

Mario A. Ponce-Pacheco

Hydrology – Data Science – Software development

 Delft, The Netherlands  mappacheco24@gmail.com   +31 6 1389 6357  +52 55 3218 1187
 [mario-ponce-pacheco](#)  [marioponce](#)  [marioponce.github.io](#)  0009-0000-1881-051X

EXPERIENCE

[Technische Universiteit Delft – Faculty Of Civil Engineering and Geosciences](#)

April 2024 – September 2024

Project Manager / Teaching Assistant

I collaborated in organizing the faculty's biggest course: [Modelling, Uncertainty, and Data for Engineers \(MUDE\)](#). 300 students take it, and around 30 lecturers and Teaching assistants are involved.

Supervisor: [Robert Lanzafame](#) (r.c.lanzafame@tudelft.nl)

Technologies: Python, Django

[Technische Universiteit Delft – Water Management](#)

Jan 2023 – March 2024

Researcher / BackEnd developer

I developed the bac-kend of [MAKARA](#), an app implementing a socio-hydrological model in Maharashtra, India. Developed a robust API for front-end communication and automated climatic data processing.

Supervisor: [Saket Pande](#) (s.pande@tudelft.nl)

Technologies: Python, Django REST, Linux

[BairesDev](#)

Jun 2021 – Aug 2022

Python Engineer

Responsible for implementing Machine Learning algorithms to improve the performance of a cooking robot for the client [Miso Robotics](#).

Technologies: Python, C++, ROS, pytest, Linux

[Tata Consultancy Services](#)

Sep 2020 – Jun 2021

Software Engineer

Responsible for giving support in Linux systems to financial projects. I got also training in AWS technologies.

Technologies: Python, AWS, Linux

[Soluciones en Ingeniería y Tecnologías del Agua](#)

Nov 2018 – Aug 2020

Hydrology and Hydroinformatics Consultant

Oversaw hydrological modelling, and flood simulations, and devised mitigation solutions for a Protected Natural Area.

Technologies: Python, IoT, R, Raspberry, Arduino, QGIS, HEC-RAS, Linux.

[Deltares](#)

May 2018 – Sep 2018

Intern

Managed the processing of raster files and spatial time series, with a focus on down/up-scaling; which now it's part of a commercial toolbox. Conducted runoff simulations for European basins, considering diverse climate change scenarios using Wflow.

Supervisor: [Albrecht Weerts](#) (albrecht.weerts@deltares.nl)

Technologies: Python, Wflow, Linux

Irrigation engineer

Aug 2011 – Apr 2016

Throughout these years, I contributed to various small companies, taking versatile roles: Designing irrigation systems, GIS, soil conservation infrastructure, and conducting hydrological model simulations.

Technologies: GIS, R, python

University of Arizona

Jan 2010 – Mar 2010

Intern

I collaborated with the university's controlled environment agriculture centre.

Supervisor: [Murat Kacira](#) (mkacira@cals.arizona.edu)

Technologies: CRBasic

Independent Project

Jul 2015 – Sep 2015

Web Designer

I worked as a designer of web pages.

Technologies: HTML5, CSS3, WordPress, Joomla

EDUCATION

Wageningen University & Research

Master's Degree in Climate Studies, 2016-2018

*Hydrology and Quantitative Water Management Group. **Minor:** Dynamic Systems Modelling*

Thesis: Feasibility of the application of the Lattice Boltzmann Method to resolve flow in a sharp river bend

Supervisor: [Ton Hoitink](#) (ton.hoitink@wur.nl), **Paul Torfs**

Description: I studied the feasibility of implementing the Lattice Boltzmann Method in the simulation of natural flows, identifying the limitations of implementation in large-scale problems.

Universidad Nacional Autónoma de México, IIMAS-UNAM

Postgraduate Degree in Applied Statistics, 2014- 2015

Universidad Autónoma Chapingo, UACH

Bachelor's Degree in Irrigation Engineering, 2006-2010

Thesis: Design of irrigation networks using Differential Evolution algorithms and Artificial Bee Colony

Supervisor: [Irineo López Cruz](#) (ilopez@correo.chapingo.mx)

Description: I studied the usage algorithms of DE and ABC in minimising the cost of the design of pressurised irrigation systems.

PUBLICATIONS [\[Abstracts\]](#)

- **Ponce Pacheco, M.A.**, Adla, S., Guntha, R., Aravindakshan, A., Presannakumar, M., Tyagi, A., Nagi, A., Pastore, P., & Pande, S. (In review). Makara: A tool for cotton farmers to evaluate risk to income. Smart Agricultural Technology. Manuscript under review.
- Adla, S., Aravindakshan, A., Tyagi, A., Guntha, R., **Ponce Pacheco, M.A.**, Nagi, A., Pastore, P. & Pande, S. (in review). Participatory development of mobile agricultural advisory driven by behavioural determinants of adoption. Journal of Environmental Management. Manuscript under review.

LANGUAGES

- **Spanish:** Native
- **English:** Professional

TECHNICAL SKILLS

- **Languages:** Python (advanced), R (advanced), C++ (intermediate), MATLAB (intermediate), Julia (basic)
- **Web design:** HTML/CSS
- **Frameworks:** Django, Django – REST, ROS
- **OS:** Linux, Windows
- **Databases:** MySQL, PostgreSQL
- **GIS:** QGIS, ArcGIS, RASTER, SHP, NetCDF
- **Cloud:** AWS
- **Agile:** SCRUM