

Kinect-Based Choreography

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The motivation for our project is to provide choreographers with a new software and hardware tool for investigating choreographies with a large number of dancers by composing the piece from 3D sequences of single dancers filmed with a *Kinect* camera/sensor. The ability to compose choreography from individual single-dancer choreographies is important for choreographers who can then organize the timing, sequencing, even reversing sequences before merging them with other sequences. Furthermore the 3D information captured by the Kinect sensor allows choreographers to view the choreography from any virtual view point, including impossible view points, such as viewing the dancers from under the stage, creating in effect a glass stage.

Our code is based on Daniel Shiffman's Processing application¹ that generates real-time point clouds captured by a Kinect sensor, and provides a user interface (UI) allowing the user to reverse, concatenate, trim, and overlap videos sequences. Individual frames can be tagged as starting points for the starting overlap of other sequences. The merging of individual sequences maintains the 3D information so that the virtual view-point can be manipulated by the user on the resulting sequence. More over, live feed from the Kinect can be merged in real time over prerecorded choreography, allowing dancers to interact with previously recorded movies of themselves.

We have used this original choreographic tool that sits at the edge between technology and art to create an abstract dance film (<http://tinyurl.com/inky2012>). It combines real-time shots with technologically generated choreography. This film was selected for screening at the FRAMEWORKS dance film series in New York City in February 2012. Work on this project is continuing, and we are investigating adding voice recognition to our user interface.

¹ Daniel Shiffman, Getting started with Kinect and Processing, from <http://www.shiffman.net/p5/kinect/>, captured 2/16/12.