

## **Sound Recognition based on Directed Acyclic Graphs**

**System id:** DAG\_HMM

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### **Abstract**

In this challenge, we designed a scheme classifying the sounds representative of five classes, i.e. Nature, Human, Music, Effects, and Urban. We propose a directed acyclic graph (DAG), where each node carries out a binary classification task using hidden Markov models (HMM). Each pair of HMMs is optimized to deal with one specific classification task. The DAG topological ordering follows a criterion derived from the Kullback-Leibler divergence and designed to comprise an early indication of how successfully the HMMs can address the particular problem.