Dr. N.G.P.B. Neluwala

Senior Lecturer
Department of Civil Engineering,
Faculty of Engineering,
University of Peradeniya.
+94771662048
pandukaneluwala@eng.pdn.ac.lk

Date of Birth: 04/08/1988

EDUCATIONAL QUALIFICATIONS

- Ph.D. The University of Tokyo (2018)
- MEng The University of Tokyo (2015); Received Outstanding Master Thesis award
- B.Sc. Eng (First Class Hons), University of Peradeniya (2012)

MEMBERSHIPS

- Associate member, Institute of Engineers Sri Lanka
- Green Associate Professional, Green Building Council Sri Lanka
- Member, International Water Association
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APPOINTMENTS

- Senior Lecturer (September 2020 to Present), Department of Civil Engineering, Faculty of Engineering, University of Peradeniya, Sri Lanka
- Associate Research Fellow, Institute of Industrial Science, The University of Tokyo (Aug. 2020 – To Date)
- Visiting Lecturer, Postgraduate Institute of Agriculture, University of Peradeniya, Sri Lanka (2024 to present)
- Visiting Lecturer, Department of Civil Engineering, Faculty of Engineering, Open University of Sri Lanka, Sri Lanka (2021 to 2023)
- Lecturer (Probationary), Department of Civil Engineering, Faculty of Engineering, University of Peradeniya, Sri Lanka (October 2018 to September 2020)
- Director (Part-Time) Sri Lanka- Japan study centre, University of Peradeniya (2022 to 2023)
- Temporary Lecturer, Department of Civil Engineering, Faculty of Engineering, University of Peradeniya, Sri Lanka (June 2012 to July 2013)

ACHIEVEMENTS AND AWARDS

- Awarded the ‘URC Research Award – 2024’ by the University of Peradeniya
- Awarded the “Furuichi Kimatake Prize” from The University of Tokyo for Outstanding Master Thesis
- Awarded “The S D & C C Award” for the best Paper by an Associate Member published in the "Engineer" Journal of IESL during the Session 2013/2014 to N.G.P.B. Neluwala, K.T.S. Karunanayake, K.B.G.M. Sandaruwan and K.P.P. Pathirana for the Paper titled " Characteristics of Hydraulic Jumps over Rough Beds – An Experimental Study "
- Awarded the “Ceylon Development Engineering Prize for Best Performance in Civil Engineering” by University of Peradeniya at the Convocation holden in Peradeniya
- Awarded the “J.B. Dissanayake Prize for Industrial Training” by University of Peradeniya at the Convocation holden in Peradeniya

- Awarded the “Migara Ranathunga Trust Award” from Institute of Engineers Sri lanka (IESL) for best Civil Engineering Undergraduate Training in the year 2012
- Selected to the Japan Study Programme organized by Ministry of Education, Culture, Sports, Science and Technology in (MEXT) Japan (7th -19th March 2012).

SCHOLARSHIPS/GRANTS

- NRC, Sri Lanka IDG Research Grant (24-106 (P2)) for “Comparative Analysis of Machine Learning and Numerical Weather Prediction Models for Enhanced Local Weather Forecasting and Water Resource Management in Sri Lanka”
- Multidisciplinary Research Grants, University of Peradeniya, Sri Lanka (2024 GN526) (Co-Investigators)
- University Research Grants, University of Peradeniya, Sri Lanka (2021 URG/2021/18/E)
- Japanese Government (Monbukagakusho: MEXT) Scholarship for PhD students (October 2015 to October 2018)
- Japanese Government (Monbukagakusho: MEXT) Scholarship for MSc students (October 2013 to October 2015)

RECENT CONSULTANCY WORKS

- Consulting Services for Investigation for Identifying Locations for New Hydrological Stations in Twenty-Seven (27) River Basins in Sri Lanka (Contract Number: SLMOI/CRES/ID/C/QCBS/125)
- Flood Management Plan for Waggalmodara Canal- Replacement of Mihiripanna Pumping station -Galle District (2024)
- Comprehensive Analysis Report for Slope Stability and Risk Reduction Measures in Forebay Area at Nillambe Power Station (2023)
- Development of Real Time Flood Forecasting Model for Mi Oyo Basin (2021)
- Technical Evaluation on Feasibility of Revised Proposals on Proposed Intake Structure and Design of a Forebay Tank for Hemmathagma Water Supply Project (May 2021)
- Rehabilitation of Aniwatta Tunnel Aniwatta Tunnel Project (2020)
- Development of capacity and implementation of modelling for the preparation of data for a climate Atlas and Development of capacity and implementation of modelling for the preparation of 30 years of downscaled data for a Climate Atlas for Lao PDR (January 2020 to September 2020)

WORKSHOPS/ TALKS CONDUCTED

- Keynote Speech, Technical Conference - Young Engineers’ Forum, Sri Lanka National Committee on Large Dams (YEF-SLNCOLD-2024) The talk focused on my work on Dam breach modelling and the importance of that for the future
- Workshop on HecRecSim Model, for the Irrigation department, Organised by Engineering Design Centre, Faculty of Engineering, University of Peradeniya (23/11/2023)
- Workshop on HEC-RAS model, Organised by Engineering Design Centre, Faculty of Engineering, University of Peradeniya (19/06/2023)
- Training on Hydrological Data Analysis, HEC-DSS & HEC-SSP software, Hydrology Division, Irrigation Department (19-20/02/2021)
- Workshop on Weather Research Forecasting (WRF) Model, Organised by Engineering Design Centre, Faculty of Engineering, University of Peradeniya (27/02/2020)

TRAININGS/ CERTIFICATES

- Certificate on Basic WRF Tutorial Training – Summer 2024 Organised by National Center for Atmospheric Research, USA
- Knowledge Co-Creation Program (Country Focus) in Short-term Program of Innovative Asia: Kyushu University, Japan (Historical Environment Design) (February 2020)
- Post Doc training offered by the Water and Society (WaSo) Project under a grant from the government of Norway for the NORHED project (June-July 2019)
- Third Workshop on Publicizing Research to the General Public-2018, International Affairs Office, University of Peradeniya (November 2018)
- Workshop on Developing Research Supervision, NORADWaSo-Asia Project of University of Peradeniya, Sri Lanka (November 2018)
- Riken International School of Data Assimilation, Kobe, Japan (January 2018)

RECENT PUBLICATIONS

Full papers (Journals - Peer reviewed)

- Balasooriya, M. and Neluwala, P., 2025. Statistical Approach to Selecting Global Circulation Models (GCMs)–A Study Based in the Kalu Ganga Catchment of Sri Lanka. *Engineer: Journal of the Institution of Engineers, Sri Lanka*, *58*(3).
- Madumalsha, C., Nawoda, I., Neluwala, P. and Revel, M., 2025. Estimation of Water Elevation Using ICESat-2 Satellite. Engineer: Journal of the Institution of Engineers, Sri Lanka, 58(1). https://doi.org/10.4038/engineer.v58i1.7674
- Peramuna, P.D.P.O., Neluwala, N.G.P.B., Wijesundara, K.K., DeSilva, S., Venkatesan, S. and Dissanayake, P.B.R., 2025. Enhancing 2D hydrodynamic flood model predictions in data-scarce regions through integration of multiple terrain datasets. *Journal of Hydrology*, *648*, p.132343. https://doi.org/10.1016/j.jhydrol.2024.132343
- Athuraliya, V.D., Neluwala, P. and Pathirana, K.P.P., 2025. Assessing the impacts of sea level rise on salinity intrusion in the Kelani River, Sri Lanka. *Journal of Water and Climate Change*, p.jwc2025607. https://doi.org/10.2166/wcc.2025.607
- Madumalsha, C., Nawoda, I., Neluwala, P. and Revel, M., 2025. Estimation of Water Elevation Using ICESat-2 Satellite. *Engineer: Journal of the Institution of Engineers, Sri Lanka*, *58*(1). https://doi.org/10.4038/engineer.v58i1.7674
- Daranagama, D.A.R., Neluwala, P. and Wijetunge, J.J., 2024. Joint probability of cyclonic wind speed and maximum rainfall for cyclones affecting Sri Lanka. Engineer: Journal of the Institution of Engineers, Sri Lanka, 57(4). https://doi.org/10.4038/engineer.v57i4.7663.
- Perera, P.L.L.N., Neluwala, N.G.P.B. and Wijetunge, J.J., 2024. Influence of weather research and forecasting model microphysics and cumulus schemes for forecasting monsoon rainfall over the Kelani River basin, Sri Lanka. Journal of Water and Climate Change, p.jwc2024291 https://doi.org/10.2166/wcc.2024.291
- Peramuna, P.D.P.O., Neluwala, N.G.P.B., Wijesundara, K.K., Venkatesan, S., De Silva, S. and Dissanayake, P.B.R., 2024. Novel approach to the derivation of dam breach parameters in 2D hydrodynamic modeling of earthquake induced dam failures. Science of the total environment, 927, p.171505 https://doi.org/10.1016/j.scitotenv.2024.171505
- Sadushan, S. and Neluwala, N.G.P.B., 2024. Application of GIS & RS in Rainwater Harvesting for an Arid Region. ENGINEER, 57(02), pp.69-80 https://doi.org/10.4038/engineer.v57i2.7650
- Koswaththa, H.M.S.A., Ranasinghe, S.K., Ekanayake, I., Herath, D. and Neluwala, N.G.P.B., 2024. Downscaling Future Precipitation over Mi Oya River Basin using Artificial Neural Networks. ENGINEER, 57(02), pp.57-67 https://doi.org/10.4038/engineer.v57i2.7649
- Abeyratne, W.M.L.K., Weerakoon, S.B., Neluwala, P. and Ratnaweera, H., 2023. Suspended solid removal efficiency of plate settlers and tube settlers analysed by CFD modelling. Water Science & Technology, 87(9), pp.2116-2127 https://doi.org/10.2166/wst.2023.107

- Gimhan, P.G.S., Neluwala, P., Acierto, R.A. and Raghavan, S.V., 2022. Assessment of WRF microphysics and cumulus parameterizations in simulating heavy rainfall events over Badulu Oya catchment, Sri Lanka. Journal of Water and Climate Change, 13(12), pp.4213-4233 https://doi.org/10.2166/wcc.2022.371
- Peramuna, P.D.P.O., Neluwala, N.G.P.B., Wijesundara, K.K., DeSilva, S., Venkatesan, S. and Dissanayake, P.B.R., 2023. Review on model development techniques for dam break flood wave propagation. Wiley Interdisciplinary Reviews: Water, p.e1688 https://doi.org/10.1002/wat2.1688
- Wijetunge, J.J. and Neluwala, N.G.P.B., 2023. Compound flood hazard assessment and analysis due to tropical cyclone-induced storm surges, waves and precipitation: a case study for coastal lowlands of Kelani river basin in Sri Lanka. Natural Hazards, pp.1-29 https://doi.org/10.1007/s11069-023-05846-w
- Wanasinghe, W.M.A.Y., Gamage, K.H., Neluwala, N.G.P.B. and Gimhan, P.G.S., 2023. Performance of Different Parameterization Configurations of WRF-ARW Model during Heavy Rainfall over Mi Oya River Basin. ENGINEER, 56(01), pp.31-41 https://doi.org/10.4038/engineer.v56i1.7558
- Gimhan, P.G.S., Neluwala, P. & Acierto, R.A., 2023. High-resolution WRF simulations of a monsoon event (2019) over the Badulu Oya Catchment, Sri Lanka: Role of cumulus parameterization condition and microphysics schemes. J Earth Syst Sci 132, 166 https://doi.org/10.1007/s12040-023-02186-y
- Tennekoon Mudiyanselage, S., Wijesundara, K., Venkatesan, S., De Silva, S., Dissanayake, R., & Neluwala, P., 2023. Significance of construction sequence and the initial behaviour in concrete-faced rockfill dams. Australian Journal of Structural Engineering, 25(2), 125–143 https://doi.org/10.1080/13287982.2023.2268288
- Edirisooriya, E.M.N.T., Neluwala, N.G.P.B. and Weerakoon, W.M.S.B., 2022. Flood Inundation Modelling in Greater Colombo Region Using HEC-RAS 2D. ENGINEER, 55(03), pp.21-27 https://doi.org/10.4038/engineer.v55i3.7518
- Athukorala, R., Thol, T., Neluwala, P., Petri, M., Sengxeu, S., Lattada, L., Keomanivong, S. and Sithivong, V., 2021. Evaluating the Performance of a WRF Physics Ensemble in Simulating Rainfall over Lao PDR during Wet and Dry Seasons. Advances in Meteorology, pp.1-16 https://doi.org/10.1155/2021/6630302
- Samarasingha, S.M.T.C., Sandaruwan, M.S., Sampath, D.S. and Neluwala, N.G.P.B., 2021. Dynamic downscaling of rainfall data for Deduru Oya River Basin using WRF weather model. ENGINEER, 54(02), pp.69-75 https://doi.org/10.4038/engineer.v54i2.7443
- Toride, K., Neluwala, P., Kim, H. and Yoshimura, K., 2017. Feasibility study of the reconstruction of historical weather with data assimilation. Monthly Weather Review, 145(9), pp.3563-3580.https://doi.org/10.1175/MWR-D-16-0288.1
- Neluwala, N.G.P.B., Karunanayake, K.T.S., Sandaruwan, K.B.G.M. and Pathirana, K.P.P., 2013. Characteristics of hydraulic jumps over rough beds–an experimental study. Engineer: Journal of the Institution of Engineers, Sri Lanka, 46(3) https://doi.org/10.4038/engineer.v46i3.6779

Publications as conference proceedings or abstracts

- Niwunhella D.R.T., Kalpadeep D.N.S., Neluwala N.G.P.B. and Dammika A.J.. 2023. Experimental Investigation on Porous Concrete for Sustainable Drainage Systems. 14th International Conference on Sustainable Built Environment -2023, Kandy, Sri Lanka. https://www.kandyconference.org/
- Athuraliya V.D., Neluwala N.G.P.B. and Pathirana K.P.P., 2023. Dynamic Behavior of Salinity Intrusion in Kelani River, Sri Lanka. 14th International Conference on Sustainable Built Environment -2023, Kandy, Sri Lanka. https://www.kandyconference.org/
- Perera P.L.L.N., Neluwala N.G.P.B. and Wijetunge J.J., 2023. Optimizing Physics Parameters for Heavy Rainfall Forecasting in the Kelani River Basin Using the WRF Model. 14th International Conference on Sustainable Built Environment -2023, Kandy, Sri Lanka. https://www.kandyconference.org/
- Neluwala, N.G.P.B., Dammika, A.J., Rathnayake, R.M.L.D., Niwunhella, D.R.T. and Kalpadeep, D.N.S., 2023. Experimental Investigation on Porous Concrete for Sustainable Drainage. In: Proceedings of Peradeniya University International Research Sessions, 20th & 21st September 2023, Sri Lanka, Vol. 24.
- Bandara, W.H.M.Y.D., Dinelka, K.H.S., Neluwala, N.G.P.B. (2022). Discharge Observations Assimilation to Improve Flood Prediction Skills. In: Dissanayake, R., Mendis, P., Weerasekera, K., De Silva, S., Fernando, S. (eds) ICSBE 2020. Lecture Notes in Civil Engineering, vol 174. Springer, Singapore. https://doi.org/10.1007/978-981-16-4412-2_12
- Peramuna, P.D.P.O., Neluwala, N.G.P.B., Wijesundara, K.K., Dissanayake, P.B.R., De Silva, S., Venkatesan, S. (2023). Development of a Digital Elevation Model Integrating Different Datasets for an Area of Mahaweli Basin, Sri Lanka. In: Dissanayake, R., Mendis, P., Weerasekera, K., De Silva, S., Fernando, S., Konthesingha, C. (eds)ICSBE 2022. Lecture Notes in Civil Engineering, vol 266. Springer, Singapore. https://doi.org/10.1007/978-981-19-2886-4_30
- Abeyratne, W.M.L.K., Weerakoon, S.B., Neluwala, N.G.P.B. (2022). Clarification Efficiency of Plate Settlers Analyzed by CFD Modelling. In: Dissanayake, R., Mendis, P., Weerasekera, K., De Silva, S., Fernando, S. (eds) ICSBE 2020. Lecture Notes in Civil Engineering, vol 174. Springer, Singapore. https://doi.org/10.1007/978-981-16-4412-2_42

- Neluwala, P., Yoshimura, K., Toride, K., Hirano, J., Ichino, M. and Okazaki, A., 2017, December. Reconstruction of Historical Weather by Assimilating Old Weather Diary Data. In AGU Fall Meeting Abstracts (Vol. 2017, pp. PP31A-1264).

Academic Supervision

PhD

- G.A.T. Madushanka, Assessment of water availability in Mahaweli basin at Kaluganga reservoir and estimation of additional quantity of water for the diversion to water short areas (PG/PhD/19/10) - Ongoing (Principle Supervisor)
- S.M.Nissanka, 2025, Rainfall-Integrated Traffic Flow Prediction Using Machine Learning Techniques (PG/PhD/25/09) - Ongoing (Co-Supervisor)
- P.D.P.O.Peramuna, 2025, Assessment of cascade dam failures due to natural hazards (PG/PhD/21/07) (Principle Supervisor)**MPhil**
- J.Ajanthiny, Impact on reservoirs in hydrological modeling (ongoing) (Principle Supervisor)

MScEng

- S. Himanujahn, 2025, Flood Frequency Analysis in the Kala Oya River Basin Using a Hybrid ANN-GAN Model with Explainable AI (PG/E/WE/2024/02) - Ongoing
- S. Baskaran, 2025, Advancing Precision in Weather Forecasting for Kandy (PG/E/WE/2024/10) - Ongoing
- S.A.A.N. Abeywickrama, 2025, Multi-Reservoir Dam Breach Interactions (PG/E/WE/2024/09)- Ongoing
- E.M.Y.C. Ekanayake, 2025, Impact of Climate Change on Hydropower Generation in Upper Mahaweli Basin (PG/E/WE/2023/03) - Ongoing
- R.P.K.I.Somarathna, 2025, Mapping Suitable Zones for Groundwater Recharge in the Kelani River Basin Using Remote Sensing, GIS, and Analytical Hierarchy Process (PG/E/WE/2020/28)
- P.L.L.N. Perera, 2024, Development of an Integrated Numerical Model Set-Up for Forecasting Compound Floods in Low-Lying Coastal Areas: A Case Study for Kelani River Basin in Sri Lanka (PG/E/WE/2022/22)
- B.A.N. Jayalath, 2023, Analyzing the Water Quality and Quantity for Better Water Management Practices in a Tank Cascade System in Anuradhapura District, Sri Lanka (PG/E/WE/2019/10) (Co-Supervisor)
- S. Sadushan, 2023, Application of GIS & RS in Rain Water Harvesting Strategy: Case Study in Batticaloa District (PG/E/WE/2018/26)
- V.D. Athuraliya, 2023, Assessing the Impacts of Sea Level Rise on Salinity Intrusion in Kelani River, Sri Lanka (PG/E/WE/2020/01) (Co-Supervisor)
- M.M.M. Manas, 2022, Hydrodynamic Modelling of Puttalam Lagoon (PG/E/WE/2018/19) (Co-Supervisor)
- B.M.A.S.M. Balasooriya, 2022, Effects of Climate Change on The Variation of Rainfall Characteristics in the Kalu Ganga Catchment of Sri Lanka (PG/WE/2018/02)
- P.G.S. Gimhan, 2022, Forecasting Heavy Precipitation Events Over Badulu Oya Catchment Using the WRF-ARW Model (PG/E/WE/2020/08)

MEng

- G A M H K Abeykoon, 2025, Comparison of LSTM Neural Networks and Hydrological Models for Integrated Flood Forecasting in the Kelani River Basin (PG/E/WE/2024/01) (On going)
- U.H.M.S.Silva, 2024, Efficient Operation of Minipe Left Bank Canal Irrigation Scheme to Satisfy Irrigation Demands (PG/E/WE/2023/15)
- D.A.R. Daranagama, 2024, Impact of Precipitation Over Compound Flooding in Kelani River Basin, Sri Lanka (PG/E/WE/2022/06)

Postgraduate Diploma (Research)-PGDip

- E.M.N.T. Edirisooriya, 2020, Two-Dimensional Flood Inundation Modeling in Lower Kelani Basin (PG/Dip/19/04)
- W.M.L.K. Abeyratne, 2020, Clarification Efficiency of Plate Settlers and Tube Settlers Analysed by CFD Modelling (PG/Dip/19/03) (Co-Supervisor)

I hereby declare that the above mentioned particulars are true and accurate to the best of my knowledge.

Panduka Neluwala