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
Date of birth:	January 04, 1995
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Google scholar:	`https://scholar.google.com/citations?user=ijXwAToAAAAJ&hl=en`

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, 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

A Framework for Wind Tunnel Testing of Scale Models in Low Subsonic Conditions
International Journal of Mechanical Engineering Education, 2025
Lakshitha De Silva, Nalaka Samaraweera, Nirosh Jayaweera
Manuscript under review

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

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. *May 2024 - Present*
∗ 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 flapping wings *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
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