

Abstract

Information of weather prediction becomes important for people to fit their activity. Frequent weather change is hard to predict. Air temperature prediction will be useful, because air temperature affect local area weather.

Combination of Hidden Markov (HM) and Bayesian Network (BN) are alternative method using probabilistic and statistic model approach to make graph architecture graph in training and air temperature forecasting. Both of them are used as hybrid, Hidden Markov is part of Bayesian Network processes sequence. Graph architecture modeling is gained from Hidden Markov Models (HMM) with modeling of HMM elements toward climatology data for air temperature prediction. BN is used to statistic calculation based on classification principle, because it's ability in handling inconsistency and incompletely data simultaneously enabling cause-effect relation which is important in learning process of prediction system.

Climatology data which is used as system input elements are sunshine radiation, air humidity average, precipitation, air pressure, wind existing, wind rapidity average, air temperature at 07.00, 13.00, and 18.00. Output system is range of air temperature prediction for tomorrow.

Testing result toward air temperature prediction system shows system accuracy which is different based on area and time distribution.

Keywords: air temperature, hidden markov, bayesian network.