Aim 2 - Calculate motorneuron activation profiles for complete hindlimb actuation

Calculation of joint torques

The simplest method of developing motorneuron signals is to first calculate joint torque about each joint and then decompose the total torque profile into individual muscle forces. This decomposition process has an infinite solution set, as individual muscle contributions can be combined in infinite permutations to generate the torque profile. First, an accurate total torque profile was established based on data from project collaborators. Next, the biomechanics of the system were considered to determine the impact of passive and active torque on the system. Finally, the complete torque profile was decomposed into individual muscle forces through a linear optimization technique.

* Passive
* Active

Distribution of muscle forces - optimization

The Canvas System