Machine Tango

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1 PROGRAM NOTES

Argentine tango dancers generally react to musical recordings with improvised steps, each action arising from an unspoken conversation between leader and follower. In Machine Tango, this relation between dancers and music is turned upside down, enabling tango dancers to drive musical outcomes. Motion sensors are attached to dancer limbs, and their data is sent wirelessly to a computer, where algorithms turn the movement into sound. In doing so, the computer inserts itself in this on-going nonverbal conversation. Instead of traditional tango instruments such as the violin, dancers generate and transform the sounds of aluminum capsules, typewriters, and other found sounds. The musical response of the interactive system to dancer movement transforms during the dance, becoming more complex. The two dancers must traverse the resulting volatile sound landscape as one, responding with stylized tango movements. The effort involved in performing this task, such as how the performers are required to listen to one another's movements with even more attention, and the contrast between the traditional with the experimental are essential to the performance aesthetic. The work is performed by myself and my tango partner, Brent Brimhall, who has contributed greatly to the structures of the dance.

Fig. 1. Dancers performing Machine Tango

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2 PROJECT DESCRIPTION

Argentine tango dance is grounded in the relation between two moving bodies, leader and follower. Their bodies' dialogue determines movement quality, character and trajectory. Lacking a basic step set to a specified rhythm, the tango couple is free to improvise and determine the rhythmic phrasing and framing of their bodies in relation to the accompanying music. Machine Tango inverts this relation between dancers and music, enabling dancers to determine musical outcomes.

This work grows out of a desire to combine a background in experimental electroacoustic music composition with Argentine tango dance. In particular, this work explores sounds morphing from less to more musical, focusing on the moments that feel between being musical and not. As dancers move and improvise, these sounds come together into recognizable tango rhythms, such as the 3 3 2 division of 4/4, but then fall apart again. System musical response to movement also shifts during the dance, becoming more complex.

Despite these volatilities, dancers must find their own rhythm together, being decisive in each moment. They develop an unstable relationship with one another: leader, follower, computer, music, requiring constant negotiation and attention. While the dance remains stylized, dancers must develop this tango in a flowing and ebbing noise that they are both actively driving and answering in turn to its unexpected responses to their past and present movement.

The interactive tango system used by Machine Tango consists of three modules: 1) the motion capture system consisting of a Shimmer3 inertial sensor on each dancer ankle, and an Android phone placed out of sight on each dancer, custom C++/Cinder software for motion analysis, and 3) sound production and musical structure generation using Max 8.

3 PERFORMANCE NOTES

Machine Tango is performed by two Argentine tango dancers provided by the authors. While certain aspects of the dance structure are fixed, such that the fact that we begin the dance apart and then move towards each other, the dance is largely improvised as is common in the tango tradition. This performance requires about a 9'X9' (minimum) or larger area (12'X12' or greater is ideal) with a relatively smooth floor that allows the foot to pivot – no carpets. The work has been performed both in an art gallery and on stages. The venue of the stage is preferred, but the venue is flexible as it can be viewed from several angles, and dancers can adjust easily as the dance is improvisatory.

4 MEDIA LINKS

- Video: https://vimeo.com/388572289d