

4. The system of claim 1 wherein the shoulder joint has three degrees of freedom.

5. The system of claim 1 wherein the elbow joint has two degrees of freedom.

6. The system of claim 1 wherein the wrist joint has two degrees of freedom.

7. The system of claim 1 wherein the plurality of transducers includes at least one of an image sensor, a strain gauge, a force-torque sensor, an accelerometer, and an encoder.

8. The system of claim 1 wherein the driver includes at least one of a motor and a cable operated transmission.

9. The system of claim 1 wherein the processor is configured to control the driver in a simulated environment.

10. The system of claim 1 wherein the processor is configured to control the driver to exert feedback to the arm.

11. The system of claim 1 wherein at least one transducer is configured to generate an output signal based on a neural signal detected at a surface of the user.

12. A method comprising:

generating an image of a scene;

receiving information from a transducer of a wearable exoskeleton, wherein the wearable exoskeleton includes a plurality of links, each link having an articulating joint, wherein each joint is aligned with an axis of an anatomical joint, the information corresponding to a simulated limb interacting in the scene; and

modifying performance of the simulated limb based on an element in the scene.

13. The method of claim 12 wherein the scene is a virtual scene.

14. The method of claim 12 wherein generating the image of a scene includes receiving information over a communication channel.

15. The method of claim 12 wherein receiving information from the transducer includes receiving a signal from a surface sensor coupled to a user.

16. The method of claim 12 wherein modifying performance includes limiting a range of motion of a link of the plurality of links.

17. The method of claim 12 wherein modifying performance includes exerting a resistive force or torque to an articulating joint.

18. A method comprising:

coupling a user to an exoskeleton having a plurality of exoskeleton links and a plurality of exoskeleton joints, the plurality of exoskeleton links corresponding to an upper limb of the user and each of the plurality of exoskeleton joints corresponding to an anatomical joint of the upper limb of the user and wherein the axis of each joint of the exoskeleton is aligned with a corresponding anatomical joint of the user;

receiving a feedback signal from a surface sensor coupled to the user;

executing an algorithm to determine a torque for at least one exoskeleton joint based on the feedback signal; and

applying the torque to the least one exoskeleton joint.

19. The method of claim 18 wherein coupling the user to the exoskeleton includes attaching the exoskeleton to at least one of an upper forearm of the user, a lower forearm of the user, and a hand of the user.

20. The method of claim 18 wherein applying the torque includes applying an assistive torque.

21. The method of claim 18 wherein applying the torque includes applying a resistive torque.

22. The method of claim 18 wherein executing the algorithm includes executing an algorithm to increase a range of motion.

23. The method of claim 18 wherein executing the algorithm includes executing an algorithm to resist movement of an anatomical joint.

24. The method of claim 18 wherein applying the torque includes controlling a motor drive.

25. The method of claim 18 wherein applying the torque includes operating a brake.

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