# tendon driven limbs == robotic limbs

# Prior work:

### 'Revolute mechanical linkages'

#### model of the thumb: the choice of kinematic

#### method or the variability/uncertainty of

• Valero-Cuevas, F. J., Johanson, M. E., & Towles, J.

#### D. (2003a). Towards a realistic biomechanical

#### musculoskeletal parameters. Journal of

Biomechanics, 36(7), 1019–1030. http://doi.org/

Peterson, M., & Wright, T. (2003b). The strength-

• Valero-Cuevas, F. J., Smaby, N., Venkadesan, M.,

10.1016/\$0021-9290(03)00061-7

#### description may be more critical than the solution

performance. Journal of Biomechanics, 36(2),

#### dexterity test as a measure of dynamic pinch

• Venkadesan, M., & Valero-Cuevas, F. J. (2008).

#### **Neural Control of Motion-to-Force Transitions**

with the Fingertip. Journal of Neuroscience, 28(6),

#### Effects of neuromuscular lags on controlling

#### the Royal Society a: Mathematical, Physical and

#### contact transitions. Philosophical Transactions of

Engineering Sciences, 367(1891), 1163-1179.

1366-1373. http://doi.org/10.1523/JNEUROSCI.

• Venkadesan, M., & Valero-Cuevas, F. J. (2009).

# Implicit assumptions:

# relationship is

## Muscle to force

### immediate and linear

# joints

## one another at fixed

## Bones are attached to

## limited joint by joint

## Rotation ranges are







# Joints translate

# throughout movement

## be limited by skin and

## Rotation ranges can

## passive ligaments

# Delayed & sluggish

### **Squishy Limbs**