Mario Andrés
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Mario A. Cano

Curriculum Vitae

Background

2012 - 2017, National University of Colombia
BSc. Environmental Engineer

Thesis: "Assimilation approach in hydrological models".
Director: PhD. Carlos D. Hoyos

April 2013, University of Cambridge
Teaching knowledge test, includes three certificates:

- Language and background to language learning and teaching.
- Lesson planning and use of resources for language teaching.
- Managing the teaching and learning process.

In process
Toefl

Computer skills

Software
- GNU/Linux
- AutoCad
- Arcgis
- Other Gis tools
- Qgis

Programming
Python

- Object oriented programming (OOP).
- Web development in Python-Django.
- Data analysis in pandas module.
- Geospatial data management and analysis (Gdal and Basemap libraries).
- Other functions such as creation of logs and performance tests.

Fortran
- Basic functions for numerical modeling, only used for bulk data operations when necessary.

JavaScript
- Loading data with Jquery and asynchronous HTTP (Ajax) requests.
- Dynamical data display.

Other
- Repository management (GIT).
- Database Management in MySql and PostgreSql.
- Numerical modeling.

Experience

2013 - 2014, *Fluid Mechanics student assistant, National University of Colombia*
Support for academical activities and laboratory practices.

Functions
- Workshops development.
- Setting up laboratory.

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October 2014 - February 2016, *Assistant engineer,* **University of Antioquia**

Support for hydraulic and hydrological analysis of the Aburra Valley water budget.

Functions

- Water flow measurements in field.
- Hydraulic parameters estimation.
- Watershed analysis.
- Statistical analysis of water level flow.
- Hydrological modeling:
  - Rain Downscaling.
  - Monthly and daily watershed modeling for long term water budget.
- Verification of devices used for field trips in hydraulics laboratory.

February 2016 - May 2016, *Data Analyst,* **Air quality monitoring network of the metropolitan area of the Aburrá Valley**

Development of a neuronal network to predict critical particulate matter (PM2.5) episodes in the Aburrá Valley.

Functions

- Statistical analysis and data processing from gauging stations.
- Estimation of vertical atmospheric profiles and mixing layer heights from microwave radiometer data.

March 2016 - June 2016, *Assistant engineer,* **Early Warning System of Medellín and the Aburrá Valley (SIATA)**

Generation of warnings for extreme hydrometeorological events.

Functions

- Real time report of hydrometeorological events.
- Operate the command center and maintain adequate communication with the stations of the monitoring network.
- Support in activities related to the hydrology department.

August 2016 - January 2017, *Analyst,* **SIATA - Hydrology department**

Support for the improvement and continuous operation of hydrological models.

Functions

- Determine flow level curves to estimate waterflow.
- Support for hydrological activities related to "Redrío" project.
- Evaluation of the pertinence of using data assimilation in hydrological modeling.

January 2017- Present, *Data Analyst,* **SIATA - Hydrology department**

Collection, filtering, management and analysis of hydrological data for the improvement of simulation tools and real time reports.

Functions

- Hydrology department database management.
- Web development for field trips.
- Water risk levels determination in water level gauging stations.
- Real time and resume of hydrological reports.
- Water level plots for SIATA web portal.

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References

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