Gait training robot for neurological injuries

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Gait Training Therapy

Manual Therapy
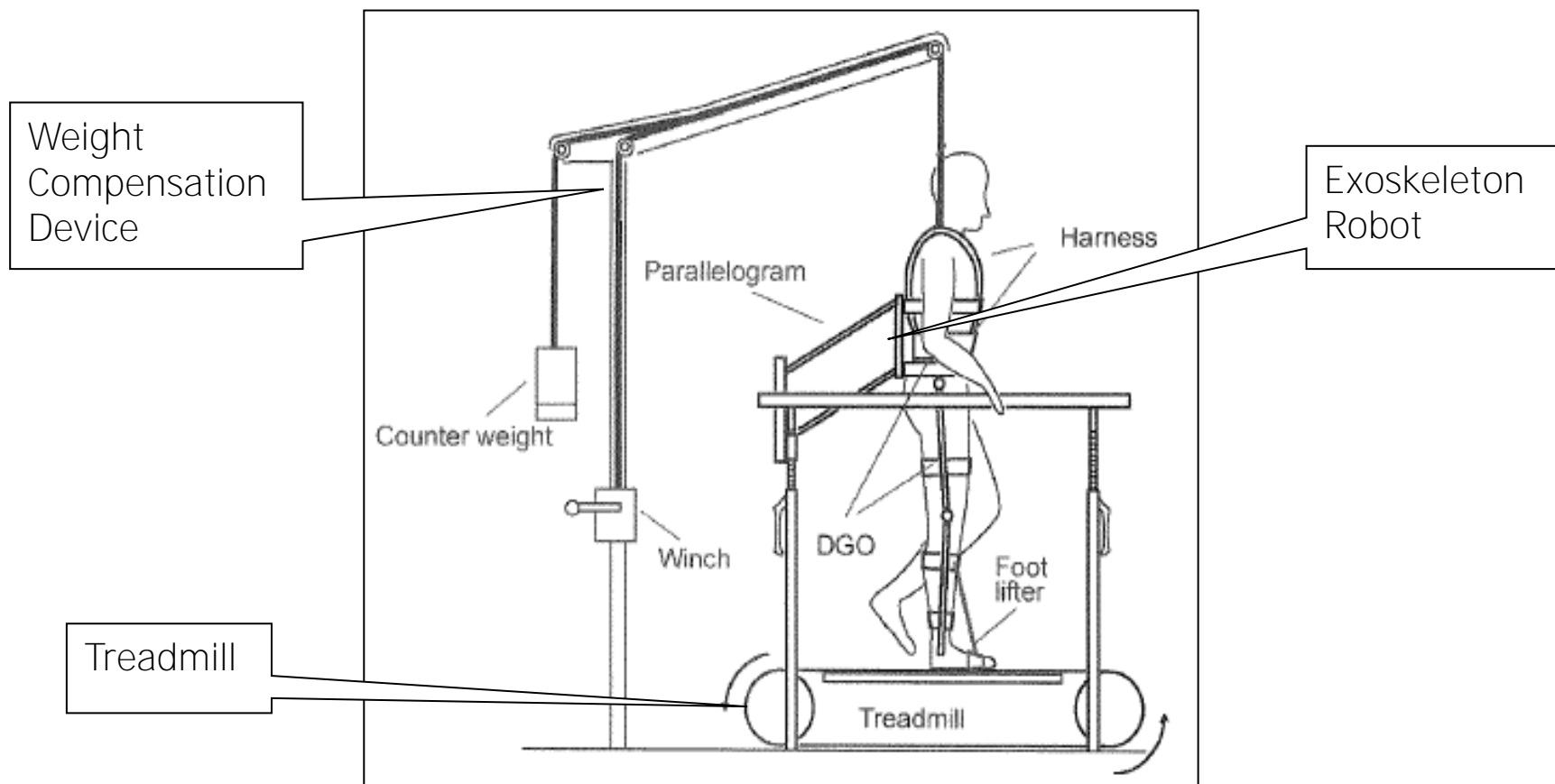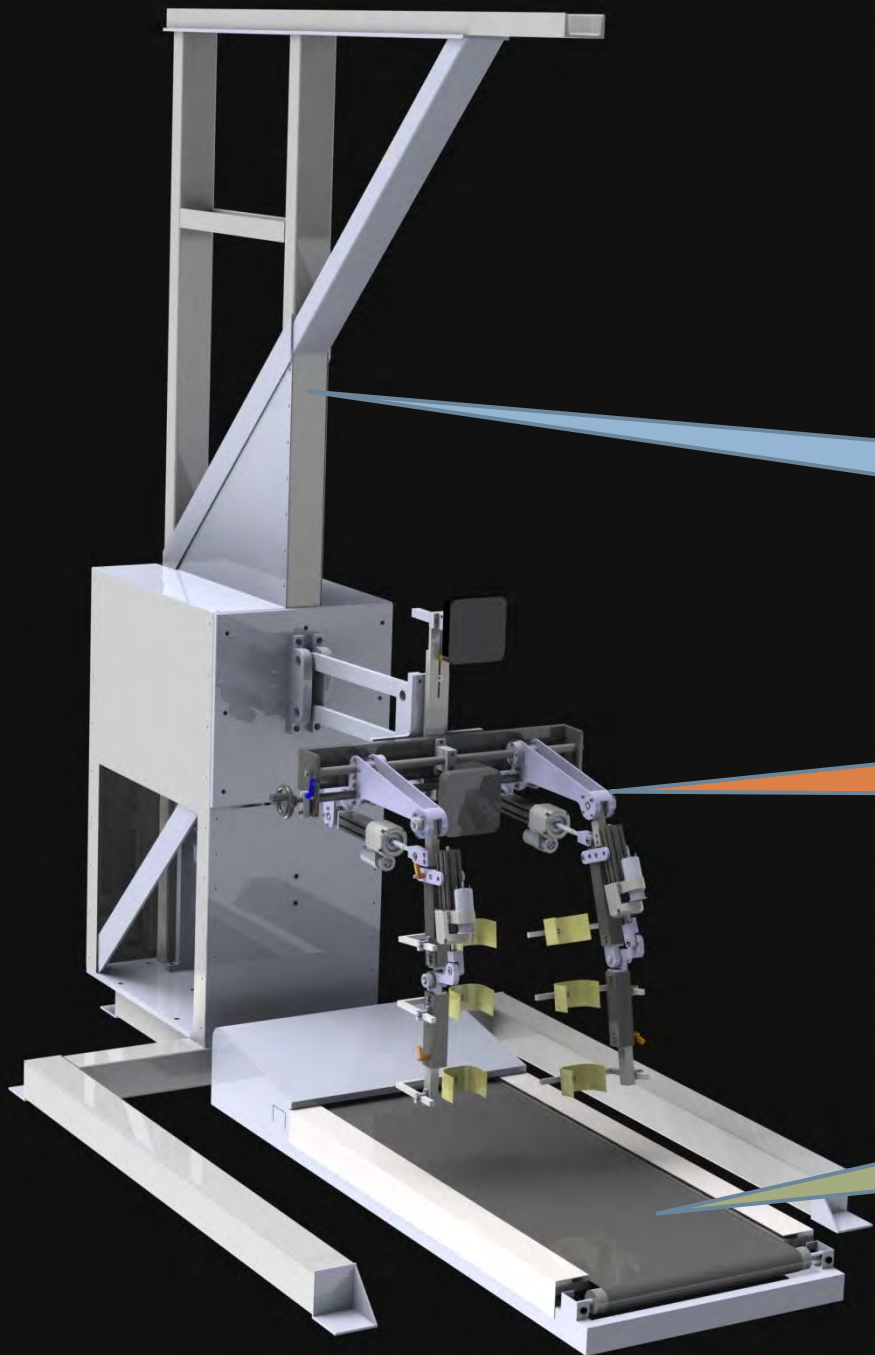
- Labor intensive

Robot Assisted Therapy

- Expensive (~16 MBaht)
- Closed technology

Gait Training Machine

Weight Compensation Device

Exoskeleton Robot

Treadmill

Parallelogram

Harness

Counter weight

Winch

DGO

Foot lifter

Treadmill

Outline
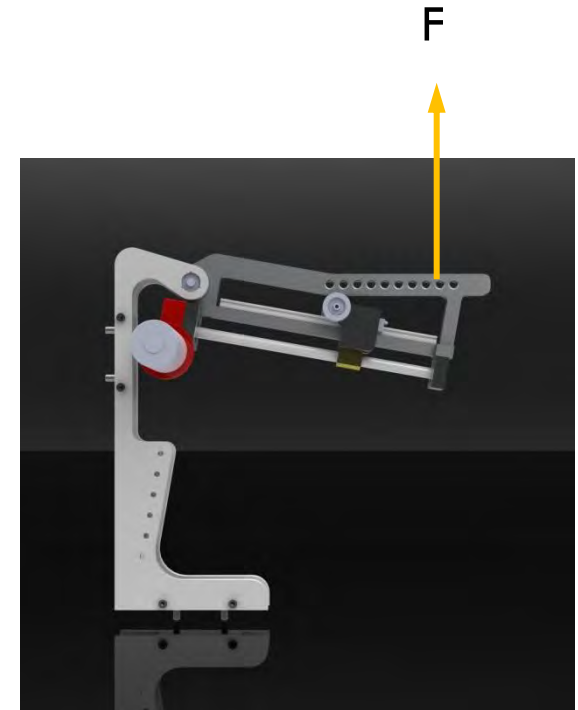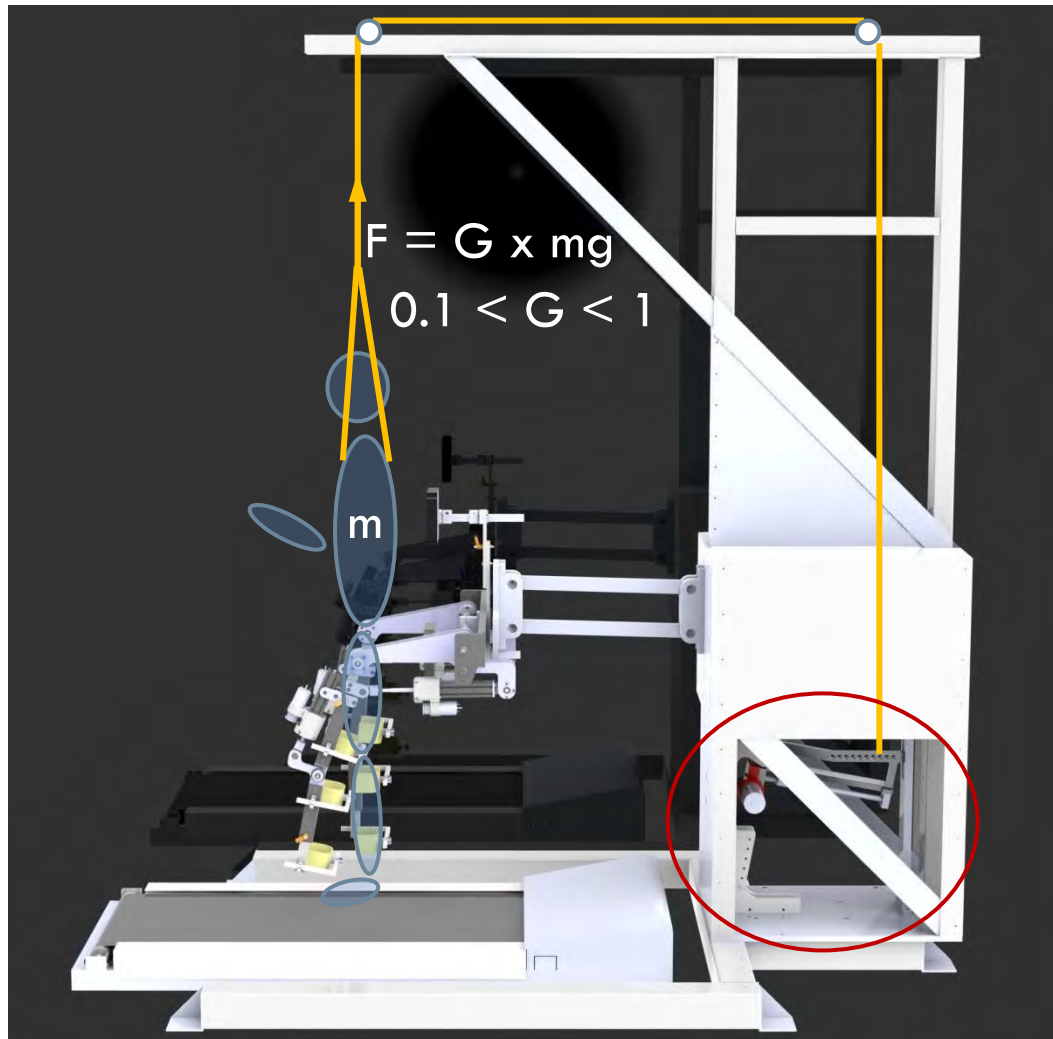

Patient Weight Compensation Device

Exoskeleton Robot

Treadmill

Patient Weight Compensation Device

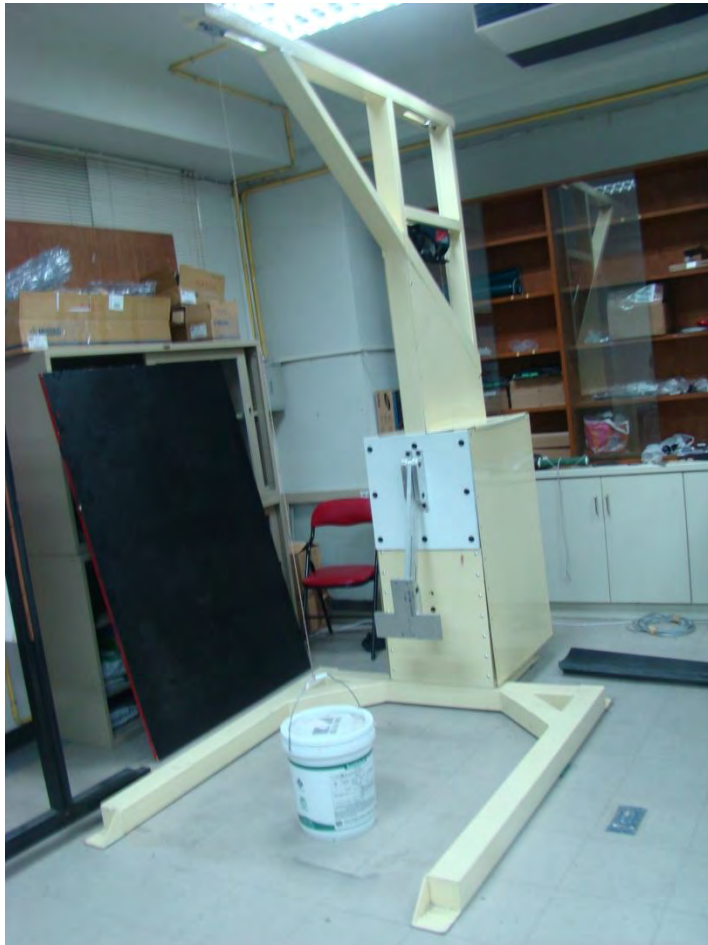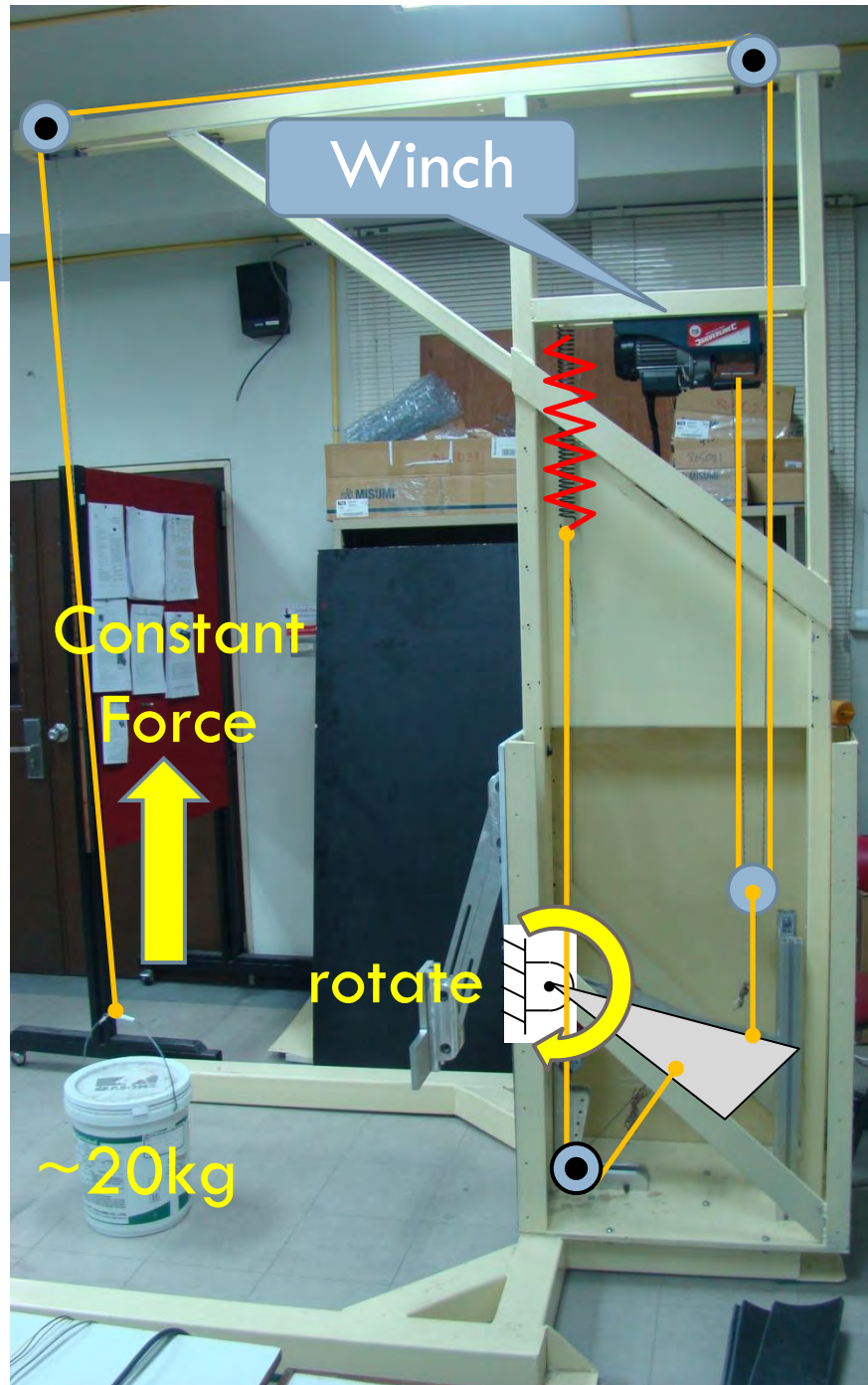# Patient Weight Compensation Device

$F = G \times mg$

$0.1 < G < 1$

m

F

Constant force mechanism

- Completely passive
- Low maintenance

Patient Weight Compensation Device

PWD

PWD Demo
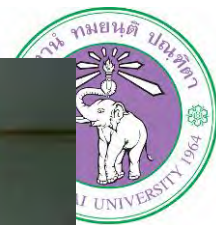
Exoskeleton Robot
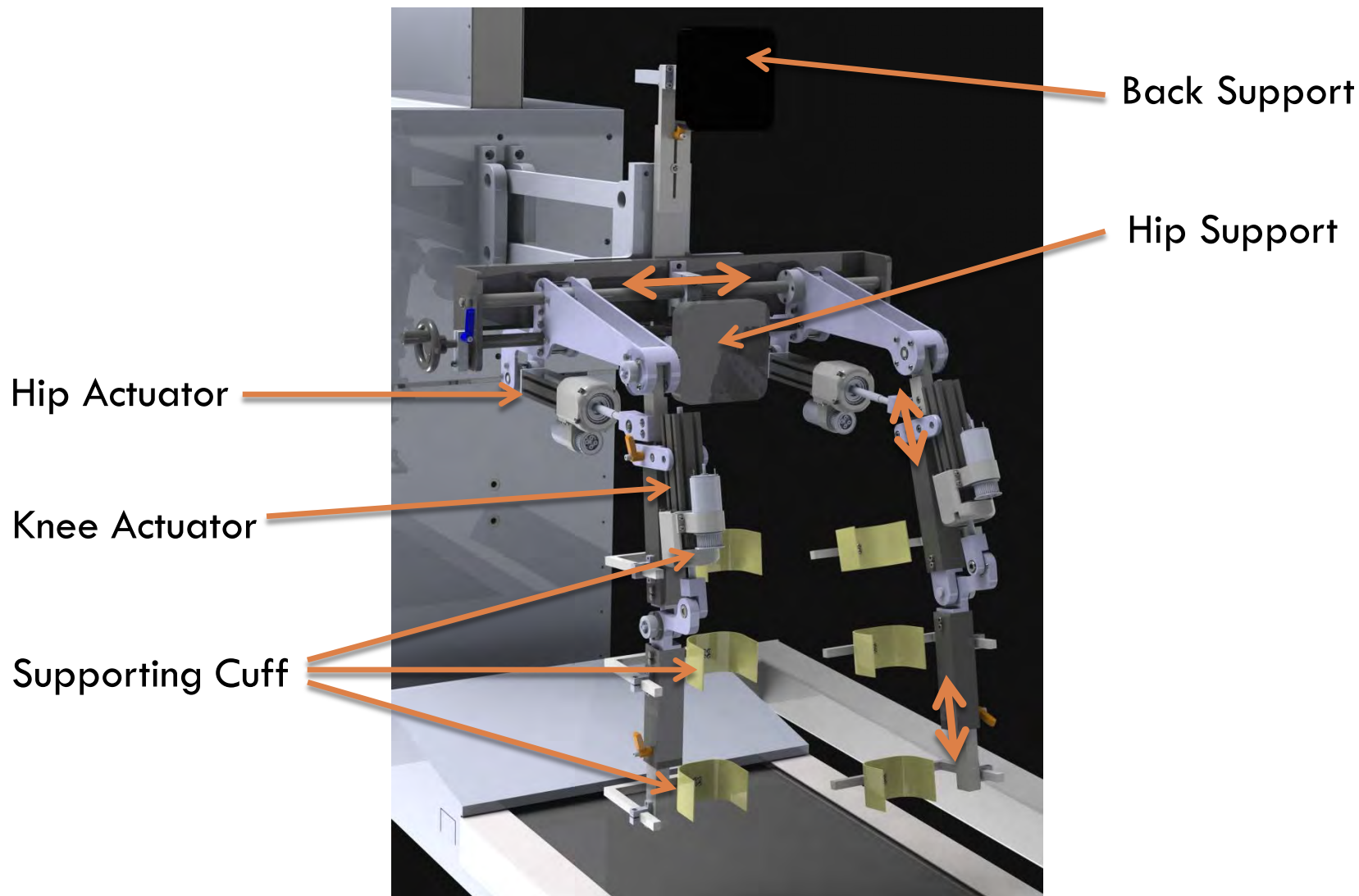
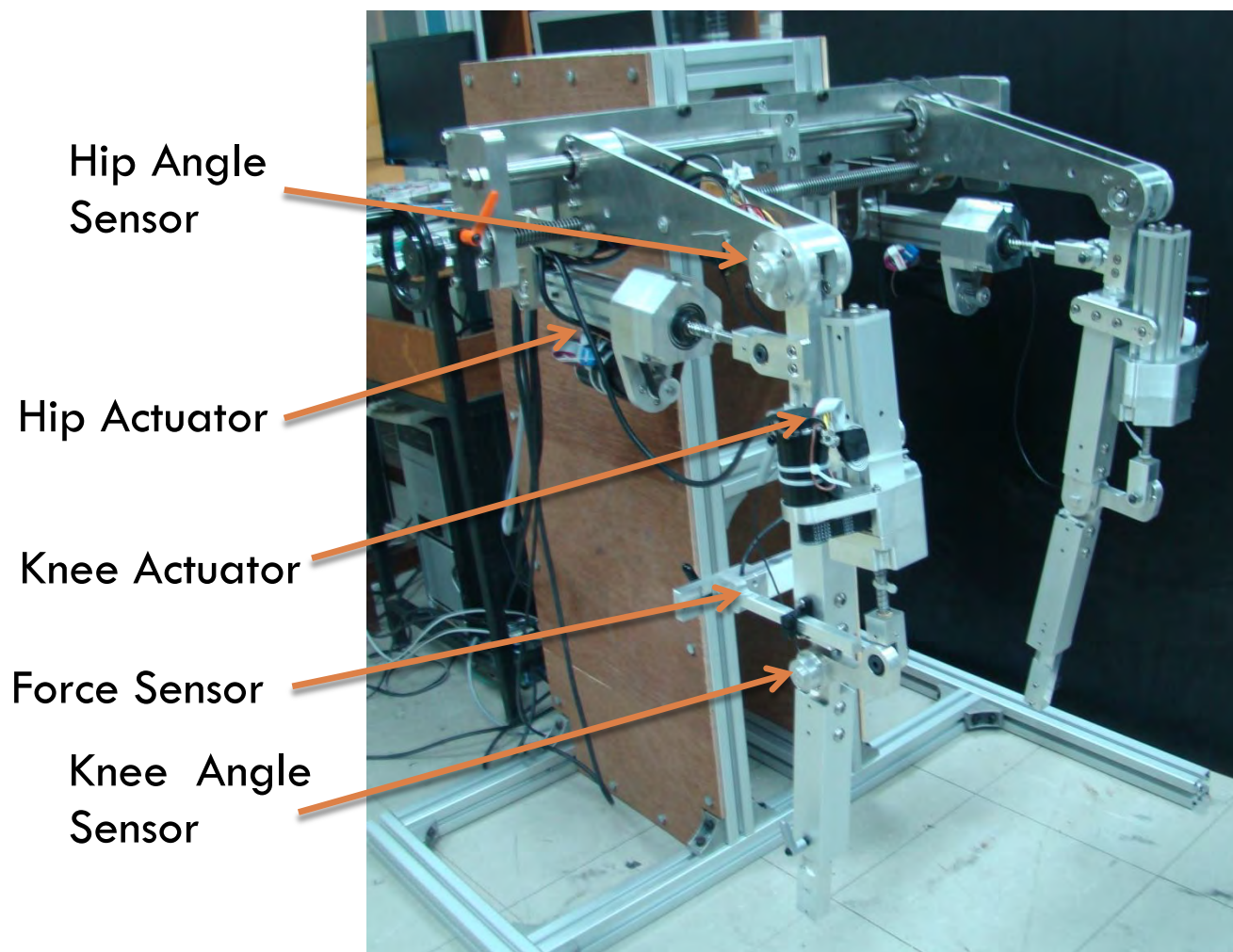# Exoskeleton Robot

Back Support

Hip Support

Hip Actuator

Knee Actuator

Supporting Cuff

Exoskeleton Robot

Hip Angle
Sensor

Hip Actuator

Knee Actuator

Force Sensor

Knee Angle
Sensor
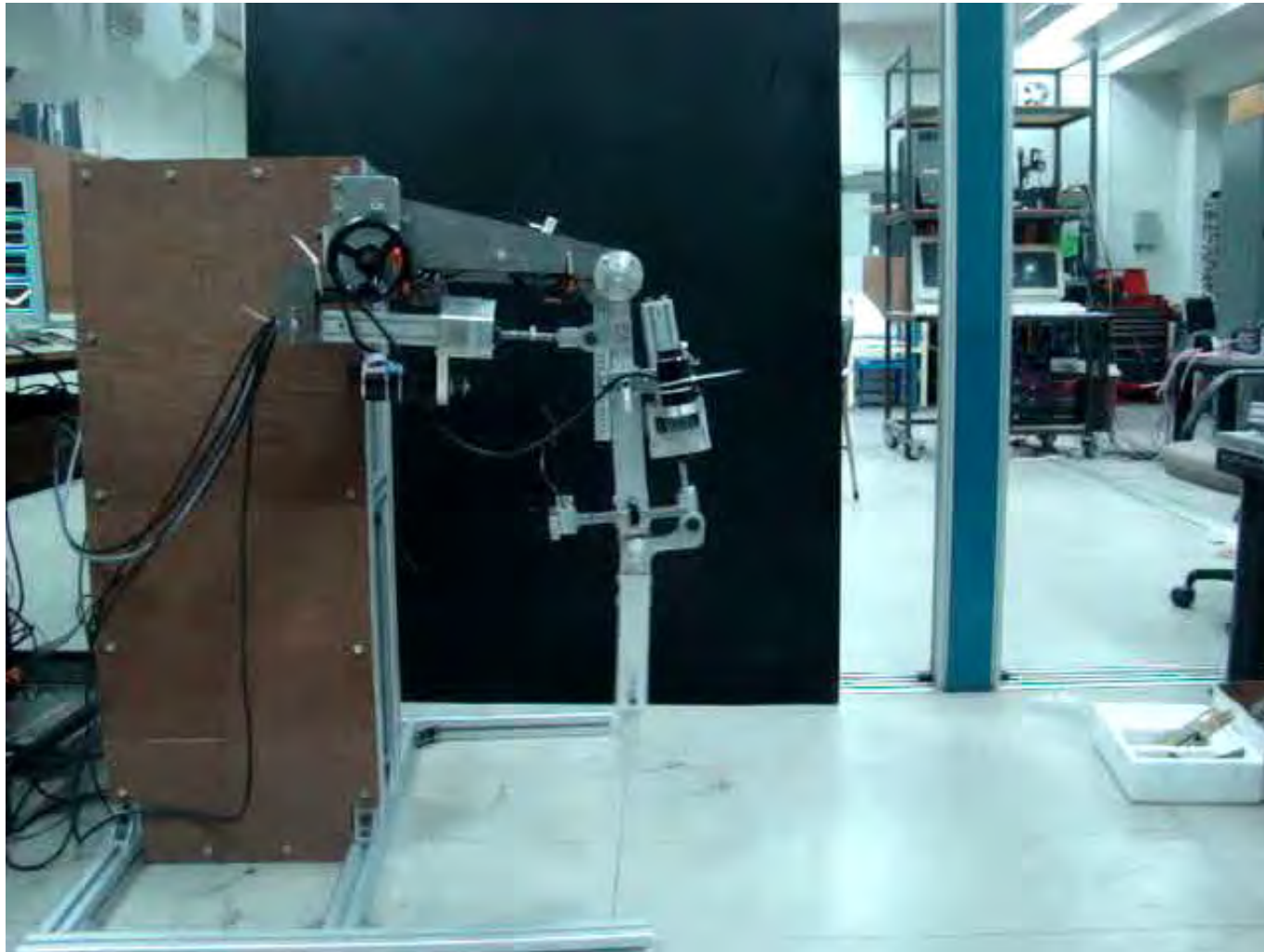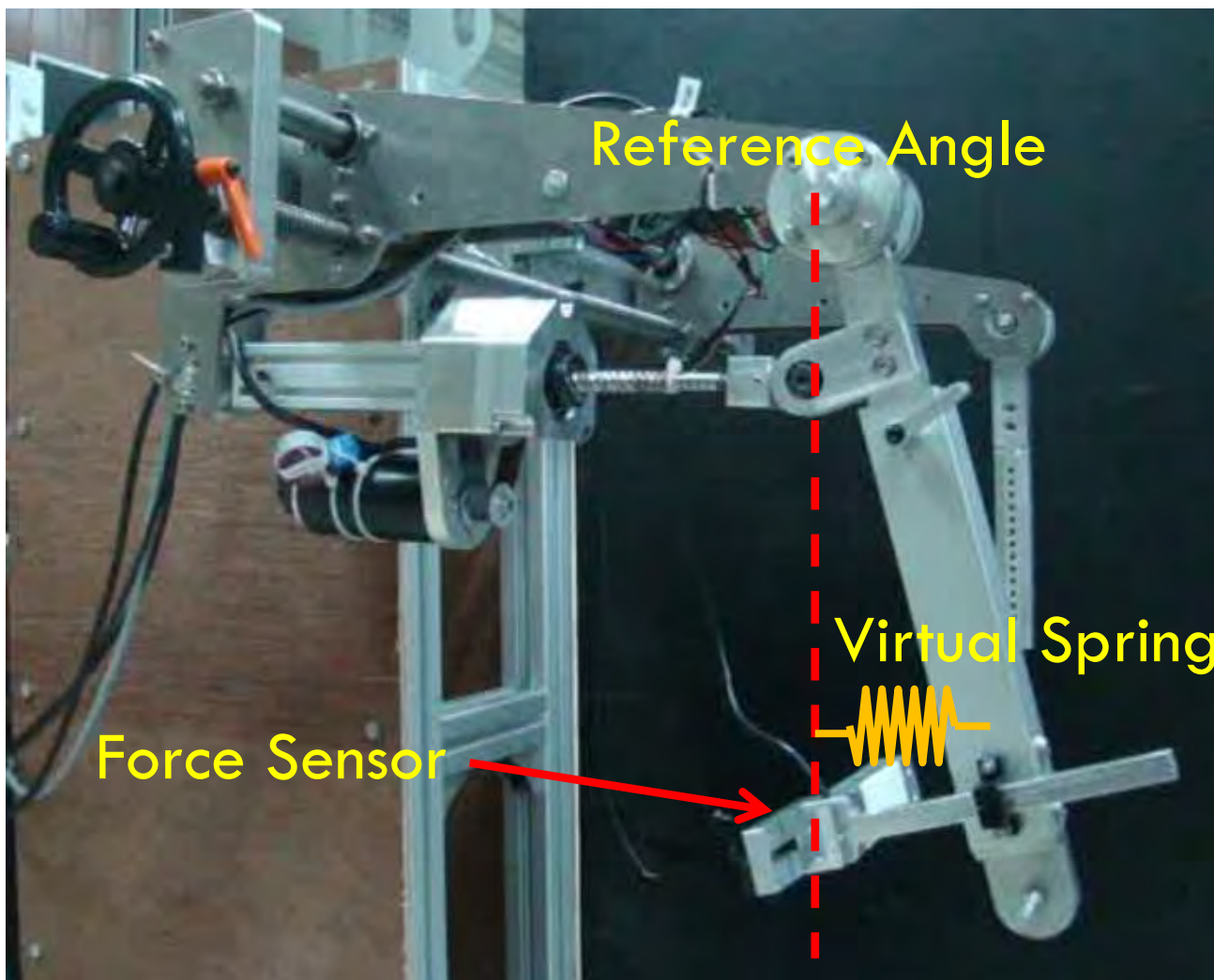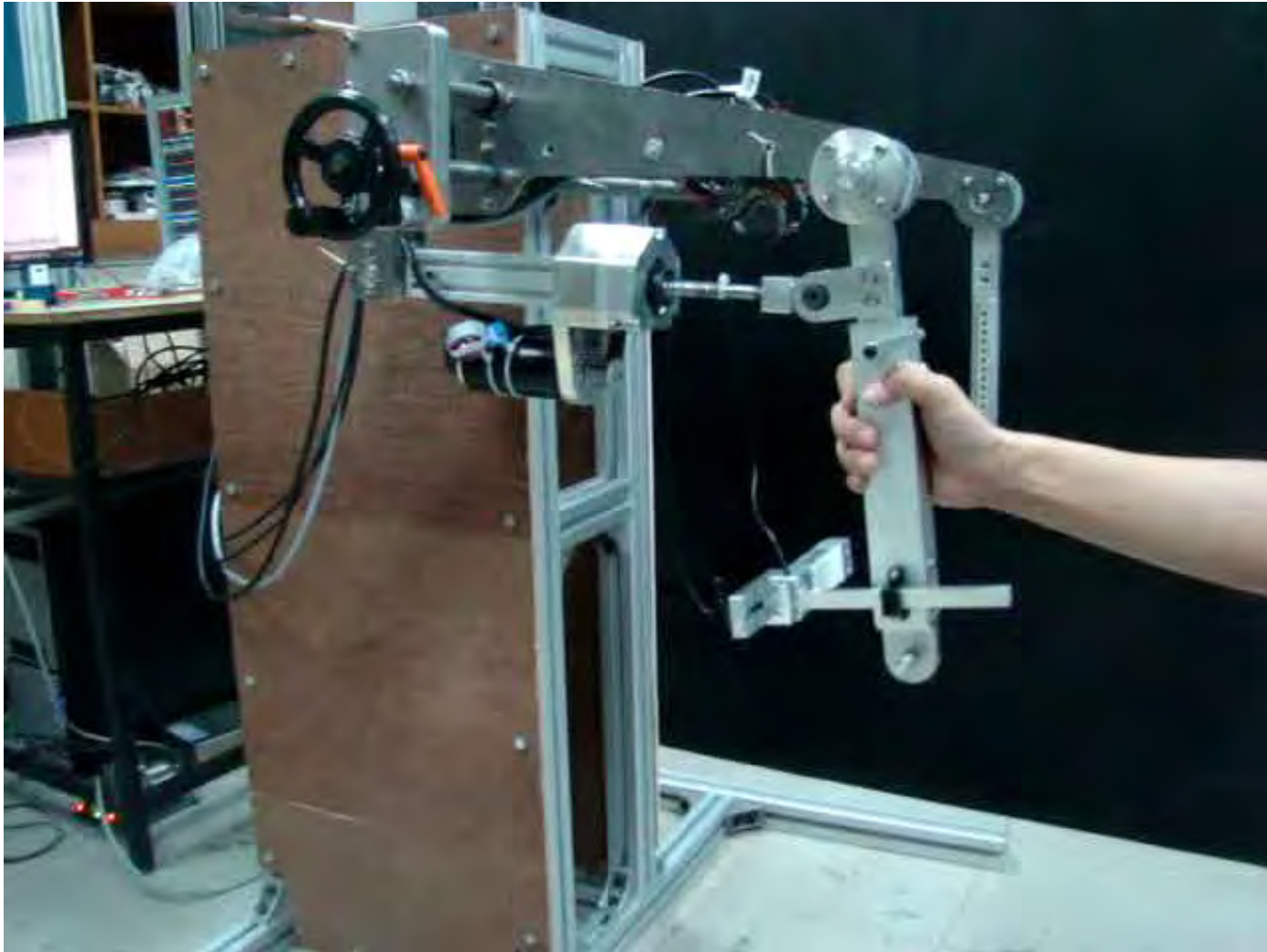
Exoskeleton Robot Demo

Impedance Control

Impedance Control Demo I

Impedance Control Demo II (Adjusting spring characteristics)