

## Supplementary materials for

Junjun CHEN, Yijun WANG, Yixuan SUN, Yifei YU, Zi'ao LIU, Zhefeng GONG, Nenggan ZHENG, 2023. Path guided motion synthesis for *Drosophila* larvae. *Front Inform Technol Electron Eng*, 24(10):1482-1496. <https://doi.org/10.1631/FITEE.2200529>



Fig. S1 Estimated pose sequence in the DLPose dataset depicting *Drosophila* larval turning motion

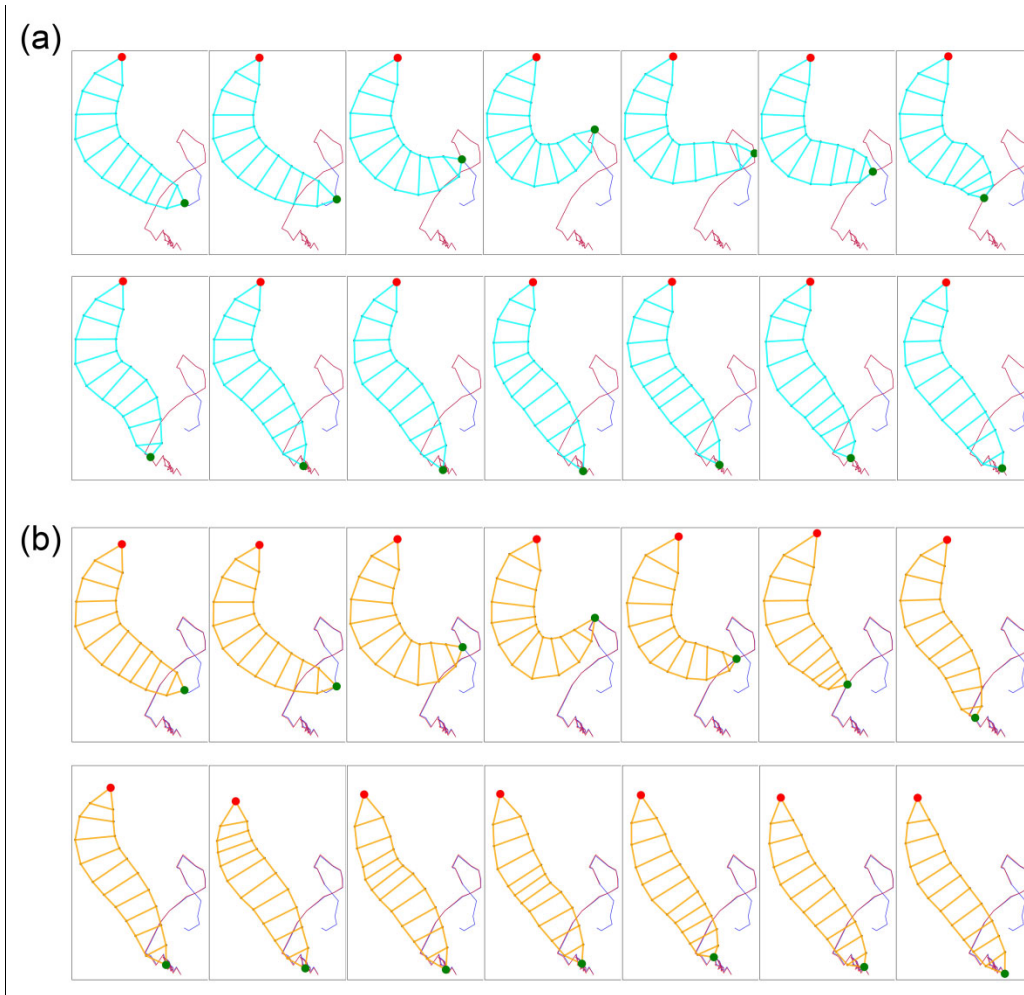


Fig. S2 Pose sequences depicting *Drosophila* larval head sweeps: (a) real pose sequence from the DLPose dataset; (b) synthesized pose sequence with the same initial poses and guiding path. The guiding and synthesized movement paths are represented by the blue and red lines, respectively

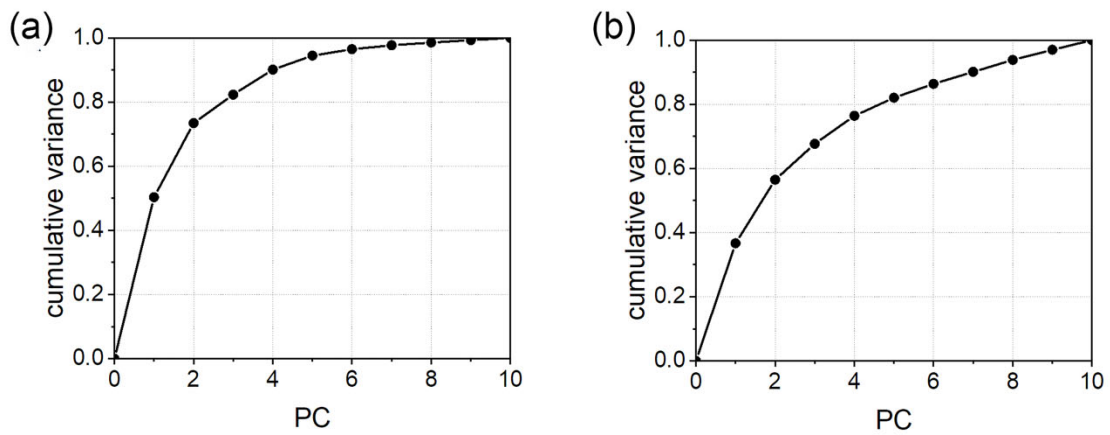
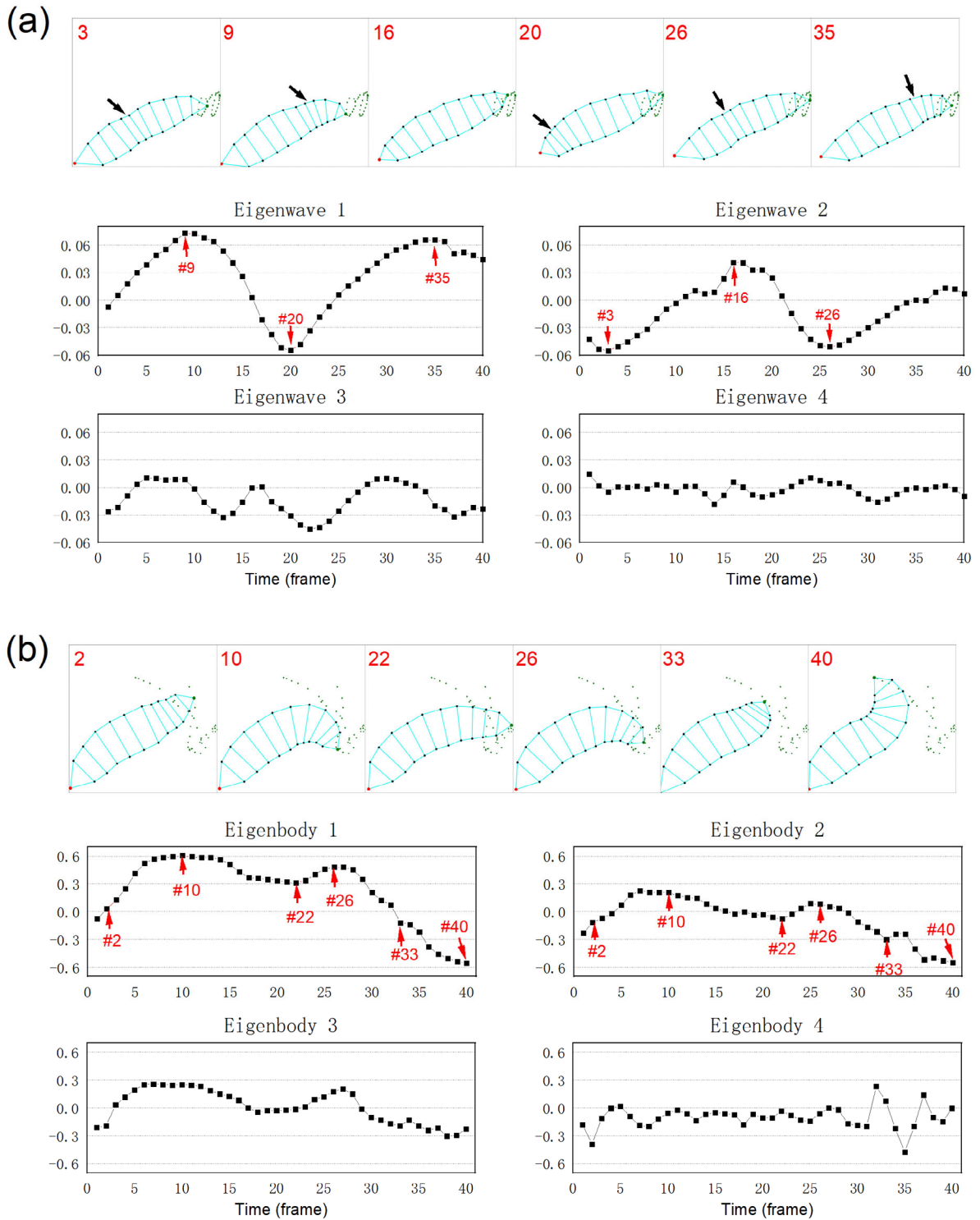
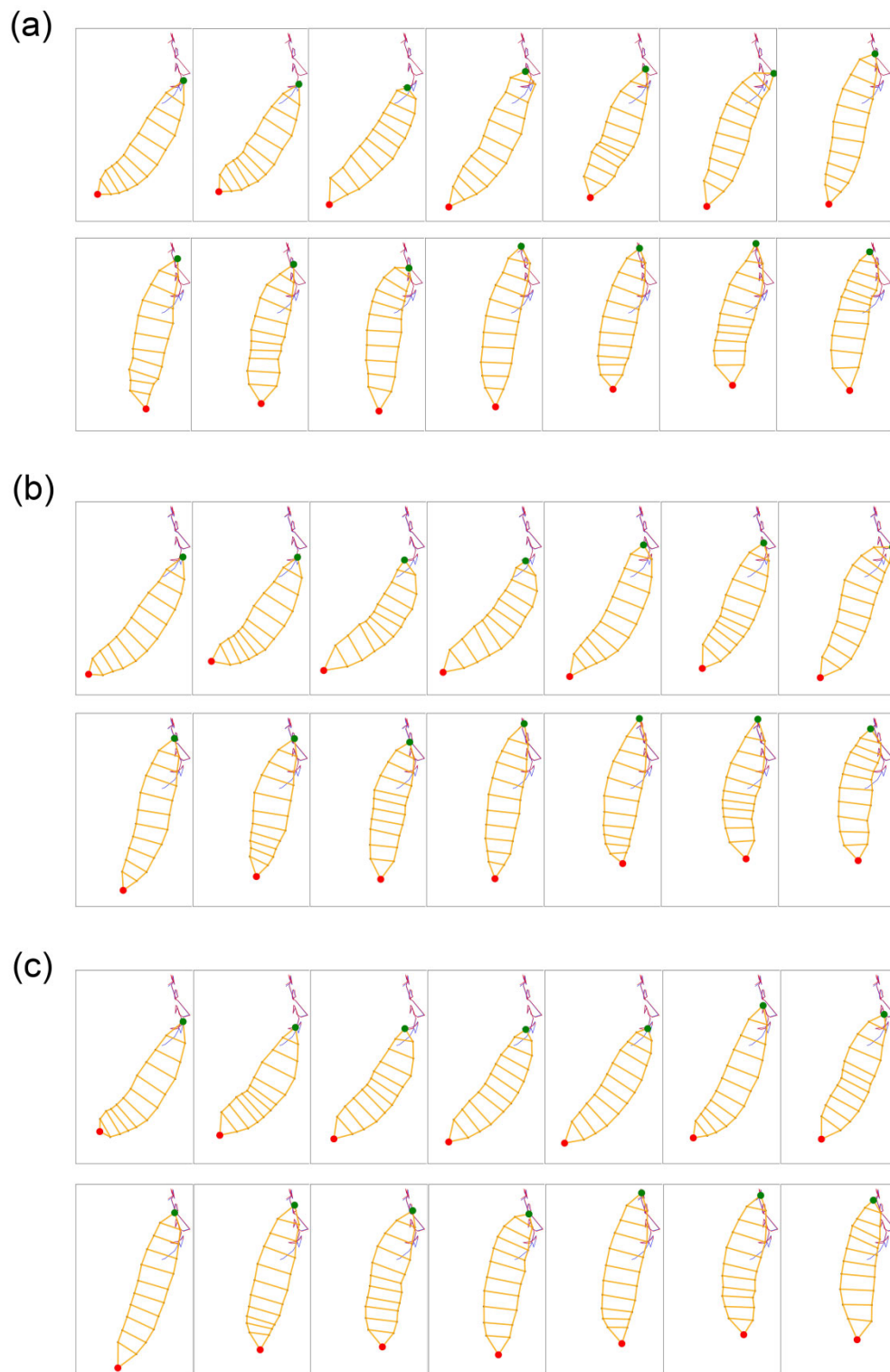


Fig. S3 Cumulative variance of the principal components (PCs) for eigenwaves (a) and eigenbodies (b)



**Fig. S4 Morphological analysis for eigenwaves and eigenbodies: (a) typical pose frames (top panel) and top four eigenwaves (bottom panel) of a pose sequence (peristaltic wave position is labeled by the red arrow); (b) typical pose frames (top panel) and top four eigenbodies (bottom panel) of a pose sequence**



**Fig. S5** Pose sequence synthesized by RNN (a), MANN (b), and Path2Pose (c) models

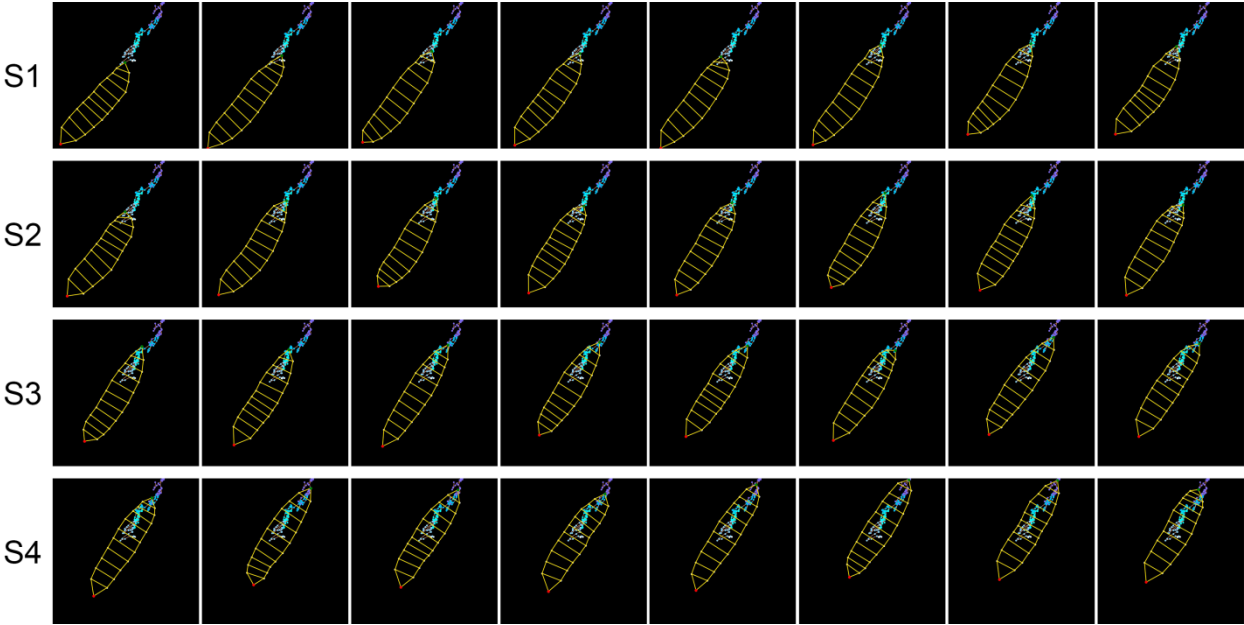


Fig. S6 Synthesized long pose sequence joined with four segments depicting *Drosophila* larval forward locomotion

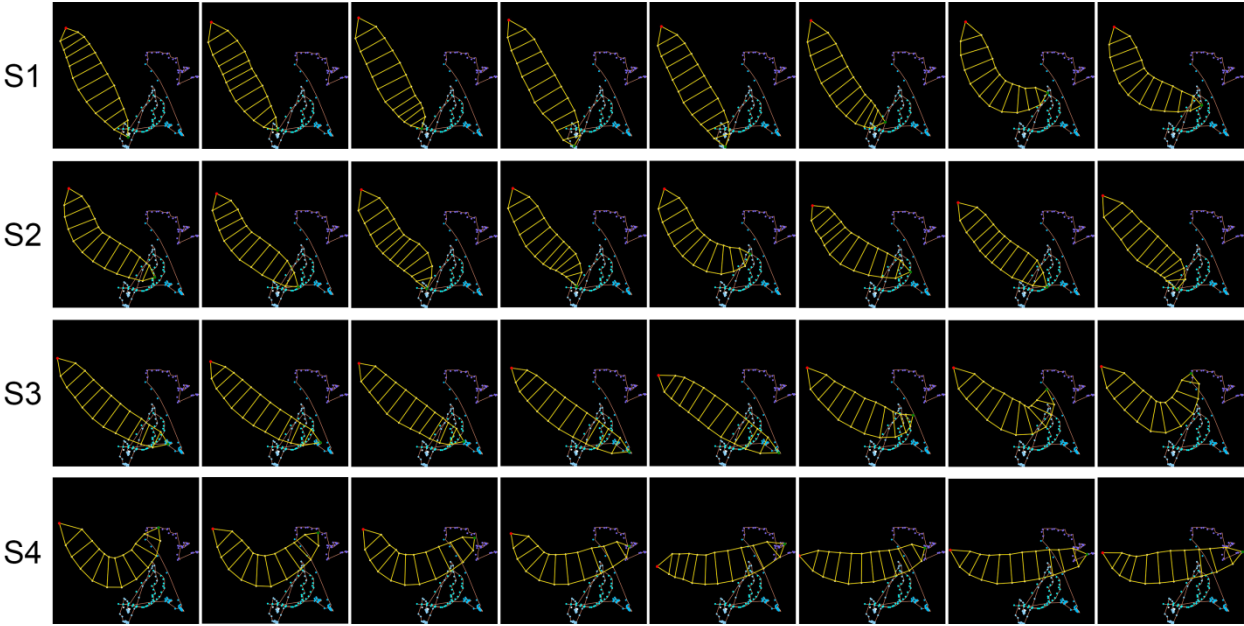


Fig. S7 Synthesized long pose sequence joined with four segments depicting *Drosophila* larval head sweeps and turning