UPO UNIVERSITÁ DEL PIEMONTE ORIENTALE
DIPARTIMENTO DI SCIENZE E INNOVAZIONE TECNOLOGICA

EVENTI DiSIT

Seminario | Seminar
08-11-2023
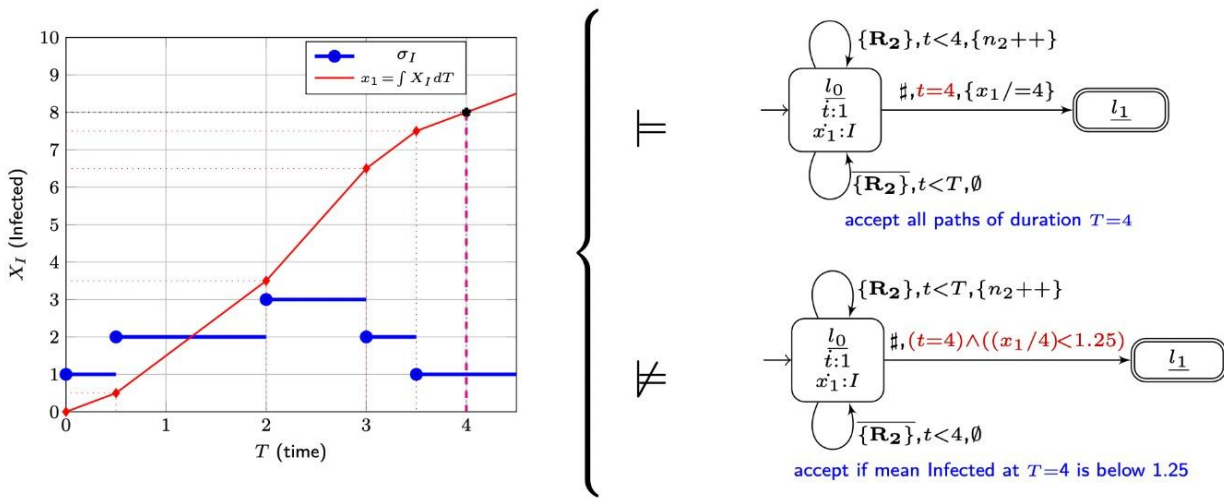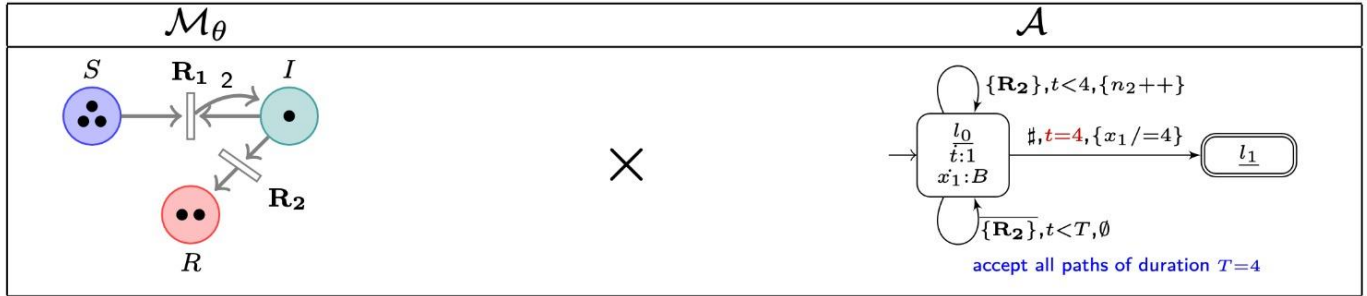### 14:30-15:30
Sala Seminari Informatica - C192

A Bayesian approach to parametric verification of stochastic models

Prof. Paolo Ballarini

Ecole CentraleSupélec, Université Paris Saclay

Synchronization of the SIR infection spreading model with hybrid automata for assessing perfomance indicators

Complementary to the stochastic model checking problem is that of inference of a model's parameters driven by the satisfaction of a target temporal behavior. The goal in this case is to identify the regions of the parameter's space that yield a positive probability to meet the target behavior. By introducing the notion of satisfiability distance for basic time-bounded temporal properties and by providing corresponding meter (hybrid) automata we adapted Approximate Bayesian Computation (ABC), a likelihood-free parameter-inference scheme, to solve the parametric stochastic model checking problem. In this talk I am going to give an overview of such automata-based adaptation of ABC schemes and will discuss some applications in biological modeling. I will also discuss how the approach can be extended beyond simple time-bounded reachability problems specifically by showing how one can take advantage of it to tune stochastic oscillators w.r.t. to a desired mean oscillation period.

EVENTO APERTO A:
Docenti | Teachers, Borsisti | Research Fellows, Assegnisti | Postdoctoral researcher, Dottorandi | PhD students

SEMINARIO IN LINGUA: Italiano se tutti i partecipanti saranno italiani, altrimenti Inglese