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**Figure 1.** Panel **A**: The shared control framework is depicted. For different applications how the human (CH) and robot (RH) command are combined to give the net control command (C) is one of the key parameters of the shared control system. Panel **B**: Implementation of the ‘Ball Balancing’ task. The position of the ball is tracked with infrared camera; and the wrist joints of the robot are controlled by the human in real-time. Net command is the result of a convex combination of the human and machine output. Panel **C**: Initial testing for ‘Kendama’ (ball-in-cup) task. Panel **D**: ‘Ball Swapping’ with Kuka Arm+Gifu Hand system. The machine and the human controls are orthogonal; human controls the arm, the machine controls the fingers. The human adaption allows synthesis of autonomous ball swapping with ease.

