Maikel Méndez-M

Civil and Environmental Engineer (M.Sc.)

- San José, Costa Rica
- May/1975
- Single

Skills

Skill	Experience
Water Resources - Management	20+ yrs.
Physical and Numerical Modelling	20+ yrs.
Remote Sensing (RS)/ Geographic Information Systems (GIS)	15+ yrs.
Data Science/ Machine Learning	10+ yrs.
Computational - Fluid Dynamics	8+ yrs.
Climate Change	8+ yrs.
Water and Wastewater Treatment	6+ yrs.
Irrigation Hydrogeology and Drainage	3+ yrs.

Language: Spanish L1

Language: English C2

Biography

Maikel Méndez is a Senior Lecturer and Reseracher in the field of Water Resources at the Construction Engineering School, Costa Rica Institute of Technology (TEC). Maikel's research focuses on Climate Change, Hydrological Modelling, Remote Sensing, GIS Integration, Machine Learning, Data Mining and Computational Fluid Dynamics. Maikel is the leading author of various scientific publications that have contributed in finding solutions to complex problems and have also been incorporated in Costa Rican legistion.

Work experience

Professor | Researcher — 06/2005 - Today

Construction Engineering School
Instituto Tecnológico de Costa Rica

Research in the areas of: Water Resources Management, Climate Change and Data Science. Lectures on: Hydraulics and Fluid Mechanics, Hydrology, Applied Statistics and Numerical Mathematics.

Trainer - Course name — XX/XXXX - XX/XXXX

Department of Lipsum (Prof. Name)
University of Lipsum

Here you can describe your work content and go into detail about individual parts of this job. Possibly an enumeration by means of "," is useful. Otherwise, describe the essential content of this item in 1-2 sentences.

Trainer - Course name — XX/XXXX - XX/XXXX

Department of Lipsum (Prof. Name)
University of Lipsum

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Trainer - Course name — XX/XXXX - XX/XXXX

Department of Lipsum (Prof. Name)
University of Lipsum

Here you can describe your work content and go into detail about individual parts of this job. Possibly an enumeration by means of "," is useful. Otherwise, describe the essential content of this item in 1-2 sentences.

Part-time research assistant — XX/XXXX - XX/XXXX

Department of Lipsum (Prof. Name)
University of Lipsum

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Internship — XX/XXXX - XX/XXXX

Department
Company name (Location)

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Education

06/2009 - 07/2010

Geo-Information Science and Earth Observation (Postgraduate Degree)

Faculty of Geo-Information Science and Earth Observation (ITC). University of Twente, Enschede, The Netherlands

Geostatistics ▪ R + Python Programming

Thesis: „Parameterization and sensitivity analysis of the EPA-SWMM model for an urban catchment using Remote Sensing and PEST".

09/2001 - 06/2003

Civil and Environmental Engineering (M.Sc.)

Arizona State University (ASU), Tempe, United States of America

Numerical Modelling ▪ Hydrogeology

Thesis: „An evaluation of the membrane fouling index (MFI) and its relevance to predict clogging in porous media".

02/1993 - 02/1998

Agricultural Engineering (B.Sc.)

Instituto Tecnológico de Costa Rica, Campus Cartago, Costa Rica

Irrigation ▪ Drainage

Thesis: „Reservoir waterproofing of the Río-Lajas hydropower plant".

Computer Skills

- GIS, Remote Sensing: GRASS, IDRISI, ILWIS, SAGA, QGIS
- Water Resources and Hydraulics: ModFLOW, HBV, HEC-HMS/RAS, TOPMODEL, SWAT, SWMM
- Statistics and GeoStatistics: R, Python, Matlab
- Computational Fluid Dynamics: OpenFOAM, COMSOL
- Climate Change: PRECIS, CORDEX

Student assistant XX/XXXX - XX/XXXX

Department of Lipsum (Prof. Name)
University of Lipsum

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Trainer - Course name XX/XXXX - XX/XXXX

Department of Lipsum (Prof. Name)
University of Lipsum

Here you can describe your work content and go into detail about individual parts of this job. Possibly an enumeration by means of "," is useful. Otherwise, describe the essential content of this item in 1-2 sentences.

Working student XX/XXXX - XX/XXXX

Department
Company name (Location)

Here you can describe your work content and go into detail about individual parts of this job. Possibly an enumeration by means of "," is useful. Otherwise, describe the essential content of this item in 1-2 sentences.

Publications

- Mendez, M., Maathuis, B., Hein-Griggs, D. & Alvarado-Gamboa, L.F. (2020). "Performance evaluation of bias correction methods for climate change monthly precipitation projections over Costa Rica". In: *Water*, 12(2), 482, 2020. https://doi.org/10.3390/w12020482.
- Mendez, M. & Calvo-Valverde, L.A. (2020). "Comparison performance of machine learning and geostatistical methods for the interpolation of monthly air temperature over Costa Rica". In: *IOP Conference Series: Earth and Environmental Science (EES)*, 432, 2020. https://doi.org/10.1088/1755-1315/432/1/012011.
- Arriola-Valverde, S., Villagra-Mendoza, K., & Mendez, M. (2020). "Analysis of Crop Dynamics through Close-Range UAS Photogrammetry". In: *IEEE International Symposium on Circuits and Systems (ISCAS)*, 2020. https://doi.org/10.1109/ISCAS45731.2020.9181285.
- Mendez, M., Maathuis, B., Hein-Griggs, D. & Alvarado-Gamboa, L.F. (2019). "Generation of Monthly Precipitation Climatologies for Costa Rica Using Irregular Rain-Gauge Observational Networks". In: *Water*, 11(1), 70, 2019. https://doi.org/10.3390/w11010070.
- Hernandez-Castro, F., Monge-Fallas, J., Mendez, M. & Segura-Solis, D. (2019). "Costa Rica: Visualization of the Movements of the Earth's Crust". In: *PONTE. International Journal of Sciences and Research*, 75, 2019. https://doi.org/10.21506/j.ponte.2019.4.1.
- Mendez, M. & Calvo-Valverde, L.A. (2019). "Comparison of global and local optimization methods for the calibration and sensitivity analysis of a conceptual hydrological model". In: *Tecnología en Marcha*, 32, 24-36, 2019. https://doi.org/10.18845/tm.v32i3.4477.
- Arriola-Valverde, S., Villagra-Mendoza, K., & Mendez, M. (2019). "Desarrollo y Validación de una Metodología para la Cuantificación de la Erosión Hídrica a través de Fotogrametría UAS". In: *Tecnología en Marcha*, 32, 43-52, 2019. https://doi.org/10.18845/tm.v32i5.4171.
- Hernandez-Castro, F., Monge-Fallas, J., Mendez, M. & Protti-Quesada, M. (2018). "Animation: Crustal Deformation in the Nicoya Peninsula Associated with the September 5th, 2012 Earthquake". In: *Scientific Visualization*, 10(3),

Contact

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github.com/maikelonu

www.youtube.com/maikelmendez

orcid.org/0000-0003-1919-141X

scholar.google.com/maikelmendez

2018.
https://doi.org/10.26583/sv.10.3.09.

- Mendez, M. & Calvo-Valverde, L.A. (2016). "Development of the HBV-TEC Hydrological Model". In: *Procedia Engineering*, 154, 1116-1123, 2016. https://doi.org/10.1016/j.proeng.2016.07.521.
- Mendez, M. & Calvo-Valverde, L.A. (2016). "Assessing the performance of several rainfall interpolation methods as evaluated by a conceptual hydrological model". In: *Procedia Engineering*, 154, 1050-1057, 2016. https://doi.org/10.1016/j.proeng.2016.07.595.
- Mendez, M. (2014). "Hydrologic and Hydraulic Assessment of Small Tropical Urban Catchments: A Case Study in Costa Rica". In: *Proceedings of the 13th International Conference on Urban Drainage*, 15-16, 2014. https://doi.org/10.1016/j.proeng.2016.07.595.
- Mendez, M. (2014). "Diseño óptimo de un sistema de distribución de agua (SDA) aplicando el algoritmo Simulated Annealing (SA)". In: *Tecnología en Marcha*, 23-31, 2014. https://doi.org/10.18845/tm.v27i3.2063.
- Mendez, M., Araya, J.A., & Sánchez, L.D. (2013). "Automated parameter optimization of a water distribution system". In: *Journal of Hydroinformatics*, 15 (1), 71-85, 2013. https://doi.org/10.2166/hydro.2012.028.
- Mendez, M. (2013). "Calibración y validación del modelo hidrológico SWMM en cuencas hidrográficas de alta pendiente en Costa Rica". In: *Tecnología en Marcha*, 20-32, 2013. https://doi.org/10.18845/tm.v26i2.1400.
- Mendez, M. (2013). "Predicción del impacto del cambio temporal del uso del suelo sobre cuencas hidrológicas de alta pendiente en Costa Rica". In: *Tecnología en Marcha*, 13-25, 26, 2013. https://doi.org/10.18845/tm.v26i3.1514.
- Mendez, M. (2013). "Generación de Modelos de Elevación Digital (DEMs) a partir de análisis fotogramétrico haciendo uso de las imágenes CARTA-2005". In: *Tecnología en Marcha*, 26-31, 26, 2013. https://doi.org/10.18845/tm.v26i4.1578.
- Mendez, M. (2008). "Modelación Asistida de Sistemas de Distribución de Agua (MASDA). Caso de estudio: Acueducto Marsella". In: *Tecnología en Marcha*, 79-91, 21, 2008.
- Mendez, M. (2007). "Modelación Asistida de Sistemas de Distribución de Agua (MASDA). Caso de estudio: campo/escuela Scout de Costa Rica". In: *Tecnología en Marcha*, 12-23, 19, 2007.

Modified, 11th October 2022

Maikel Mendez-M