AI Dancer.
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Aim:

Designing an AI framework to effectuate creative mimesis of dance sequences in videos sent in as input.

Process:

1. **Input:** A dance video is sent in as an input for the framework.

2. **Processing:** High level details are extracted from the video: Dancer orientation, position etc.

3. **Distillation:** A high-level representation of the exemplified dance sequence is distilled from the extracted details. This sequence is then taken apart, and recombined in new ways, to ——— a new dance sequence, one which although sharing core grammar with the original, exist as a distinct sequence in itself.

Elements of Framework

1: Principal Point Triangulator:
Given a still image from a dance video, this module extracts the points corresponding to the principal features of the dancers in the video: Head, shoulders, elbows, kneew, feet, etc.

Input: Still image from input dance video.
Output: Coordinates of defined principal points.

2: Point Path Delineator:
Given the coordinates of the defined principal points for a series of stills, this module outlines the path of these points in three-dimensional space. This path is aimed to describe the motion of the dancer, through the given dance sequence.

Input: Series of principal coordinates across a sequence of stills.
Output: Intervening path of the given points in space, across said stills.

3: Grammar Awareness Facilitator:
This module aims to understand the underlying "grammar" of the dance sequence. Given the path of points describing the motion of the dancer in space, this module distills a high-level description of the dance sequence- the patterns it happens to contain, and what "words" it is comprised of.

Input: Point path of dancer.
Output: Dance Sequence Grammar.

4: Dance Sequence Generator:
This module, making use of the extracted grammar of the dance sequence, creates a new sequence based off of this grammar.

Input: Grammar of Input Dance Sequence.
Output: New sequence based off of said grammar.

5: Creative Mimesis Visualizer:
Visualizes the new dance sequence, with a simulated dancer.

Input: Representation of new dance sequence.
Output: Visualization of said sequence.