Introduction

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1 The Naive Bayes algorithm

Naive Bayes methods are a set of supervised learning algorithms based on applying Bayes theorem with the naive assumption of conditional independence between every pair of features given the value of the class variable.

Remark 1.1. **Baye's Theorem**

Bayes theorem states the following relationship, given class variable y and dependent feature vector x_1 through x_n

$$P(y|x_1,\ldots,x_n) = \frac{P(y)P(x_1,\ldots,x_n|y)}{P(x_1,\ldots,x_n)} \tag{1}$$

References

[1] Åström K. J., Murray R. M. *Feedback Systems. An Introduction for Scientists and Engineers*

[2] Philip , Florent Altche1, Brigitte dAndrea-Novel, and Arnaud de La Fortelle *The Kinematic Bicycle Model: a Consistent Model for Planning Feasible Trajectories for Autonomous Vehicles?* HAL Id: hal-01520869, https://hal-polytechnique.archives-ouvertes.fr/hal-01520869

[3] Marcos R. O., A. Maximo *Model Predictive Controller for Trajectory Tracking by Differential Drive Robot with Actuation constraints*