



**THARINDU PRADEEP
MIYANAWALA**

(AMIESL; AMIMEchE;
Member, APS; ASME, NSF)

DOB: 20.05.1989
NIC No: 891411510V

Address:
352-D, Brilliance Housing
Scheme
Madiwela Road
Madiwela, Sri Lanka

Contact:
+94 773545734
tharindum@uom.lk
tharindu.miyawala@gmail.
com

SCHOOLS ATTENDED:

Royal College, Colombo.
Kottawa Dharmapala Maha
Vidyalaya.

REFEREES:

Prof. R. K. Jaiman
Associate Professor
Department of Mechanical
Engineering
University of British
Columbia, Vancouver, Canada.
rjaiman@mech.ubc.ca
+1 (236) 866-3374

Prof. R. A. R. C. Gopura
Department of Mechanical
Engineering
University of Moratuwa,
Katubedda, Moratuwa, Sri
Lanka
gopurar@uom.lk
+94 112650621

EDUCATION:

- Ph.D. in Mechanical Engineering, National University of Singapore. 2015-2019.
- B.Sc. Engineering (Honors, First Class) in Mechanical Engineering, University of Moratuwa, Sri Lanka. 2009-2014.
- Diploma in English, Institute of English, Sri Lanka. 2007.
- Certificate in Project Management, National Institute of Business Management, Sri Lanka. 2013.
- G.C.E. Advanced Level: 4A passes for Mathematics, Physics, Chemistry and General English. 2008. (Country Rank: 14)

AWARDS:

- Gold Medal for the Best Mechanical Engineering Graduand, University of Moratuwa, Sri Lanka. 2014.
- Dr. G. C. L. de Silva Memorial Prize for Distinctions in all subjects in both G. C. E. (A/L) and G. C. E. (O/L). Royal College. 2008.
- Ruby Andries Prize for Mathematics. Royal College. 2008.
- Dr. J. Nanayakkara Prize for 2nd highest in Physics. Royal College.

INTERNATIONAL PROGRAMMES PARTICIPATED:

- Travelling University 2014: A small and medium enterprises (SME) programme organized by IfaS, Germany. 2014.
- Jenesys 2.0: SAARC countries' student programme organized by the Japan International Cooperation Center (JICE). 2013.

TEACHING EXPERIENCE:

- Lecturer, University of Moratuwa, Sri Lanka. 2019-Present.
- Visiting Lecturer, Kothalawala Defence University, Sri Lanka. 2019.
- Teaching Assistant, National University of Singapore. 2018.
- Lecturer, University of Moratuwa, Sri Lanka. 2014-2015.
- Visiting Lecturer, Ocean University of Sri Lanka. 2014.
- Visiting Lecturer, ICBT, Sri Lanka. 2014-2015.
- Visiting Instructor, University of Moratuwa, Sri Lanka. 2014.

SELECTED PUBLICATIONS:

- **Miyanawala, T. P.** and Jaiman, R. K., 2019. Decomposition of wake dynamics in fluid-structure interaction via low-dimensional models. *Journal of Fluid Mechanics*, 867, pp.723-764.
- **Miyanawala, T. P.** , Jaiman, R. K. , 2018. Self-sustaining turbulent wake characteristics in fluid-structure interaction of a square cylinder. *Journal of Fluids and Structures*, 77, pp.80-101.

RESEARCH PROFILE:

Area of specialization:

Mechanical Engineering

Ph. D. in Mechanical Engineering:

National University of Singapore. 2015-2019.

Thesis title:

Data-Driven Modeling and Deep Learning for Fluid-Structure Interaction

B. Sc. Engineering in Mechanical Engineering:

University of Moratuwa, Sri Lanka. 2009-2014.

First Class Honors.

Gold Medalist.

Final year project:

Design and Development of a Server Room Model for Verification of Energy Efficient Operation

Research interests:

Deep learning for physics
Data-driven physics modeling
Fluid-structure interaction
Finite Element Method
Structural vibrations

Research competencies:

Fluid mechanics
Deep learning
Principle component analysis
Finite Element Analysis
Mechanical vibrations
Rigid body dynamics

Software competencies:

MATLAB
ANSYS Fluent
ANSYS Structural
ANSYS Workbench
GMSH
SOLIDWORKS
AutoCAD
Tecplot 360

Google Scholar Citations: 109 h-index: 4 i10 index:3

Journal publications:

- **Miyanawala, T. P.** and Jaiman, R. K., 2019. Decomposition of wake dynamics in fluid–structure interaction via low-dimensional models. *Journal of Fluid Mechanics*, 867, pp.723-764.
- **Miyanawala, T. P.** and Jaiman, R. K. , 2018. Self-sustaining turbulent wake characteristics in fluid–structure interaction of a square cylinder. *Journal of Fluids and Structures*, 77, pp.80-101.
- Jaiman, R. K. , Guan, M. Z. and **Miyanawala, T. P.** , 2016. Partitioned iterative and dynamic subgrid-scale methods for freely vibrating square-section structures at subcritical Reynolds number. *Computers & Fluids*, 133, pp.68-89.

Conference publications:

- **Miyanawala, T. P.** and Jaiman, R. K., 2019. A Hybrid Data-Driven Deep Learning Technique for Fluid-Structure Interaction. *38th OMAE Conference*.
- **Miyanawala, T. P.** and Jaiman, R. K. , 2018. A Novel Deep Learning Method for the Predictions of Current Forces on Bluff Bodies. *37th OMAE Conference*.
- Mao, X., Joshi, V., **Miyanawala, T. P.** and Jaiman, R. K. , 2018. Data-Driven Computing With Convolutional Neural Networks for Two-Phase Flows. *37th OMAE Conference*.
- Guan M. Z., Narendran K. K., **Miyanawala T. P.**, Ma P. F. and Jaiman R. K., 2017. Control of Flow-Induced Motion in Multi-Column Offshore Platform by Near-Wake Jets. *36th OMAE Conference*.
- **Miyanawala T. P.** , Guan M. Z. and Jaiman R. K. , 2016. Flow-Induced Vibrations of a Square Cylinder With Combined Translational and Rotational Oscillations. *35th OMAE Conference*.

Conference presentations:

- Jaiman, R. K. and **Miyanawala, T. P.**, 2018. Using Deep Neural Networks for Data-Driven Inverse Modeling of Turbulent Wake Dynamics. *13th World Congress on Computational Mechanics*.
- Mao, X., Joshi, V., **Miyanawala, T. P.** and Jaiman, R. K., 2018. Data-driven Computing with Deep Neural Networks for Inverse Modeling of Two-phase Flows. *13th World Congress on Computational Mechanics*.
- **Miyanawala, T. P.** and Jaiman, R. K., 2018. A Machine Learning Model for Unsteady Wake Dynamics. *Bulletin of the American Physical Society*.
- **Miyanawala, T. P.** and Jaiman, R. K., 2017. Convolutional Neural Networks for Wake Flow Predictions. *Bulletin of the American Physical Society*.

Preprints:

- **Miyanawala, T. P.** and Jaiman, R. K. , 2017. An Efficient Deep Learning Technique for the Navier-Stokes Equations: Application to Unsteady Wake Flow Dynamics. *arXiv: 1710.09099*.

TEACHING PROFILE:

Area of specialization:

Mechanical Engineering

Ph. D. in Mechanical Engineering:

National University of Singapore. 2015-2019.

B. Sc. Engineering in Mechanical Engineering:

University of Moratuwa, Sri Lanka. 2008-2014.
First Class Honors.
Gold Medalist.

Teaching interests:

Mechanics of machines
Mechanics of materials
Fluid mechanics
Computational fluid dynamics
Advanced control systems
Finite element analysis
Applied mathematics

Analytical competencies:

Applied mechanics
Computational fluid dynamics
Fluid flow control
Finite element method
Offshore structures
Machine learning
Data-driven physics modeling

Software competencies:

MATLAB
ANSYS Fluent
ANSYS Structural
GMSH
SOLIDWORKS
AutoCAD
Tecplot 360

Language competencies:

Fluent in English speaking and writing.
IELTS Score: 8.0/9.0, 2015.
Diploma in English, 2007.

Work experience:

- Lecturer – 2019-Present, University of Moratuwa, Sri Lanka
 - Fluid Mechanics*
 - Mechanics of Machines*
 - Industrial Automation*
 - Fluid Power Systems & Machinery*
 - Mechanics of Materials*
 - Aerodynamics*
 - Airframe Structures and Design*
- Visiting Lecturer – 2019-Present, Gen. Sir John Kothalawala Defence University, Sri Lanka
 - Mechatronics Systems Design Project*
- Visiting Lecturer – 2019-Present, CINEC Campus, Sri Lanka
 - Parametric Design Analysis*
 - Road & Race Aerodynamics*
 - Aerodynamic Design and Analysis*
- Graduate Teaching Assistant – 2018, National University of Singapore
 - Mechanics of Machines – Gyroscopic effects*
 - Engineering Principles and Practices*
- Lecturer – 2014-2015, University of Moratuwa, Sri Lanka
 - Fluid Dynamics*
 - Advanced Control Systems*
 - Mechanics of Materials*
 - Fundamentals of Engineering Thermodynamics*
 - Computational Fluid Dynamics*
 - Basic Thermal Sciences*
 - Design/ Research Project*
- Visiting Lecturer – 2014, Ocean University of Sri Lanka
 - Industrial Hydraulics and Pneumatics*
- Visiting Lecturer – 2014, International College for Business and Technology (ICBT), Sri Lanka
 - Dynamics of Machines*
- Visiting Instructor – 2014, University of Moratuwa, Sri Lanka
 - Mechanics*
 - Motor Vehicle Technology*
 - Micro/Nano Electro-Mechanical Systems*
 - Programming and Instrumentation for Automation*
 - Mechatronic Systems Engineering*
 - Control Systems and Applications*

Demonstration Tasks:

- University of Moratuwa stall in “Edex Exhibition” organized by Royal College, Colombo, 2012.
 - Sustainable energy solutions*
 - Waste management*
- Department of Mechanical Engineering demonstrations in “Exmo” exhibition organized by University of Moratuwa, 2010.
 - Material removal processes*
 - Mechanisms of rigid bodies*

Programmes Participated:

- Travelling University: A small and medium enterprises (SME) programme organized by IfaS, Germany. 2014.
- Jenesys 2.0: SAARC countries’ student programme organized by the Japan International Cooperation Center (JICE). 2013.