

Simplifications to the data from paper "Encoding cloth manipulations using a graph of states and transitions"

Our data labels contain a lot of information. Because human subject data can have high variability, this increases sparsity in the data. The following simplifications are assumed in the paper to reduce sparsity in our data.

1 Simplifications on grasp location

The following substitutions have been done in the labeling of the grasp locations to remove the distinction between left and right hands and reduce sparsity:

Figure 1: Table of simplifications on grasp locations

Label	Cases in data before simplification	Resulting case in data
A single corner grasped		
Two corners on the far edge		
Two corners on the close edge		
Not distinction between left/right hands		
Two close points on the close edge		
Two close points on the right edge		

2 Simplifications on grasp type

Our data contains information on right or left hand grasps that may be useful in the future. For this paper, we have removed distinction between left and right and also we assume commutative property between grasps, that is, L+PP is the same than PP+L. In our original labeling, right side grasp was performed by right hand, and left side grasp was performed by left hand.

Finally, we also assume all non-prehensile grasps are in line form (due to gripper shape), not P.

3 Simplifications on cloth state

Crumpled state labels included if there was a full edge or just corners visible to the camera. We have simplified to just crumpled at this level.

4 Simplifications on motion semantic label

The data collected assumed any state on the table without contact with the user was a Resting motion. We have left as "Rest" the final state, but we have changed it to "Regrasp" for resting states in between the manipulation, because the user is moving the arms to re-grasp and continue the manipulation.