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

EXPERIENCE

Technische Universiteit Delft

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

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.

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 my skills to various small companies, taking on versatile roles depending on the project: Designing irrigation systems, GIS and soil conservation infrastructure, and conducting hydrological model simulations.

Technologies: GIS, R, python

University of Arizona
Jan 2010 – Mar 2010
Intern
I worked for the university's controlled environment agriculture centre.
Supervisor: ***Murat Kacira*** ***(mkacira@cals.arizona.edu)***

Technologies used: CRBasic

Independent Project
Jul 2015 – Sep 2015
Web Designer

I worked as a designer of web pages.

Technologies used: 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 pressurized irrigation systems

LANGUAGES

- **Spanish:** Native
- **English**: Professional, B2

TECHNICAL SKILLS

- **Languages:** Python (advanced), R (advanced), C++ (intermediate), MATLAB (intermediate)
- **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