



VineForecast - An interactive tool to generate individual predictions of vine diseases and phenology

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Nowadays, weather prediction has already achieved a high accuracy and reliability. However, for business owners, it is often unclear how the weather (prediction) is translated into actions and plans for their businesses. Winemakers are particularly affected by the weather throughout the year, especially the development of diseases is strongly influenced by the weather. The new and innovative web application VineForecast will transfer the weather prediction into disease and phenology forecasts that are highly individual and vineyard-specific. The prediction schemes rely on machine learning algorithms that are trained on data collected by the winemakers themselves. With this tool, weather-dependent decision-making can be improved and made affordable - even for small companies. A first proof of concept showed, that it is possible to infer the phenological stage and the disease risk for the common plant disease Powdery mildew from weather model data using decision trees and neural networks, respectively. This reveals the potential success of the proposed idea that can be translated into a working product. In case VineForecast wins the Harry Otten Prize, a first minimum viable product (MVP) is planned to be released at latest end of 2019. The product VineForecast has the potential of improving the cost efficiency and sustainability of wine making through tailored and more precise disease predictions. Moreover, the idea has the potential to be transferred to other business sectors such as gastronomy or tourism.