Active garment recognition and target grasping point detection using deep learning

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Highlights

- We propose an algorithm that first, identifies the type of the garment and second, performs a search of the two grasping points that allow a robot to bring the garment to a known pose.
- Using Maya, we generate a database of depth images from simulated garments. The whole process is automatized by a code we make public.
- We combine depth images from real garments with simulated data, to train a Convolutional Neural Network that significantly improves state of the art results in cloth recognition.
- To detect the visibility and Cartesian location of the reference points, we use two more Convolutional Neural Networks per garment. The garment manipulation we propose differs from the classical approach based on re-grasping of the lowest hanging parts.