

Optimal Torque and Stiffness Control in Compliantly Actuated Robots

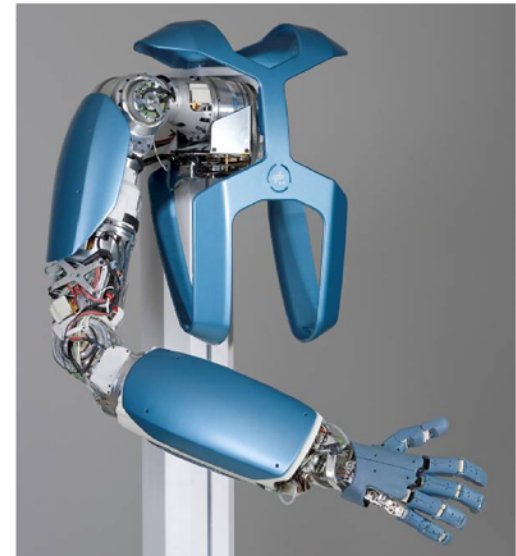
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- Anthropomorphic robots driven by variable-impedance actuators (VIAs) are highly *redundant* in their *kinematics* and *actuation*.
- VIAs are capable of modulating torque and impedance simultaneously but impose complex *actuation constraints*.
- We propose a framework for *optimizing torque and impedance under real-world actuation constraints*.
- Simulations and experiments *validate* this approach *on two conceptually different* variable-impedance systems.

DLR Hand-Arm System



Optimal variable stiffness control

