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- (71) **Applicant:** **NANYANG TECHNOLOGICAL UNIVERSITY** [SG/SG]; 50 Nanyang Avenue, Singapore 639798 (SG).
- (72) **Inventors:** **YANG, Sib0**; c/o Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798 (SG). **LUO, Lincong**; c/o Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798 (SG). **LI, Lei**; c/o Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798 (SG). **WANG, Youlong**; c/o Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798 (SG). **LAW, Wei Chuan**; c/o Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798

(SG). **ANG, Wei Tech**; c/o Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798 (SG).

(74) **Agent:** **CSASIA IP PTE. LTD.**; 47 Scotts Road, #13-03 Goldbell Towers, Singapore 228233 (SG).

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(54) **Title:** UPPER LIMB ASSISTIVE SYSTEM AND METHOD

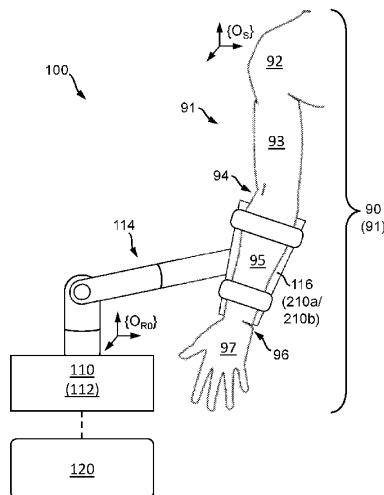


FIG. 1

(57) **Abstract:** Disclosed herein is an upper limb assistive system and method. The upper limb assistive system is configured to receive a first support position and a first support orientation of the support member in an actuator frame, the support member coupled to the upper limb of the subject; determine a shoulder position based on at least one anthropometric measurement; based on the shoulder position, transform the first support position and the first support orientation in the actuator frame to a corresponding second support position and a corresponding second support orientation in a subject shoulder frame, wherein the subject shoulder frame corresponds to the shoulder position; estimate upper limb joint angles corresponding to a plurality of upper limb parts, based on the second support position and the second support orientation using a human inverse kinematics model; and determine a gravity-compensated force on the support member based on the upper limb joint angles.

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