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**Title : Anomaly Detection of Agricultural Machinery Using Time-Series Data**

As technology evolved in the last decade, smaller and cheaper sensors have been developed. Recently, smart assist system which integrated those multiple sensors and ICT for operation and management of agricultural machinery has been developed and introduced. Knowledge discovery from multivariate time-series data of sensors is one of the major research topics in data mining. In recent years, growing attention has been paid to mining techniques from multivariate time series data, which are naturally represented as a stream of weighted graphs (Ide and Kashima, 2003), (Sun et. al., 2005), (Papadimitriou et. al., 2006). In such a graph, each node corresponds to each time series, and each edge is weighted by the (dis)similarity between a pair of time series. One of the typical tasks of stream mining is change (or anomaly) detection. Change detection is an unsupervised learning task, which aims at deciding on whether the data generating mechanism has been changed or not. In this study, we focused on the problem of anomaly detection in multivariate time-series data measured from agricultural machinery. We also attempted to analyze correlation anomaly detection approach based on structure learning introduced by Ide et. al. (2007) and Liu et. al (2013). Three translational acceleration and three angular velocity data were used for anomaly detection. Consequently, abnormal tension of rubber crawler of a combine-harvester were detected by this analysis.