

TWO DECADES OF MACHINE LEARNING APPLICATIONS IN WATER SUPPLY MANAGEMENT

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The last few years have seen a lot of attention given to Artificial Intelligence (AI) and machine learning applications. This is primarily driven by the industry-grade availability of customizable AI/Machine learning programs and software that are now packaged to users, which at times separates the user from understanding the physics or process being modeled. AI/Machine learning approaches have been implemented for water resources management for more than two decades. This talk revisits practical applications of these tools, challenges, and opportunities, beyond academic research. Field-scale development and application of such tools in urban water supply (e.g., automating water treatment processes, seasonal water resource allocations, simulation-optimization frameworks) as well as those in water resources management space (e.g., climate and hydrologic predictions) will be highlighted. Most importantly, despite “one-stop shopping” of popular AI/Machine learning tools offered today, their successful applications require understanding of the physics or other underlying processes that are being modeled.

PRESENTER BIO: Tirusew Asefa is Tampa Bay Water’s managing director for Systems Decision Support group who is responsible for multi-scale decision support tools development and implementation. Tirusew has written over 45 peer reviewed articles and is the chair of the Florida Water and Climate Alliance (check out TBW and Florida WCA Tables).