAD, Eagle, Proteus
- **Programming:** Python, MATLAB, C/C++, LabVIEW, C#, ROS
- **Languages:** Fluent in Sinhala and English; Basic proficiency in Tamil and Japanese
- **Soft Skills:** Project Management, Technical Documentation

Experience

- ALDTAN**, Mechatronics Engineer Kaluthara, SL
Sept 2024 – Present
- Develop NI-DAQ based software systems for research facilities.
 - Developed web based softwares using Node.Js and PHP/Laravel.
 - Supervised CAD modeling and prototyping of new mechanical components.
 - Led R&D projects focusing on innovation.
- LE Robotics**, Mechatronics Engineer Minuwangoda, SL
March 2024 – Sept 2024
- Developed firmware for scara robot end-effector controller.
 - Developed a desktop application to configure and control robot arms.
 - Improved SD card firmware to access both SD and SDHC cards.
 - Developed complete solution for automating the potentiometer assembling QA process.
 - Implemented DH-parameter model for a robot arm
- Dilmah Ceylon Tea Company PLC**, Mechatronics Engineer - Intern Paliyagoda, SL
Oct 2023 – Feb 2024
- Designed a carton lifting mechanism and supervised the manufacturing and assembling.
 - Designed a velvet sticker paper punching machine.
 - Attend to the KUKA and OMRON robot arm maintenance and configuration.
- Trischel Fabric (MAS Holdings)**, MEP Engineer - Intern Thulhiriya, SL
March 2022 – July 2022
- Designed the thermic oil pipeline layout for installing the new Stenter machines.
 - Created a mobile app on Microsoft Power Platform to calculate the plant's electricity demand to manage generator power during fuel crisis in SL.
 - Developed a Teflon gasket cutter to reduce cutting time from 10 mins to 3 mins
 - Developed an desktop application for preventive maintenance scheduling.

Education

University of Ruhuna, BSc. (Hons) in Mechanical and Manufacturing Engineering

Feb 2019 – Feb 2024

- **GPA** : 3.16/4.0
- **Course Work** : Mechanical Design, Mechatronics Engineering, Kinematics, Thermodynamics, Control Engineering, Manufacturing Technologies, Maintenance Management, Lean Manufacturing

Certifications

- Project Management Specialization - University of Colorado Boulder – Coursera (2024) [View](#)
- Rapid Prototyping Using 3D Printing Specialization – Arizona State University – Coursera (2023) [View](#)
- Robotics : Aerial Robotics - University of Pennsylvania - Coursera (2023) [View](#)
- Become a PLC Developer Learning Path – LinkedIn Learning (2023) [View](#)
- Scientific Computing with Python – freeCodeCamp (2023) [View](#)
- Beginning C++ Programming - From Beginner to Beyond - Udemey (2020) [View](#)
- Introduction to Programming with MATLAB – Coursera (2020) [View](#)
- Certificate Course in Soft Skills – Career Guidance unit, UOR (2020) [View](#)

Projects

- Carton lifting machine design and fabrication - Dilmah Ceylon Tea Company. [View](#)
- Real-time Parameter Monitoring System for Latex – Final Year Project.
- Design and Fabrication of a Tefloan Gasket Cutter - Trischecl Fabric (Pvt) Ltd.
- Electricity Demand Calculator mobile app - Trischecl Fabric (Pvt) Ltd.
- Mini Project on Designing and Controlling a 1 DOF Magnetic Levitation System.
- Arduino line following and remote control robots.
- Face detection and recognition project.
- Development of a low cost windmill water pump for remote use - Group Member.

Achievements

- Finalist at the IEEE R10 Robotics Competition 2022 at Chulalongkorn University, Bangkok. [View](#)
- IEEE Xtream 17.0 Programming Competition (594th global rank among 4231 teams) [View](#)
- Singapore Space Challenge (SSC) 2020 for designing ISRU-capable Lunar Rover (Participant) [View](#)
- Mexcellence 2019 – Robot Competition (Winners) [View](#)

Refrees

Eng. Darshana Alahakoon

Head of Engineering
MJF Group / Dilmah Ceylon Tea Company PLC
111, Negambo Road, Peliyagoda, Sri Lanka
Phone: +94 11 482 2000, +94 11 482 2144
Mobile: +94 760399826
Email: darshana.alahakoon@dilmahtea.com

Eng. Ramitha Dissanayake

Head of Engineering
Trischel Fabric (Pvt) Ltd
MAS Fabric Park, Kurunegala Road, Thulhiriya, Sri Lanka
Mobile: +94 760399826
WeChat ID: DRD0771368970
E-mail: darshanada@trischel.com