UNIVERSITÀ DEGLI STUDI DI MILANO

TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO

ID CODE 5903

I the undersigned ask to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Scienze Agrarie e Ambientali - Produzione, Territorio, Agroenergia**

Scientist–in–charge: **Professor Gandolfi Claudio**

Amirali DAVARY

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	DAVARY
Name	Amirali

PRESENT OCCUPATION

Appointment	Structure
Student	MSc. Data Science and Economics, **Università degli Studi di Milano**

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement
Bacelor of Science	Agriculture Engineering – Water	Ferdowsi University of Mashhad	2016
Master of Science	Civil Engineering – Water Resources and Hydraulic Structures	IAU Azad University of Mashhad	2021
Master of Science	Data Science and Economics	Università degli Studi di Milano	Expected 2023
Certificate for Course of Study	Programming for Geospatial Hydrological Applications	IHE Delft and UNESCO	2021

FOREIGN LANGUAGES

Languages	level of knowledge
English	C1 (TOEFL Score: 96)
Italian	A2 (basic)
Farsi	Native

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TRAINING OR RESEARCH ACTIVITY

Description of activity

- <u>Master's thesis in civil engineering</u>: "*Development of a Quasi-Distributed Water Balance Model for Semi-Arid Regions*" using MATLAB programming language (code available on my GitHub repository). For this research, a set of climatic and hydrologic data (12 years) were collected and utilized. The model evapotranspiration outputs were compared to three different models in the area (GLDAS global model and two **SWAT-based studies**) and it showed a satisfactory correlation with them. This study included many tabular and geo data handling for both pre and post stages of modeling.
- <u>Current master's thesis</u> at the *University of Milan*: "Forecasting the Size and Ignition Type of Wild Fires by Implication of Machine Learning", co-supervised by Prof. Mojtaba Sadegh (Boise State University, ID, USA). I am conducting deep learning and ensemble ML algorithms on a big dataset of wildfire records to predict the target labels.

PROJECT ACTIVITY

Year	Project
2017 - 2019	At Hydrotech-Toos Engineering Consultation Firm, in the capacity of water resources specialist: Development of web-based decision support systems for: 1. Water resources management (pilot region: North East Iran). For this project, a coupled SWAT-MODFLOW model was developed. In particular, I was responsible of hydrological <u>modeling using *SWAT* (calibration with SUFI-2)</u> as well as handeling <u>process design</u> for the coupling of the two surface and groundwater models with the IT team. All GIS data processing and visualization on the web-based interface were handelled using **ESRI ArcObjects C# SDK** in the backend engine. 2. Agricultural water management (pilot region: Khoozestan Province, Iran). - optimization algorithms for complex dam water allocation planning of large agro-industry plantations considering crop modeling data and irrigation practices. I was involved in management data collection through numerous meetings with stakeholders and members of the water authority as well as close collaboration with technical staff affiliated with the energy department. - **Remote sensing** techniques were used to derive *land-use classification maps* of various years from Landsat datasets combined with DEM data. *supervised machine* learning (SVM alg.) methods were applied by **Google Earth Engine** (JavaScript) and ENVI software.
2019 - 2021	At Water and Environment Research Institute (WERI) of Ferdowsi University of Mashhad, Iran. In the capacity of research assistant: 1. Collaboration in writing research proposals, 2. Mangeing institute interior and external meetings, 3. Instructor for two **software workshops**: ArcGIS Desktop and QGIS for beginners. During this period under a startup project for **precision agriculture**, I was responsible as **project manager** for the production of a Bowen-tower prototype. This instrument was built to record soil and air moisture, subsurface and ground temperature as well as solar radiation and wind speed. The gathered data was expected to be used along with remote sensing data for farm-scale management.

2021	At Regional Water Authority of Khorasan-Razavi Province, Iran. In capacity of Hydraulics Engineer: Involved in Project control for three river remediation design projects and responsible for reviewing Hydrology, Meteorology, basin physiography reports as well as HEC-RAS flood model assessments. I also had the previlage of accompanying senior engineers in various field trips. ArcGIS and Civil 3D Software were utilized for surveying and basin management purposes.

PUBLICATIONS

Articles
Water balance challenges in Iran and development of a framework for its enhancement, Journal of Water and Sustainable Development, Ferdowsi University of Mashhad, 2020 (In Farsi) – LINK TO PAPER
Development of a Quasi-Distributed Water Balance Model for Semi-Arid Regions, Manuscript will be submitted

OTHER INFORMATION

Through my current data science master studies other than gaining core knowledge in **machine learning and statistics**, I've also had the opportunity to add notable skills to my *Python and R programming* capabilities; especially in dealing with **time series data and statistical analysis**.

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Please note that CV WILL BE PUBLISHED on the University website and It is recommended that personal and sensitive data should not be included. This template is realized to satisfy the need of publication without personal and sensitive data.

Please DO NOT SIGN this form.

Place and date: MILAN, 3-October-2023