# LAKSHITHA DE SILVA

## PERSONAL DATA


| | |
|---|---|
| **Full name:** | Geekiyanage Gaya Lakshitha De Silva |
| **Professional title:** | Lecturer, Department of Mechanical Engineering, University of Moratuwa |
| **Home address:** | No 46, $6^{th}$ cross-lane, Walauwaththa, Ibbagamuwa, Kurunegala, Sri Lanka |
| **Phone:** | (+94) 71 212 90 61 |
| **Email:** | lakshithads@uom.lk / lakshitha.official@gmail.com |
| **Portfolio website:** | www.lakshithadesilva.com |


## EDUCATION

**Master of Philosophy** *2020 - 2024*

*University of Moratuwa, Sri Lanka*

∗ Thesis title "Investigation of the Aerodynamics of Bioinspired Flapping Wings"

∗ Experimental and computational investigation of pitching and plunging wings inspired by kinematics of birds to improve future Flapping Wing Bioinspired Aerial Vehicles (FWBAVs) performance.

**Bachelor of Science (Engineering)** *2014 - 2019*

*University of Moratuwa, Sri Lanka*

∗ Honors degree with second-upper class

## TEACHING EXPERIENCE

**Lecturer** *June 2024 - Present*

*University of Moratuwa, Sri Lanka*

∗ Lecturing : Aircraft Systems and Maintenance, Machine Design, Aircraft Avionics and Human Factors, Aerodynamics

∗ Project Supervision: Glider and UAV design project ($2^{nd}$ and $3^{rd}$ year students), Aircraft design project ($3^{rd}$ year students), Final year projects ($4^{th}$ year students)

**Visiting Lecturer** *October 2022 - December 2022*

*Faculty of Engineering, University of Sri Jayawardhanapura, Sri Lanka*

∗ Solid Mechanics and Finite Element Method (FEM)

**Lecturer** *2021 - 2022*

*IMC-AIC Campus, Colombo, Sri Lanka*

∗ Part-time permanent lecturer in mechanical engineering

**Visiting Instructor** *2020 - 2022*

*OREL Corporations (PVT) LTD, Colombo, Sri Lanka*

∗ Visiting Instructor and trainer for ANSYS software suite

## INDUSTRY EXPERIENCE

**Co-founder and Lead Engineer - ThermoFluids** *2020 - 2024*

*Dynamics LK (Pvt) Ltd, Colombo, Sri Lanka*

∗ Research and development of mechanical engineering solutaions for local and international clients.

**Trainee Engineer** *July 2017 - January 2018*

*Southern Spars International (Pvt) Ltd, Biyagama, Sri Lanka*

∗ Design and development of carbon fiber composite components.

## LANGUAGE PROFICIENCY

**IELTS - Academic**
*Overall 8.0*
∗ Listening: 8.5 Reading: 9.0 Writing:7.0 Speaking: 7.0

## TECHNICAL SKILLS

**Related coursework**
∗ Thermodynamics, Fluid Dynamics, Aerodynamics, Computational Fluid Dynamics, Heat and Mass Transfer

**Computer-aided design and manufacturing software**
∗ Solidworks, AutoCAD, SolidEdge, ANSYS Design Modeler/ SpaceClaim

**Simulation software**
∗ OpenFOAM, Ansys Fluent/ CFX/ Structural, NI-LabVIEW, SIMULIA Abaqus

**Programming languages**
∗ Python, MATLAB, C++

## PUBLICATIONS

**Effects of Motion Kinematics on Aerodynamic Performance of Bioinspired Pitching and Plunging Wings**
*Advances in Mechanical Engineering, 2025*
*Lakshitha De Silva, Nalaka Samaraweera, Nirosh Jayaweera, Thusitha Sugathapala*
*Manuscript under review*

**A Framework for Wind Tunnel Testing of Scale Models in Low Subsonic Conditions**
*Proceedings of the IMechE, Part G: Journal of Aerospace Engineering*
*Lakshitha De Silva, Nalaka Samaraweera, Nirosh Jayaweera*
*Manuscript under review, SSRN DOI:10.2139/ssrn.5593831*

**Shapeshifters of the Skies; Bioinspired Morphing Wings to Improve Aerodynamics of Fixed Wing Unmanned Aerial Vehicles.**
*Bolgoda Plains Research Magazine, Volume 5 Issue 1, 2025*
*Lakshitha De Silva, Nalaka Samaraweera, Nirosh Jayaweera*
*DOI: 10.31705/BPRM.v5(1).2025*

**A CFD Approach to Evaluate Performance of Pedestal Fan Blades**
*MERCon 2024 International Conference, Katubedda, Sri Lanka, 2024*
*Pulasthi Dabare, Lakshitha De Silva, Nalaka Samaraweera*
*DOI: 10.1109/MERCon63886.2024.10688507*

**Design and Experimental Characterization of a Soft Bending Actuator for Morphing Aerofoils**
*MERCon 2023 International Conference, Katubedda, Sri Lanka, 2023*
*Kumeesha De Silva, Lakshitha De Silva, Asitha Kulasekara, Nalaka Samaraweera*
*DOI: 10.1109/MERCon60487.2023.10355480*

**Should we care about how birds fly?**
*Bolgoda Plains Research Magazine, Volume 3 Issue 1, 2023*
*Lakshitha De Silva, Nalaka Samaraweera, Nirosh Jayaweera, Thusitha Sugathapala*
*DOI: 10.31705/BPRM.v3(1).2023.3*

**A Computational Study of the Aerodynamics of Plunging and Pitching Motions of Airfoils**
*MERCon 2022 International Conference, Katubedda, Sri Lanka, 2022*
*Lakshitha De Silva, Nalaka Samaraweera, Nirosh Jayaweera, Thusitha Sugathapala*
*DOI: 10.1109/MERCon55799.2022.9906181*

## PROJECT SUPERVISIONS

**Co-supervisor: Investigation of Bio-inspired Morphing Wing Tip Designs for Fixed Wing Micro Air Vehicles.** *2024 - 2025*
∗ Final year project of B.Sc. (Eng) Hons. students

**Co-supervisor: Development of a Morphing Wing-Based Small Unmanned Aerial Vehicle (UAV)** *2023 - 2024*
∗ Final year project of B.Sc. (Eng) Hons. students

**Co-supervisor: Development of computational and experimental framework for small scale wind turbines** *2022 - 2023*
∗ Final year project of B.Sc. (Eng) Hons. students

**Adviser: Design and development of a soft robotic morphing wing for Bio-inspired Micro Air Vehicle** *2022 - 2023*
∗ Final year project of B.Sc. (Eng) Hons. students

## PROJECTS

**Design and development of apparatus for experimental investigation of unsteady aerodynamics of moving objects** *2020 - 2022*
∗ Motion control system for handling models inside a wind tunnel
∗ Laser visualization system inspired by Particle Image Velocimetry (PIV)
∗ The apparatus is being used for multiple graduate and post-graduate research projects

**Design and development of small passenger vehicle chassis with improved crash-worthiness and aerodynamic performance for small-scale manufacturing** *2018 - 2019*
∗ Explicit dynamics crash simulations using SIMULIA Abaqus
∗ CFD simulations of aerodynamic performance using ANSYS Fluent

**Design and development of a Formula Student (FS) car for FS UK 2018** *2017 - 2018*
∗ Team lead and head of aerodynamics and composite manufacturing
∗ Design, development, and manufacturing of body and aerodynamic unit for a FS car for the first time in Sri Lanka
∗ Overall $30^{th}$ position in FS UK competition held at Silverstone, UK

**Modeling of gas turbine blade cooling system** *January 2018 - June 2018*
∗ Numerical modeling of heat transfer using MATLAB
∗ CFD simulation of the cooling system using ANSYS Fluent

**Design and development of a Formula Student (FS) car for FS UK 2017** *2016 - 2017*
∗ Assistant power-train engineer
∗ Design, development, and manufacturing of heat exchange system

**Smart helmet for motorcycle riders** *July 2016 - November 2016*
∗ $360^{o}$ collision forecasting and warning system
∗ Voice command visor control system

## EXTRA-CURRICULAR ACTIVITIES

Vice-president of IMechE University of Moratuwa student chapter *2017 - 2018*

Vice-president of University of Moratuwa Mechanical Engineering Society *2016 - 2017*

## REFERENCE

**Dr. Nalaka Samaraweera**
Senior Lecturer,
Dept: of Mechanical Engineering,
University of Moratuwa
Email: nalakas@uom.lk

**Dr. J.R. Gamage**
Senior Lecturer,
Dept: of Mechanical Engineering,
University of Moratuwa
Email: gamagejr@uom.lk

**Dr. Eranga De Silva**
Senior Lecturer,
Dept: of Mechanical Engineering,
University of Moratuwa
Email: ahteranga@uom.lk