



1. Name and academic rank

Mohamed Reda Soliman, Ph.D.,
professor (full time)

2. Education – degree, discipline, institution, year

- **Doctor of Philosophy**, Department of Civil and Earth Resources Engineering, **Kyoto University, Japan, 2013.**
- **Master of Science**, Department of Irrigation Engineering and Hydraulics, Faculty of Engineering, **Alexandria University, Egypt, 2006.**
- **Bachelor of Engineering**, Civil Engineering Department, Faculty of Engineering, **Alexandria University, Egypt, 2002.**

3. Academic experience

- **Professor**, Civil and Environmental Engineering Department, Beirut Arab University, Lebanon, (2/2026-Present).
- **Associate Professor**, Civil and Environmental Engineering Department, Beirut Arab University, Lebanon, (9/2023-2/2026).
- **Assistant Professor**, Civil and Environmental Engineering Department, Beirut Arab University, Lebanon, (9/2018-9/2023).
- **Associate Professor**, Irrigation & Hydraulics Department, *Faculty of Engineering, Alexandria University*, Egypt, (5/2020- 2/2026).
- **Visiting Assistant Professor**, Construction Engineering Department, *Arab Academy for Science, Technology & Maritime Transport*, Egypt, (2/2017-8/2018).
- **Assistant Professor (Lecturer)**, Irrigation & Hydraulics Department, Faculty of Engineering, Alexandria University, Egypt, (10/2013- 2/2017).
- **Research Assistant & PhD student**, Civil and Earth Resources Engineering, Kyoto University, Japan, (10/2010 – 9/2013).
- **Assistant Lecturer, Irrigation & Hydraulics Department**, Faculty of Engineering, Alexandria University, Egypt, (12/2006-10/2010).
- **Demonstrator & M.SC. Student**, Irrigation & Hydraulics Department, Faculty of Engineering, Alexandria University, Egypt, (10/2002 - 11/2006).

4. Non-academic experience

- **Part time Consultant Engineer**, Ministry of Irrigation and Water Resources, Egypt, (10/2015-6/2017).
- **Part time Consultant Engineer**, Prof. Alaa Yassin Consultancy office, Egypt, (10/2013 – 9/2015).
- **Part time Senior Engineer**, Engineering Consultancy Center, Egypt, (8/2008 – 9/2010).
- **Part time Engineer**, Prof. Hamdy Seif Environmental Consultancy office, Egypt, (10/2002 – 9/2010).
- **Part time consultant Engineer in leading consulting companies in Egypt** (Team member participated in design the following projects).
- **The Flood Mitigation Measures in Ras Al Khaimah, UAE**, Town of Munay & its surrounding (Including Sahaynah), Town of Al Qor and its surrounding, Town of Huwaylat and its

2024-2025



surrounding (Including Fashrah, Faha, Rafaq, and Al Husayn), Border area between UAE and Oman (Um Algaf).

- Rainfall analysis, 2D hydrological study, Flood risk Hazard using HEC-RAS
- **Wells Irrigation system Hydrological Analysis for South-Med Resort Lagoons, Talet Moustafa Group, Ras ELhekma, Egypt.** 2024
- Groundwater flow simulations using Visual Modflow
- **Design of sewerage, water supply, firefighting and Irrigation networks – MARCELIA BEACH 5, Alexandria** 2024
- WaterCAD & SEWERCAD
- **Hydrological study of Jazan City, Kingdom of Saudi Arabia.**
- IDF curves – Stream flow – Rainfall Statistical analysis 2023 - 2024
- Hyfran – StormCAD – WMS – ARC GIS – Flow Master
- **Design of landscape irrigation network– Cola Square – Beirut, Lebanon.** 2020
- Drip automated irrigation system network.
- **Design of Design of sewerage, water supply, firefighting and Irrigation networks – New Multipurpose terminal 630 – Damietta Harbour** 2018
- **Design & shop drawings of landscape irrigation network– Carfour city center – Maged Alfutum – Alexandria, Egypt. Drip and sprinkler automated irrigation system network.** 2018
- **Design of sewerage and water supply networks – WASTEWATER TREATMENT PLANTS– National Fisheries and Aquaculture Company:** 2016-2018
- **Design of Fire fighting intake pump station, Alexandria petroleum Co., Alexandria, Egypt.** 2018
- **Design of sewerage, water supply, firefighting and Irrigation networks – MARCELIA BEACH 4, El-Alameen, Alexandria** 2017
- **Shoreline protection study for Portsaid Fish farm intake – National Fisheries and Aquaculture Company.** 2017
- Longshore sediment transport simulation Using MIKE LITPACK and Delft 3D.
- Shoreline retreat/advance prediction due to intake.
- **Seashore protection against seagrass – Garawella Resort – Marsa Matrouh, Egypt.** 2017
- **Dewatering analysis for KILOPATRA TUNNEL, Alexandria, Egypt.** 2017
- **Water quality study of inland lagoon – Garawella Resort – Marsa Matrouh, Egypt.** 2016
- **Protection of Midor pipeline against storm water- Middle East Oil Refinery – Alexandria Egypt.** 2016



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- **Design of Industrial wastewater treatment plant, Fine foods company, Borg El-Arab, Egypt.** 2015
 - **Rehabilitation of the sewerage and water supply system of Saint Mark's Hospital, Alexandria, Egypt.** 2015
 - **Hydrodynamics and ecological study of lagoons of Marassi Resort, El-Almeen, Marsa Matrouh, Egypt, Emaar Misr.** 2015
 - **Construction of El-But canal, connecting the River Nile to Manzala lake including Water crossing structures (Syphon - Culvert), General Authority for Fish Resources Development, Damietta, Egypt.** 2015
 - **Rehabilitation of El-Ahrar Road, Alexandria Egypt.** 2015
 - Design of road geometry, Bridges expansion, and Drainage water culverts.
 - **Protection Culvert for Oil pipeline, Middle East Oil Refinery (Midor), Alexandria, Egypt.** 2015
 - **Design of El-Romana Fishing quay wall - GAFRD_ General Authority for Fish Resources Development, North Sinai Governorate, Egypt.** 2014
 - **Hydrological study and drainage system of Namariq Camp and Services Project-Jazan Economic City, (Kingdom of Saudi Arabia).** 2014
 - **Hydrological study and Flood protection management for ZULFI and GHAT Cities (Kingdom of Saudi Arabia).** 2013- 2015
 - **Design of shore protection structures and their environmental (MIKE 21 & PLAXIS)**
 - Planning, design for opening vents for flow circulation and design of shore protection works and environmental study for Abu-Qir thermal power plant intake basin breakwater, EGYPT. (Design of breakwater including geotechnical analysis) 2010
 - Planning, design for opening vents for flow circulation and design of shore protection works and environmental study for Cleopatra Lake.
 - **Design of TERHONA water supply pipelines including surge analysis**
Design of Hydraulic Analysis, Longitudinal profile. 2009
Air, washout, and Isolation Chambers.
Air chambers.
 - **Design of ZAKI crossing (El-Kaliobia Governorate, EGYPT)** 2008-2009
Design of Hydraulic Jacking Pre-stressed Culvert under Alex- Cairo highway and Railway.
Design of cars tunnel under Alex- Cairo highway and Railway.
 - **Design of dewatering systems (Deep-Shallow-Surface drainage)** 2008
El-Kornish tunnels (Luran – Sporting – Khalid Abn El-Walid)- under construction.
Borg El-Arab sewer pipeline installation.
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- **Design of sewerage and water supply networks**

Domestic residential buildings (City light complex - Delta Stars – El-Montaza Hotel)

New resorts (Alex west- Neas – Elshikh Zaid city).

Factories (Pepsi cola Misr – Dream Company).

2004-2010

Red Sea Ports (El-Adbia port– Suez Port – Safaga port) - Alex port.

Railway Stations (Sidi Gaber Station (Alex) – Cairo Station).

El-kbari Bus Station (Alex).

- **Flood protection for ZULFI city (Kingdom of Saudi Arabia)**

Member in Design of Dams, flood channels, highway Culverts, and flood walls (Levees).

2002-2004

5. **Current membership in professional organizations**

- Member of the Egyptian Syndicate of Engineers (Cairo), (08/2002- present)
- Member of Japan society of civil engineers, JSCE, (2010-2013).

6. **Honors and awards**

- Japanese Government (MEXT) Scholarship (doctoral level) (10/2010-09/2013).
- KYODAI full fund internship to attend the 18th IAHR-APD conference, 2011.
- Full fund internship to attend the 19th UNESCO IHP training course, Kyoto University, 2009.
- Postgraduate scholarship (Master's level), Alexandria University, Egypt (09/2002- 12/2006).
- Faculty of Engineering yearly certificate of appreciation, Alexandria University, Egypt (1998, 1999, 2000, 2001, 2002).
- Knsoah's award of the Excellence in Hydraulics, Faculty of Engineering, Alexandria University, Egypt, 2001.

7. **Research interests**

- Numerical simulation of shallow coastal lakes (hydrodynamics, sediment transport, and ecological studies).
- Hydrological numerical modeling.
- Integrated Coastal zone management and climate change adaptation.
- Parallel programming using MPI and OpenMP using FORTRAN.
- Sediment transport under current and wave actions.
- Coastal lakes limnology including hydrodynamics and water quality.
- Multi-phase flow numerical modeling with solid interaction.
- Experimental work and physical model formulation.



8. Publications and presentations from the past five years

Journal publications

- Fouadi AlZaatiti, Jalal Halwani, Nabil Amacha, Mohamad Ezzedine El Dandachy, Rayan Najjar, **Mohamed R. Soliman**, Coupled RRI–WEAP framework for integrated water balance and quality assessment under climate change and population growth in Abou Ali River basin, *Environmental Challenges*, Volume 24, 101563, 2026, <https://doi.org/10.1016/j.envc.2026.101563>.
- Joumblat, R., Al-Smaili, A. a. M., de Medeiros Melo Neto, O., Youssef, A. M., & **Soliman, M. R.** (2026). Cooling and Hydrological Performance of Porous Asphalt Pavements: A State-of-the-Art Review for Urban Climate Resilience. *Sustainability*, 18(8), 3836. <https://doi.org/10.3390/su18083836>
- Meleha, Shima, A. L. Y. Ahmed, EL-ANSARY Ahmed, and **Mohamed SOLIMAN** (2026). Performance of Water Delivery by Direct Pumping System at Farm Level: Case Study of Abu-Gabal Tertiary Canal, Egypt. *Advanced Multidisciplinary Engineering Journal (AMEJ)*, 2(2), 32-39.
- Tadmouri, Rida; Shaban, Amin; and **Soliman, Mohamad** (2025) "Toward Sustainable Water Security: A Novel Assessment And Recharge Strategy for North Bekaa Plain," *BAU Journal - Science and Technology*: Vol. 7: Iss. 1, Article 6. <https://doi.org/10.54729/2959-331X.1169>
- Fouadi AlZaatiti, Jalal Halwani, **Mohamed R. Soliman**, Climate change impacts on flood risks in the Abou Ali River Basin, Lebanon: A hydrological modeling approach, *Results in Engineering*, Vol. 25, 104186, 2025. DOI: <https://doi.org/10.1016/j.rineng.2025.104186>
- **Mohamed Soliman**, Hadi Jawad, Mariam Younes, Oussama El Hamawi, Saadeddine Ramadan, A Strategic Framework for Attaining Golden LEED Certification for Resorts", *BAU Journal - Science and Technology*, Vol. 5, Iss. 2, Article 6, 2024. DOI: <https://doi.org/10.54729/2959-331X.1126>
- Hussien Fayed, Safaa Baydoun, **Mohamad Reda Soliman**, Preliminary Water Quality Assessment Using Canadian Water Quality Index of Ras El-Ain Natural Pond, Ras El-Ain, South Lebanon, *BAU Journal - Science and Technology*: Vol. 5: Iss. 1, Article 5, 2023. <https://doi.org/10.54729/2959-331X.1096>.
- Milad Khatib, Maher Kahil, **Mohamed Reda Soliman**, Restoration of Qaraoun Lake Aquatic Life Based on Wetland Treatment Concept, *Heliyon*, Vol. 9 (7), 2023. <https://doi.org/10.1016/j.heliyon.2023.e18169>.
- Abou Slaymane, R., **Soliman, M.R.** Integrated water balance and water quality management under future climate change and population growth: a case study of Upper Litani Basin, Lebanon. *Climatic Change* 172, 28 (2022). <https://doi.org/10.1007/s10584-022-03385-0>.
- Mohamad Diab, **Mohamad Soliman** "Investigating the Proper Use of Litani River Basin Based on Water Quality," *BAU Journal - Science and Technology*: Vol. 3: Iss. 2, Article 10, 2022. DOI: <https://www.doi.org/10.54729/FVAI6018>.
- H. Abdelmoneim, **M. R. Soliman**, H. M. Moghazy: Hydrologic Assessment of the Uncertainty of Six Remote Sensing Precipitation Estimates Driven by a Distributed Hydrologic Model in the Blue Nile Basin, T. Sumi et al. (eds.), *Wadi Flash Floods, Natural Disaster Science and Mitigation Engineering: DPRI Reports*, 2022. https://doi.org/10.1007/978-981-16-2904-4_8
- Ibrahim M. Abd-Elmonem, Tarek I. Abediob, Khaled A. Kheireldin, **Mohamed R. Soliman**: Assessment of Coastal Revetment: Case study of Rosetta Revetment, *Ain Shams Engineering Journal*, Volume 13 (3), 2022. <https://doi.org/10.1016/j.asej.2021.10.018>
- Hadir Abd-El Moneim, **Mohamed Reda Soliman**, Hossam M. Moghazy: Evaluation of TRMM 3B42V7 and CHIRPS Satellite Precipitation Products as an Input for Hydrological Model over Eastern Nile Basin, *Journal of Earth Systems and Environment* Volume 4 (4), 685–698, 2020. <https://doi.org/10.1007/s41748-020-00185-3>
- Y. Itani, **M. R. Soliman**, M. Kahil, Recovering energy by hydro-turbines application in water transmission pipelines: A case study west of Saudi Arabia, *Energy*, Vol. 211, 2020. <https://doi.org/10.1016/j.energy.2020.118613>
- Diaa Seif, Mahmoud Nasr, **Mohamed R. Soliman**, Medhat Moustafa, Walid Elbarki: Water quality analysis and model simulation for the second largest polluted lake in Egypt, *International Journal of Engineering and Technology* 7(3): 1762-1767, 2018.



- Daa Seif, Medhat Moustafa, **Mohamed Soliman**: Water Quality Enhancement in Ponds Using Baffles, Burullus in Egypt as a Case Study, European Scientific Journal 14(18), 2018.
- Daa Hamdy Seif, **M. R. Soliman**, Medhat Moustafa & Walid Elbarki: Study of Convert Waste Stabilization Pond Geometry to Treated Wastewater Efficiency, (ElBurullus Lake, Egypt) As a Case Study, Proc. of 10th IRCSE & 8th ICSE, UAE, 2018.
- A. Abu Zed, **M.R.Soliman** and A.A.Yassin: Evaluation of using satellite image in detecting long term shoreline change along El-Arish coastal zone, Egypt, Alexandria Eng. Journal, 2018.
- Hadir Abd El Moneim, **M. R. Soliman** and Hossam M. Moghazy: Numerical simulation of Blue Nile basin using distributed hydrological model, Proc. of the 11th International conference: Role of Engineering towards a better environment, Alexandria, Egypt, 2017.
- A.M.Khalifa, **M.R.Soliman** and A.A.Yassin: Numerical Simulation of Coastal Sediment Trap to Adapt with Navigation Channel Siltation, Proc. of the 11th International conference: Role of Engineering towards a better environment, Alexandria, Egypt, 2017.
- A.M. Khalifa, **M. R. Soliman**, A.A. Yassin: Assessment of a combination between hard structures and sand nourishment eastern of Damietta harbor using numerical modeling, Alexandria Eng. Journal, 2017. <https://doi.org/10.1016/j.aej.2017.04.009>.
- Shima M. Meleha, **M. R. Soliman**, Ahmed El-ANSARY and Ahmed M. Ali: Hydraulic Assessment of Abu-Gabal Improved Mesqa System, a case study of Kafr El-Dawar, in the Nile Delta, Second Annual Conference of Community service & Environmental Development Sector, Fayum, Egypt, 2017.
- O. Ajdayat, **M. R. Soliman** and A. A. Yassin: Hydrological simulation of arid areas- Case study: Wadi Kufa, Libya, Second Annual Conference of Community service & Environmental Development Sector, Fayum, Egypt, 2017.
- **M. R. Soliman**, S., Ushijima, Kantoush, S.: Density current propagation in a tidal river, Proceedings of River Flow 2014, Lausanne, Switzerland, 2014.
- **M. R. Soliman** and S. Ushijima: Current- and wave-induced non-equilibrium sediment transport model based on MACS algorithm, Proc. of the 12th International Symposium on River Sedimentation, ISRS, Advances in River Sediment Research, Taylor & Francis Group, London, pp. 1319-1325, 2013.
- **M. R. Soliman**, S., Ushijima and I., El-shinawy: Re-originate Burullus coastal lake's ecosystem using salinity dynamics as a management tool, Ocean & Coastal Management Journal, Vol. 85, pp. 7-18, 2013.
- **M. R. Soliman**, S., Ushijima, N. Miagi and T., Sumi: Density current simulation using two-dimensional high-resolution model, Journal of DPRI annuals, No. 56B, 2013.
- **M. R. Soliman** and S. Ushijima: Climate Change Impact on El-Burullus Lake Salinization Process, Journal Hydraulic Engineering, JSCE, Ser.B1, Vol. 69, No. 4, I_253-I_258, 2013.
- **M. R. Soliman**, S., Ushijima: Equilibrium and non-equilibrium sediment transport modeling based on parallel MACS algorithm, Journal of Applied Mechanics, JSCE, Vol. 69, No. 2, I_79-I_86, 2013.

Conference proceedings

- **Mohamed Soliman**, Water Balance Modeling of The Nile River Behind Aswan High Dam and The Future Expectation, proceeding the 8th Europe congress, Lisbon, Portugal, 2025.



- Shima Meleha, Ahmed Aly, Ahmed El-Ansary, **Mohamed Soliman**, Performance of Water Delivery by Direct Pumping System at Farm Level: Case Study of Abu-Gabal Tertiary Canal, Egypt, proceeding the 8th Europe congress, Lisbon, Portugal, 2025.
- **Mohamed Soliman**, Ibrahim Barakeh, Simulation of Saltwater Intrusion into The Coastal Aquifer of Al-Bared Area, proceeding the 8th Europe congress, Lisbon, Portugal, 2025.
- Fouadi ALZAATITI, Jalal HALWANI, Najib NICOLAS GERGES, **Mohamed SOLIMAN**, Flood Simulation using rainfall-runoff-inundation (RRI) model, over Tripoli City, Lebanon, Materials Research Proceedings, Vol. 48, pp 670-677, 2025. DOI: <https://doi.org/10.21741/9781644903414-73>
- Rida Tadmouri, Amin Shaban, Khaled Baghdady, **Mohamed R. Soliman**, 2023, Groundwater Recharge Potential and Identifying Suitable Aquifer Recharge Techniques in the Bekaa Plain, Lebanon, Proc. of 5th Arab Water Conference, Riyadh, 2023, pp. 286 - 297.
- Mohamed I.S. Elmasry, **Mohamed Reda**, Mina K. A. Kald: Stability-Based Comparison between MRWT & SRWT for Optimized Design of Offshore Wind Farms, International Conference on Advances in Structural and Geotechnical Engineering, 15-18 March 2021, Hurghada, Egypt.
- M.A. Halima, A. Soliman, **M. R. Soliman**: Sedimentary dynamics of a tidal inlet, Proc. Of the 14th MEDCOSAST international Congress on Coastal and Marine Sciences, Engineering, Management and Conservation, Marmaris, Turkey, 2019.
- Awad, A. Soliman, **M. R. Soliman**: Investigating of using synthetic geotextile as an artificial submerged breakwater, Proc. Of the 14th MEDCOAST international Congress on Coastal and Marine Sciences, Engineering, Management and Conservation, Marmaris, Turkey, 2019.
- Hadir Abd-El Moneim, **Mohamed Reda Soliman**, Hossam M. Moghazy: Hydrologic Evaluation of TRMM Multi-satellite Precipitation Analysis Products over Blue Nile Basin, Proc. Of 2nd international conference of chemical energy and Environmental Engineering, Alexandria, Egypt, 2019.
- Omnia M. Shalby, **M. R. Soliman**, H. M. Moghazy and W. R. Elsayed: Assesment of the current status of Lake Manzala, Egypt, Proc. of international conference on civil and environmental Engineering, Hurghada, Egypt, November 2018.
- **M. R. Soliman**, S. Ushijima, and N. Miagi: Two-Dimensional High-Resolution simulation of Brackish Lakes, Proc. of computational Engineering conference, Vol.18, 2013.
- S. Ushijima, D. Toriu, H. Yamashita and **M. R. Soliman**: Multiphase modeling for fluid-structure interactions with high-performance parallel computations and their application to hydraulics problems, Proc. 2nd Je-Hydronet Symposium, Cairo: on the Nile River system and the Delta of Egypt, pp.15-16, 2012.
- **M. R. Soliman** and S. Ushijima: Two-dimensional salinity simulation of El-Burullus shallow coastal lake using parallel MACS algorithm: Proc. of computational Engineering conference, Vol.17, B-4-4, 2012.
- **M. R. Soliman** and S. Ushijima: 2D morphological model using parallel MACS algorithm, Proc. of 18th IAHR-APD, S4C-6, USB, 2012.
- D. Toriu, S. Ushijima and **M. R. Soliman**: 3D parallel multiphase computational method for local scouring downstream of hydraulic jump, Proc. 18th IAHR-APD, PS5-43, USB, 2012.
- **M. R. Soliman**, S. Ushijima and I. El-Shinnawy: Two-dimensional hydrodynamic/transport model of Burullus lagoon, Egypt, Proc. 2nd Japan - Egypt Hydro Network, Cairo: on the Nile River system and the Delta of Egypt, 2012.
- S. Ushijima and **M. R. Soliman**, integrated coastal zone management in Egypt: Proc. 1st Je-Hydronet Symposium, Kyoto: Modern methodologies for the management, monitoring and planning of integrated water resources in Nile Delta, pp. 241-243, 2010.



9. Most recent professional development activities

Training

- “Leadership and Strategic Thinking”, Faculty and Leadership Development Project, Alexandria University, Egypt, August 2023.
- “Executive Leadership Development”, Faculty and Leadership Development Project, Alexandria University, Egypt, August 2023.
- “University Laws and Regulations”, Faculty and Leadership Development Project, Alexandria University, Egypt, July 2023.
- “Funded Research Implementation and Research Team Management”, Faculty and Leadership Development Project, Alexandria University, Egypt, April 2020.
- “International Publishing of Research”, Faculty and Leadership Development Project, Alexandria University, Egypt, April 2020.
- “E – Exams”, Faculty and Leadership Development Project, Alexandria University, Egypt, April 2020.
- “Legal and Financial Aspects in University”, Faculty and Leadership Development Project, Alexandria University, Egypt, April 2020.
- “Competitive Research Projects Proposals”, Faculty and Leadership Development Project, Alexandria University, Egypt, April 2020.
- “Design and Production of Digital Content”, Faculty and Leadership Development Project, Alexandria University, Egypt, April 2020.
- “21st UNESCO IHP training”, October 2011, Kyoto, Japan.
- “19th UNESCO IHP training”, October 2009, Kyoto, Japan.