



Applying Decision Tree Algorithm and Neural Networks to Predict Forest Fires in Lebanon

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Résumé en anglais	<p>Fires have been threatening green forestry all over the world. In Lebanon, green areas declined dramatically during the last decades, what imposes an urgent intervention with strict governmental policies and support of non-governmental organizations. The orientation is towards techniques that predict high fire risks, allowing for precautions to preclude fire occurrences or at least limit their consequences. Two data mining techniques are used for the purpose of prediction and decision-making: Decision trees and back propagation forward neural networks. Four meteorological attributes are utilized: temperature, relative humidity, wind speed and daily precipitation. The obtained tree drawn from applying the first algorithm could classify these attributes from the most significant to the least significant and better foretell fire incidences. Adopting neural networks with different training algorithms shows that networks with 2 inputs only (temperature and relative humidity) retrieve better results than 4-inputs networks with less mean squared error. Feed forward and Cascade forward networks are under scope, with the use of different training algorithms.</p>
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