A distributively novel robust data-enabled predictive control is introduced in [1] that utilizes noisy data of the system and produces optimal control inputs which enforce satisfying desired output chance constraints with high probability. This proposed method is applied on voltage source converter based high-voltage DC (HVDC) stations in purpose of damping the oscillations in power systems given that in practice an accurate parametric model of these systems is rarely available. A data-driven model predictive control scheme is proposed in [2] which only requires an initially measured input-output trajectory together with an upper bound on the order of the unknown system. In [3], a methodology has been developed in order to make a single-input single-output system stable merely based on data. The Stability problem for back-box linear switching systems is investigated In [4] based on collected data, and for a desired confidence. As an extension of this work, a methodology is provided in [5] in order to compute invariant sets of discrete time-invariant black-box systems. A novel Bayes-adaptive planning algorithm for data-efficient verification of uncertain Markov decision processes is introduced in [6]. A framework is proposed in [7] to provide a formal guarantee on data-driven model identification and control synthesis. In [8] a methodology is developed to the extent of providing a probabilistic confidence over the verification of a signal temporal logic property for partially unknown stochastic systems based on collected data.

In recent years, some attempts have been conducted in order to combine the concept of barrier certificate with data-driven techniques in order to address a wide category of problems ~~that~~ for which there is no accurate model of the system. An optimization-based approach is suggested in [9] to learning a control barrier certificate through safe trajectories under suitable Lipschitz smoothness assumption on the dynamical system. A sublinear algorithm is developed in ~~In~~ [10] for barrier-based data-driven model validation of dynamical systems which computes the barrier function using large datasets of trajectories. In [11], a two-step procedure is proposed to synthesize a controller for an unknown nonlinear system, in which, in the first step, a Gaussian process is used in order to learn the nonlinear dynamics, and in the second step, a systematic approach is proposed to construct~~ing~~ the controller barrier function.