An Application of Kernel Spectral Clustering to Predictive Maintenance
Rocco Langone, Department of Electrical Engineering, KU Leuven

In general, an accurate prediction of forthcoming faults in modern industrial machines plays a key role in reducing downtime, increasing the safety of plant operations, and minimizing manufacturing costs. In this work we use clustering on the sensor data collected from a packing machine to recognize beforehand when the machine is entering a faulty regime. In this way an early warning can be raised and optimal maintenance actions can be performed. In particular, a clustering model is trained off-line and then employed on-line via its out-of-sample extension property to detect the need of maintenance due to dirt accumulation in the sealing jaws.