



**Movie 1. Example comparison of manual and machine labeled frames for a complete gait cycle.** Unfiltered machine labels (marked with x) compared to manual labels (marked with a dot). Landmarks in this gait cycle were used to compute the joint angles in Fig. 3A. Label colors are consistent with the locations identified in Fig. 2A. X-ray video recorded at 100 fps and played back once at 1.0x speed, then twice at 0.25x for clarity.