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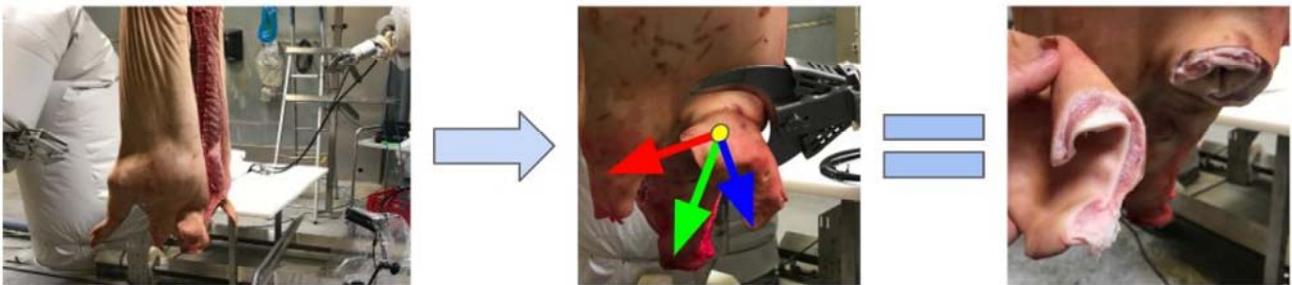
Self-supervised Preparation for Supervised Pose Prediction

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Abstract:

Many processes in modern slaughterhouses have yet to be automated. One of these is removing ears from pig's heads. Butchers put a lot of strain on their musculoskeletal system by repeating the required set of motions thousands of times a day. The ear is one of the most valuable parts of the pig and must be accurately cut off to retain as much value as possible.



Here we present ongoing work on a vision based robot controller that is able to accurately cut off pig's ears with the natural variation, in orientation, shape, size and appearance, that entails. We employ an autoencoder in order to get a low dimensional representation of the vision data. This lets us select a diverse set of samples for annotation and limits the need for using a large neural network for predicting tool pose. Demonstration of correct tool pose is intuitively done in virtual reality. This work is part of a greater effort towards automating and collecting four such tasks in a robot cell.

