AIST Dance Video Database: Multi-Genre, Multi-Dancer, and Multi-Camera Database for Dance Information Processing

Advanced Industrial Science and Technology AIST

Shuhei Tsuchida, Satoru Fukayama, Masahiro Hamasaki, Masataka Goto. National Institute of Advanced Industrial Science and Technology (AIST), JAPAN

ISMIR 2019

Summary

We developed the AIST Dance Video Database (AIST Dance DB) as the first large-scale shared DB focusing on street dances to facilitate research on various tasks related to dancing to music.

Although dancing is highly related to dance music and dance information can be considered an important aspect of music information, research on "Dance Information Processing" has not yet received much attention in the Music Information Retrieval (MIR) community.



AIST Dance Video Database

AIST Dance DB contains original street dance videos with original dance music.

https://aistdancedb.ongaaccel.jp

We carefully made this database to enable researchers to start various research topics, such as image processing tasks and investigation of the relationship between dance motion and dance music.

Dance Information Processing

Various types of processing and research related to dance information

(b) Dance-motion

New MIR Tasks:

- Dancer identification
- Dance-genre classification
- Dance-technique estimation
 - Dance-motion generation

Generation

(d) Dance-music (c) Dance-music Dance Music

A new challenge of multimodal MIR research!



Analysis

Dance Motion

(a) Dance-motion

analysis

analysis

13,940 videos (1,510 solo dances, 108 group dances, 5-9 multiple cameras)



60 musical pieces (6 musical pieces per dance genre)



10 street dance genres: break, pop, lock, waack, middle hip-hop, krump, LA-style hip-hop, house, street jazz, ballet jazz

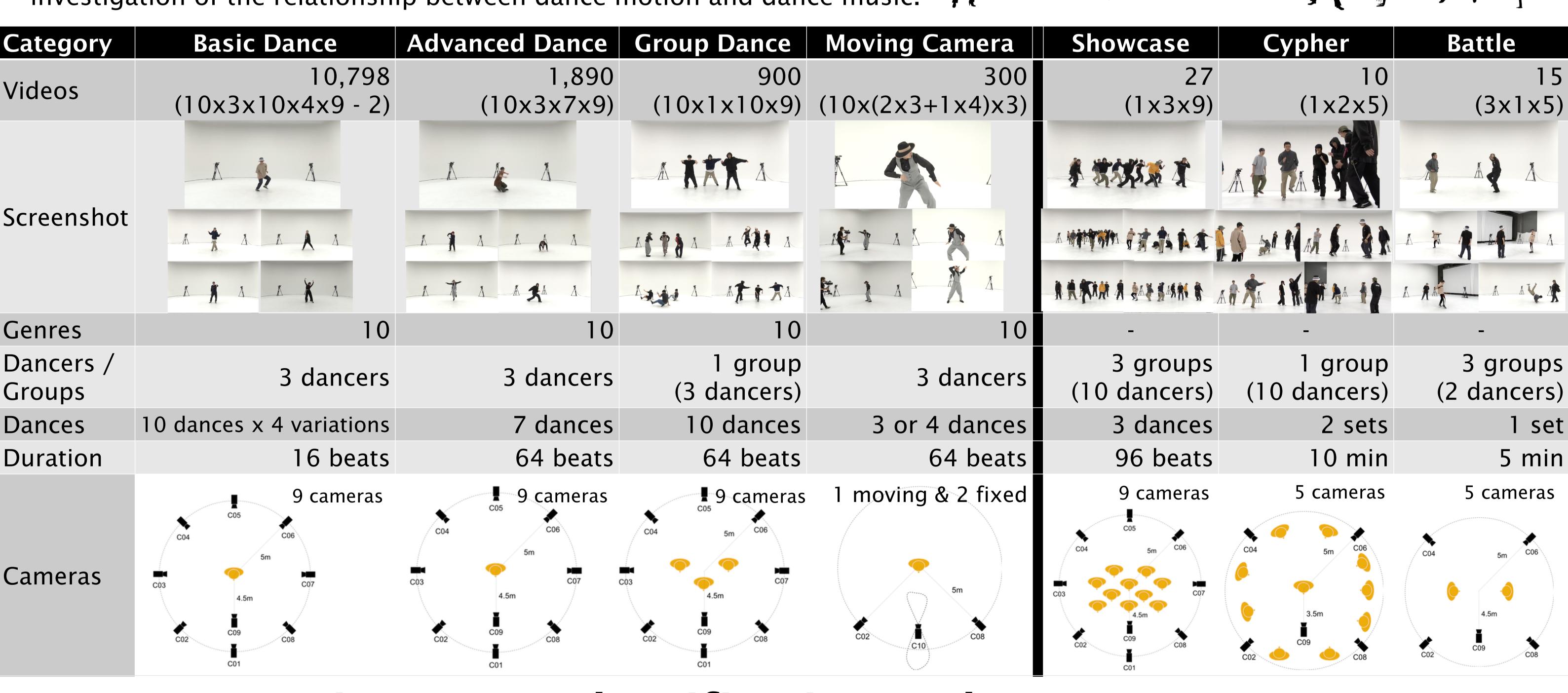


35 professional dancers (20 male, 15 female)









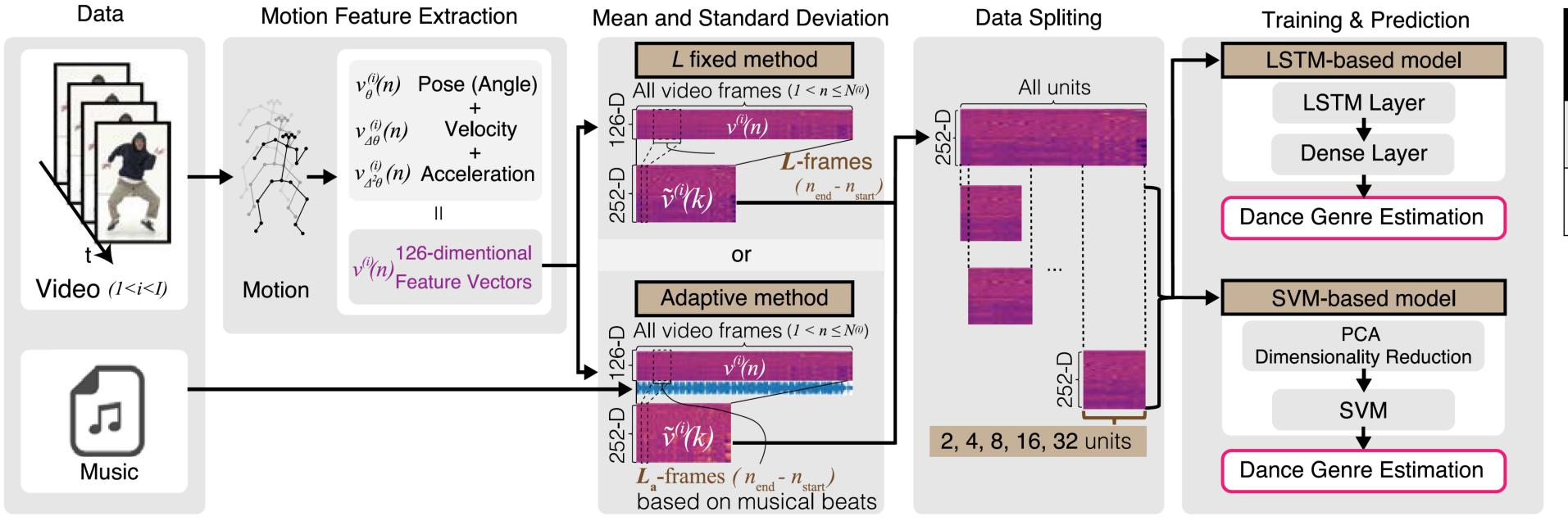
Dance-motion genre-classification task

Γask

The dance-motion genre-classification task for street dances is a task of classifying 10 genres by using their video frames only.

Dataset

- 210 videos (train 126, validation 14, test 70)
- Each genre has 21 dance videos by 3 dancers, each of whom uses 7 original choreographies.



Best accuracy	LSTM-based model	SVM-based model
L-fixed method	91.4 %	84.0
Adaptive method	83.4 %	80.7 9

Video frames