Lecture 1: Introduction to Statistical Learning Theory Topic 1: Statistical Learning Theory Learning Objectives enumerate

I dentify the input, action, and outcome spaces for a given machine learning problem.
P rovide an example for which the action space and outcome spaces are the same and one for which they are different.
E xplain the relationships between the decision function, the loss function, the input space, the action space, and the outcome space.
D efine the risk of a decision function and a Bayes decision function.
P rovide example decision problems for which the Bayes risk is 0 and the Bayes risk is nonzero.
K now the Bayes decision functions for square loss and multiclass 0/1 loss.
D efine the empirical risk for a decision function and the empirical risk minimizer.
E xplain what a hypothesis space is, and how it can be used with constrained empirical risk minimization to control overfitting.