Curriculum Vitae

Name: Thotapitiya Arachchillage Jeewanthi Gangani Sirisena

First Name: Jeewanthi

Date of Birth: October 5th 1984

Main Disciplines: Hydrological and hydraulic modelling, Water Resources Modelling,

Climate Change, GIS, Remote Sensing

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Key Qualifications

Have over twelve years of experience in executing local and international projects in the field of water resources management. Countries of work experience include Sri Lanka, Rwanda, Thailand, Myanmar, The Netherlands, India, and Egypt. I have advanced skills in data analysis, hydrological and hydraulic modelling, GIS analysis, and Satellite Data using a variety of tools on the full range of spatial scales from a smaller field to the entire river basin. I'm the lead author and co-author of many peer-reviewed papers and supervised master's and bachelor's students' theses.

Educational Background

Apr 2016 – Dec 2020   **Doctor of Philosophy in Hydrology and Water Resources**
University of Twente, The Netherlands
IHE Delft Institute for Water Education, The Netherlands

Aug 2011 – Dec 2013   **M.Eng in Water Engineering and Management**
Asian Institute of Technology, Thailand
GPA 3.98/4.0
M.Sc in Hydroprotech
University of Nice-Sophia Antipolis, France
GPA 16.6/20.0

Mar 2005 - Aug 2009   **B.Sc.Eng (Hons) in Civil Engineering**
University of Peradeniya, Sri Lanka
GPA 3.85/4.0 (First class honours)

Professional Experience

Oct 2022 – Present   **Researcher,** Climate Service Center (GERICS), Germany

July 2022 – Present   **Technical Advisor,** MACS Global Consultancy, Sri Lanka

Mar 2022 – Sep 2022   **Volunteer,** 510 Data and Digital Team, The Netherlands Red Cross

Mar 2021 – Feb 2022	**Postdoctoral Researcher,** University of Twente, The Netherlands
Jun 2014 – Apr 2016	**Research Engineer**, Lanka Hydraulic Institute Ltd, Sri Lanka
Oct 2014 - Jul 2015	**Visiting Lecturer**, Aquinas University College, Sri Lanka Subjects: Hydraulics and Hydrology (Diploma and B.Sc Levels)
Jul 2013 – Sep 2013	**Visiting Instructor**, Sirindhorn International Institute of Technology, Thammasat University, Thailand Subject: Environmental Studies (B.Sc Level)
Jun 2012 – Aug 2012	**Research Assistant**/ Intern for a flood modelling project, Regional Integrated Multi-Hazard Early Warning System, Asian Institute of Technology, Thailand
Aug 2009 - Aug 2011	**Irrigation Engineer**, Water Resources Planning Branch, Department of Irrigation, Sri Lanka

Selected Assignments and Projects

Duration: 2021 - 2022 **Position:** Sediment expert **Location:** India **Client:** Central Water Commission	***Consultancy services for physical-based mathematical modelling for estimation of sediment rate and sediment transport in seven (7) river basins, India*** **Project Description:** Main focus is to understand and with the existent data and state-of-the-art models to quantify sediment generation, transport and morphological developments, and to suggest possible measures/ interventions for integrated water and sediment management in the river basins **Activities Performed:** Data analysis, rainfall-runoff modelling, sediment erosion and transport modelling, report preparation
Duration: 2019 - 2020 **Position:** Hydrologist **Location:** Myanmar **Client:** The Ministry of Infrastructure and Water, The Netherlands	***Evaluation of globally available precipitation products for runoff simulation in the Irrawaddy River Basin in Myanmar*** **Project Description:** This study focuses on the estimation of catchment runoff using process-based modelling. It consists of the use of global precipitation data, model set-up, calibration and validation, streamflow simulation, and analysis. **Activities Performed:** Data analysis, all numerical modelling work, and port preparation
Duration: 2015 - 2016 **Position:** Research Engineer **Location:** Sri Lanka **Client:** National Water Supply and Drainage Board, Matara, Sri Lanka	***Matara Stage IV Water Supply Project: Construction of Salinity Barrier across Nilwala River*** **Project Description:** This study is providing the consultancy service for hydraulic study for "Construction of Salinity Barrier across Nilwala River" at the suitable location of 5 km upstream of the estuary under "Matara Stage IV Water Supply Project". The consultancy services consist of data collection, desk study, field investigation, hydrological/ hydraulic study, environmental study, design, and cost estimate. **Activities Performed:** Desk study, hydrological study, and 3D physical model testing
Duration: 2014 - 2016 **Position:** Research Engineer **Location:** Sri Lanka **Client:** Ministry of Urban Development, Water	***Strategic Cities Development Project: Consultancy Services for Design & Construction Supervision of Flood Mitigation in Galle Municipal Council Area*** **Project Description:** This study is providing Consultancy services which are performed in two Phases; Modelling and Design of drain networks and Construction supervision

Supply and Drainage, Sri Lanka	**Activities Performed:** Assessment of flooding conditions using Hydrological and Hydrodynamic modelling (Mike 11), Flood mapping (ArcGIS), Drainage Designs
Duration: 2014 - 2016 **Position:** Research Engineer **Location:** Rwanda **Client:** Feedback Infra Private Limited, India	***Consultancy Services for Feasibility Study for Multipurpose Development Project Nyabarongo II: Hydrological Study*** **Project Description:** The feasibility study for multipurpose development project Nyabarongo II explores the practicability of hydropower generation, marshland reclamation for irrigation, water supply for irrigation, industry & community and thereby builds an economic platform for directly uplifting the livelihoods of people. Data collection, desk study, and hydrological and climatological studies are the main project features identified and performed. **Activities Performed:** Desk study, Data analysis, Hydrological modelling, Reservoir simulation, Report writing (Two chapters)
Duration: 2014 - 2014 **Position:** Research Engineer **Location:** Sri Lanka **Client:** Tetra Tech Inc, Sri Lanka	***Consultancy Services for Preparation of Master Plan for Badulla, Haliela and Ella Integrated Water Supply Project: Hydrological Investigation*** **Project Description:** Consultancy services for Hydrological studies including flood and low flow analysis, sediment yield and assessment of reservoir operation **Activities Performed:** Hydrological modelling, Sediment yield estimation and assessment of reservoir water balance
Duration: 2012 - 2012 **Position:** Research Associate **Location:** Thailand **Client:** Royal Thai Government, Thailand	***Flood Forecasting model development*** **Project Description:** Forecasting model development for upper and lower Chao Phraya basins **Activities Performed:** Hydrological model setup, calibration, and validation for upper Chao Phraya River basin
Duration: 2009 - 2010 **Position:** Project Engineer **Location:** Sri Lanka **Client:** Government of Sri Lanka and Japan International Cooperation Agency (JICA)	***The Pro-Poor Economic Advancement and Community Enhancement Project (PEACE)*** **Project Description:** The rehabilitation of irrigation infrastructure in the Anuradhapura and Kurunegala districts is carried out under this project. The Irrigation department handles the design and construction of Irrigation canal network systems. **Activities Performed:** Surveying, Water allocation, design, and cost estimation of the irrigation canal system in Rajanganaya in Anuradhapura District.

Computer Skills

Numerical modelling: SWAT MIKE11 MIKE SHE HEC-HMS HEC-GeoRAS HEC-ReSim
OpenLISEM EPANPET SWIM

Programming: MATLAB PCRaster Python SQL

GIS/ Remote Sensing: ArcGIS QGIS Google Earth Engine

Standard software: MS Office PowerBI

Honours and Awards

Mar 2022	Travel Grant under Distinguished Women Scientists Fund (DWSF) from the Dutch Network of Women Professors (LNVH), The Netherlands

Oct 2016	Best poster presenter at Ph.D. Symposium 2016, IHE Delft, The Netherlands
Apr 2016 – Sep 2019	Ph.D. Scholarship from Netherlands Fellowship Programme (NFP), The Netherlands
Sep 2012 – Dec 2013	Scholarships of the French Regional Cooperation by the French Government, France

Other Experiences

Sep 2021 – June 2022	**(President)** The Hague University Toastmasters, The Netherlands
Feb 2020	**(Presenter)** IHE Delft – AIT Joint Scientific Workshop on Estimation of 21st Century Runoff and Fluvial Sediment Supply for the Irrawaddy River Basin, Myanmar, Asian Institute of Technology, Thailand.
Oct 2019	Participated in the summer course on Advanced Studies in Climate Extremes and Risk Management at Nanjing University of Information Science and Technology, China.
Dec 2018	**(Presenter)** 9th International Conference on Sustainable Built Environment, Kandy, Sri Lanka.
Sep 2018	**(Presenter)** 2018 International SWAT Conference, Brussels, Belgium
Oct 2017	**(Presenter)** Boussinesq Lecture 2017, Delft, The Netherlands.
Oct 2015	**(Presenter)** Technical paper programme, 109th Annual Session, The Institution of Engineers Sri Lanka (IESL), Sri Lanka.
Jul 2015	**(Presenter)** Regional Forum on Climate Change, Asian Institute of Technology, Thailand.
Oct 2014	**(Guest Lecturer)** Workshop on Hydraulic Applications, ESOFT College of Engineering and Technology, Katubedda, Sri Lanka.
Nov 2013	**(Presenter)** Advanced Water Management Technology, 2nd Joint conference between Thailand and K-water, Thailand.
Dec 2012 – Feb 2013	Participated Hydro Europe 2013, ERASMUS Intensive Programme – Euro IFM, University of Nice Sophia Antipolis, Nice, France.

Language Skills

Language	Speaking	Reading	Writing
English	Fluent	Fluent	Fluent
Sinhala	Mother Tongue	Mother Tongue	Mother Tongue
Dutch	Basic	Moderate	Basic

Publications

Peer-reviewed publications:

T.A.J.G. Sirisena, J. Bamunawala, R. Ranasinghe, and S. Maskey (2022). *Use of different modelling approaches to estimate the fluvial sediment supply to the coast at spatially heterogeneous basins*, Frontiers in Earth Sciences, Under Review

J. Sirisena, D. Augustijn, A. Nazeer, and J. Bamunawala (2022). *Use of remote-sensing based global products for agricultural drought monitoring in the Narmada Basin, India*, Sustainability, In Press

J. T. Samarasinghe, R. K. Makumbura, C. Wickramarachchi, **J. Sirisena**, M.B. Gunathilake, N. Muttil, F.Y. Teo, and U. Rathnayake (2022). *The Assessment of Climate Change Impacts and Land-use Changes on Flood Characteristics: The Case Study of the Kelani River Basin, Sri Lanka.* Hydrology, 9, 177, https://doi.org/10.3390/hydrology9100177

Aruna Randeniya, Mohanasundar Radhakrishnan, **T.A.J.G. Sirisena**, Ilyas Maish, and Assela Pathirana (2022). *Equity – performance tradeoff in water rationing regimes with domestic storage,* Water Supply, 22 (5): 4781–4797, https://doi.org/10.2166/ws.2022.188

Helani Perera, Shalinda Fernando, Miyuru B. Gunathilake, **T.A.J.G. Sirisena**, and Upaka Rathnayake (2022). *Evaluation of Satellite Rainfall Products over the Mahaweli River Basin in Sri Lanka*, Advances in Meteorology, 2022, https://doi.org/10.1155/2022/1926854.

T.A.J.G. Sirisena, S. Maskey, J. Bamunawala, E. Coppola, and R. Ranasinghe (2021). *Projected streamflow and sediment supply under changing climate to the coast of the Kalu River Basin in tropical Sri Lanka over the 21st century*, Water, 13(21), 3031. https://doi.org/10.3390/w13213031

J. Bamunawala, R. Ranasinghe, A. Dastgheib, R.J. Nicholls, A.B. Murray, P.L. Barnard, **T.A.J.G. Sirisena,** T.M. Duong, S.J.M.H. Hulscher, and A. van der Spek, (2021). *Twenty-first-century projections of shoreline change along inlet-interrupted coastlines*, Scientific Reports, 11, 14038. https://doi.org/10.1038/s41598-021-93221-9

T.A.J.G. Sirisena, S. Maskey, J. Bamunawala, and R. Ranasinghe (2021). *Climate change and reservoir impacts on 21st-century streamflow and fluvial sediment loads in the Irrawaddy River, Myanmar*, Front. Earth Sci. 9:644527. doi: 10.3389/feart.2021.644527

T.A.J.G. Sirisena, S. Maskey, and R. Ranasinghe (2020). *Hydrological model calibration with remote sensing-based evapotranspiration and streamflow data in a data-poor basin*. Remote Sens. 2020, 12(22), 3768, https://doi.org/10.3390/rs12223768

T.A.J.G. Sirisena, S. Maskey, R. Ranasinghe, and M.S. Babel (2018). *Effects of different precipitation inputs on streamflow simulation in the Irrawaddy River Basin, Myanmar*. Journal of Hydrology: Regional Studies, 19, 265–278, https://doi.org/10.1016/j.ejrh.2018.10.005

M.S. Babel, **T.A.J.G. Sirisena**, and N. Singhrattna (2016). *Incorporating large-scale atmospheric variables in long-term seasonal rainfall forecasting using Artificial Neural Networks: An application to the Ping Basin in Thailand"*, Journal of Hydrology Research, 48 (3), 867–882, https://doi.org/10.2166/nh.2016.212

Conferences:

D.P.C. Laknath, **T.A.J.G. Sirisena** (2017). *Sediment yield estimation on a reservoir in a severely eroding river basin*, 37th IAHR World Congress, Kuala Lumpur, Malaysia

D.P.C. Laknath, **T.A.J.G. Sirisena** (2016). *Application of hydrological study methodologies used in African context for water security in Asian Countries*, International Conference on Water Security and Climate Change: Challenges and Opportunities in Asia, Bangkok, Thailand

T.A.J.G. Sirisena, S.M.C.K. Subasinghe, V. Dharmadasa, D.E.N. Senarathne, D.P.L. Ranasinghe, K.D.W. Nandalal, K. Raveenthiran (2016). *Hydrological investigations to facilitate the design of Demodara Dam,* 20th IAHR-APD Congress, Colombo, Sri Lanka

T.A.J.G. Sirisena, C.N. Rajapaksha, D.E.N. Senarathne, I. Abeygoonasekara, K. Ariyarathne, K. Maiyourathaan, S. M. Hewavidana, T. M. N. Wijayaratna (2016). *Study on flood mitigation measures – Case study Galle Municipal Council Area*, 20th IAHR-APD Congress, Colombo, Sri Lanka

T.A.J.G. Sirisena, V. Dharmadasa, S.M.C.K. Subasinghe, D.P.L. Ranasinghe, K.P.P. Pathirana, K. Raveenthiran, T. Saravanapavan, R.S. Liyanage and H.N.R. Perera (2015). *Assessment of potential catchment soil erosion and sediment accumulation at the proposed Demodara Dam site, Sri Lanka*, Annual Sessions of IESL, Vol. 1(B), pp. 359-366

S.M. Hewavidana, **T.A.J.G. Sirisena**, V. Dharmadasa, D.E.N. Senarathne, S.M.C.K. Subasinghe, K. D. W. Nandalal, K. Raveenthiran, T. Saravanapavan, R. Liyanage and H.N.R. Perera (2015). *Probable Maximum Flood for the proposed Demodara Dam site, Sri Lanka,* Annual Sessions of IESL, Vol. 1(B), pp. 367-372

Referees

Deatails are provided upon request.