

Supplementary Material

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1 A Video Demo

2 We provide video demos of our system and results at <https://dexterousfinetuning.github.io>.
3 io.

4 B MANO Retargeting

5 For MANO parameters, the axis of each of the joints is rotation aligned with the wrist joint and
6 translated across the hand. However, our robot hand operates on forward and side-to-side joint angles.
7 To translate the MANO parameters to the robot fingers we extract the anatomical consistent axes of
8 MANO using MANOTorch. Once these axes are extracted, each axis rotation represents twisting (not
9 possible for human hands), bending, and spreading. We then match these axes to the robot hand. The
10 spreading of the human hand’s fingers (side-to-side motion at the MCP joint) maps to the side-to-side
11 motion at the robot hand’s base joint. The forward folding at the base of the human hand (forward
12 motion at the MCP joint) maps to the forward motion at the base of the robot hand’s finger. Finally,
13 the bending of the other two finger joints on the human hand, PIP and DIP, map to the robot hand’s
14 PIP and DIP joints. While the thumb does not have anatomically the same structure, we map the axes
15 in the same way. Other approaches rely on creating an energy function to map the human hand to the
16 robot hand. However, because the soft hand is similar in anatomy and size to a human hand, it does
17 not require energy functions for accurate retargeting.