h 11:00-13:30, April 20, 2024, Room 45 DII

Adapting AI4Water architecture to Constatinois basin in Algeria

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Abstract: The AI4Water architecture proposes an integrated framework combining the FAO-AquaCrop crop growth model with advanced AI optimization techniques to enhance irrigation water allocation. AquaCrop simulates crop responses to water stress under varying hydrological conditions, while genetic algorithms optimize scheduling across multiple crops, accounting for basin-scale constraints such as soil variability, evapotranspiration, and reservoir inflows—data anticipated from local hydrological models.

In this talk, we will analyze how to apply the integrated framework to the the Constantinois basin of Algeria. We hypothesize that applying this framework to the Constantinois basin can yield improvements in crop productivity and water use efficiency by tailoring irrigation to local hydrology and dominant crops (e.g., cereals, olives). The presentation aims to integrating available basin data, such as precipitation, soil maps, and river flows from various sources or national databases, into AquaCrop for scenario simulations, followed by AI optimization of multi-objective allocation under climate variability.

Short Bio: Eva is a Professor of Computer Science at Universitat Politecnica de Valencia (UPV) in Spain. She has worked in several subfields of AI, particularly on the areas of Knowledge Representation and Reasoning, Automated Planning and Multi-Agent Systems. Currently, her main focus is on the integration of Planning and Learning and the development of personalized decision-making techniques that account for human values and user preferences. She was Editor-in-Chief of the journal AICommunications, the European journal on AI, and served as program co-chair of the conference ICAPS 2019, the International Conference on Automated Planning and Scheduling.