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Discrete Bayesian networks and applications

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Résumé :

The class of discrete Bayesian Networks plays a key role in many real-word applications. In this work, we provide an overview of their learning methods and illustrate these methods by performing a causal inference of the soil compaction in the agricultural areas. Then we introduce discrete Bayesian networks with a latent variable used to model the payment default of loans subscribers. A full procedure for learning its parameters, based on a customized Expectation- Maximization algorithm is provided. This model allows evaluating the payment default probability taking into account several factors and handling a multi-class situation.

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