

# PUBUDU DARSHANA

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No23, Kahawa Road, Pollewwa, Batapola.



## CHEMICAL AND PROCESS ENGINEER

A highly motivated Chemical and Process Engineering undergraduate with experience in wastewater treatment and industrial energy management. Passionate about process optimization, improving process sustainability, and solving real-world problems through analytical thinking. Always eager to learn new skills for professional growth. Detail-oriented and quick to adapt to new challenges, known for being self-confident, hardworking, and committed to achieving goals. Seeking opportunities to contribute to the industry while continuously growing in a dynamic environment.

## PROFESSIONAL EXPERIENCE

**Best Pacific Textiles Lanka (Pvt) Ltd, Makandura, Gonawila, Pannala.**  
**Engineering Trainee – Service Engineering Department**

**Dec 2023 – May 2024**

### Projects, Contributions & Exposure:

- **Process Analysis:** Studied river water and textile wastewater treatment processes, identifying areas for efficiency improvements. Improved process clarity through Piping & Instrumentation Diagrams (P&IDs). Analyzed boiler house automation requirements.
- **Operations:** Gained hands-on experience with steam & thermic oil boilers, chillers, cooling towers, filter press systems, and compressed air systems. Conducted water quality parameter testing for process monitoring.
- **System Design:** Contributed to the design of a sludge thickener unit and designed a chemical dosing pump unit based on operational needs.
- **Energy & Performance Optimization:** Conducted energy balance calculations and identified energy losses under the Energy Management System project, recommending efficiency improvements.
- **Data Analysis:** Performed data analysis on effluent treatment & power consumption for process optimization.
- **Technical Documentation:** Drafted Standard Operating Procedures (SOPs) for boiler house operations to ensure compliance and efficiency.
- **Production process** - Observed and studied textile production processes, including fabric knitting, dyeing, elastic knitting & weaving, finishing operations & warehouse operations.

## EDUCATION

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|--|-----------|
| • BSc Engineering (Hons) in Chemical and Process Engineering – University of Moratuwa – CGPA: 3.26 | 2021-2025 |
| • Richmond College, Galle.   | 2010-2018 |
| G.C.E. Advanced Level – 3 A s and A for English  | Aug 2019  |
| G.C.E. Ordinary Level – 9 A s  | Dec 2015  |

## ACADEMIC PROJECTS

- **Complete equipment design of a flash drum separator** – Ongoing  
Chemical design, mechanical design, process control, safety, and economic evaluation aspects are covered.

- **Butadiene manufacturing plant design** - included market analysis, process synthesis, energy and mass balances, process flow design, unit operations selection, site selection, health and safety assessment, environmental impact assessment, sustainability analysis, and techno-economic evaluation.
- **Steam network design for a latex glove manufacturing plant** – Steam network layout, steam requirement estimation, boiler sizing, pipe sizing, selection of equipment such as steam traps, condensate pumps, and pressure-reducing valves.
- **Mechanical design of a liquid ammonia storage tank** – Designed a pressurized bullet-type storage tank, performed size calculations, and created mechanical drawings using Solid Edge.
- **Chemical design for a distillation column to separate a binary mixture** – Conducted manual and simulation-based calculations to determine size, energy requirements, and operating conditions.
- **Pipe network design for a dairy manufacturing plant** – Calculations for the pressure drops, pipe sizing, pump selections, and pipe layout drawings.

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## RESEARCH WORK

- Optimization of Biological Nutrient Removal in Sewage Wastewater Treatment - Ongoing  
A modeling-based approach using BioWin software to optimize nutrient removal efficiency in sewage wastewater treatment processes.

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## TECHNICAL SKILLS

- Process Engineering: Process Simulation & Analysis, Equipment Design, Thermodynamic Calculations.
- Software & Tools: Aspen Plus (Process Simulations), Solid Edge (CAD), Trello (Task & Resource Management), Microsoft Office Suite (Excel, PowerPoint, Word), Git & GitHub
- Data Analytics & Visualization: SQL, Power BI, MS Excel
- Technical Documentation – Writing user guides and SOPs
- Programming Languages: Python, SQL, JavaScript, HTML, CSS
- Web Development

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## VOLUNTEERING EXPERIENCES

- Logistics Committee – OPEN WEEK 2023, IEEE Student Branch, University of Moratuwa
- Marketing Committee – EXMO 2023 Exhibition, UoM
- Editorial Member – IET on Campus, UoM
- Organizing Committee – ChemECon 2023 Research Symposium, UoM
- Team Member – ‘Soyuru Sathkara’ 2023 Educational Program, Engineering Faculty Student Union, UoM

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## CERTIFICATES

- Foundations of Project Management – CODL, University of Moratuwa - *Credential ID: pzQZEDmiWB*
- Thermic Boiler Operation Training
- SQL (Basic) Certificate – HackerRank - *Credential ID: 5B4676DBE697*
- Supervised Machine Learning: Regression and Classification – DeepLearning.AI *Credential ID: 5B8WRYNH4SZF*

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## SOFT SKILLS

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| • Communication and presentation | • Adaptability & Quick Learning |
| • Collaboration & Teamwork       | • Analytical Thinking           |

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## REFERENCES

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| <ul style="list-style-type: none"> <li>• Dr. M. Rathnayake, Senior Lecturer, Department of Chemical &amp; Process Engineering, University of Moratuwa.<br/>Tel: +94702532785<br/>Email: mrathnayake@uom.lk</li> </ul> | <ul style="list-style-type: none"> <li>• Mr. Udesh Jayakody, Assistant Manager Engineering, Best Pacific Textiles Lanka (Pvt) Ltd.<br/>Tel: +94768957394<br/>Email: Udesh_Jayakody@bestpacific.com</li> </ul> |
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