

# Control of discrete-time stochastic systems and application to remote automated driving

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This talk is mainly about control theory for discrete-time systems whose state transition is determined randomly. In the linear case, this kind of stochastic systems can be described by state equations with coefficient matrices given by discrete-time matrix-valued stochastic processes. In this talk, recent results on second-moment stability of the stochastic systems and associated Lyapunov inequalities are first introduced, without restricting the class of the associated stochastic processes. Then, some theoretical extensions are further discussed. As one of the possible practical applications of such stochastic control theory, results obtained in university-industry collaborative research on remote automated driving are also introduced.