Cheetah-cub-S: Steering of a Quadruped Robot using Trunk Motion

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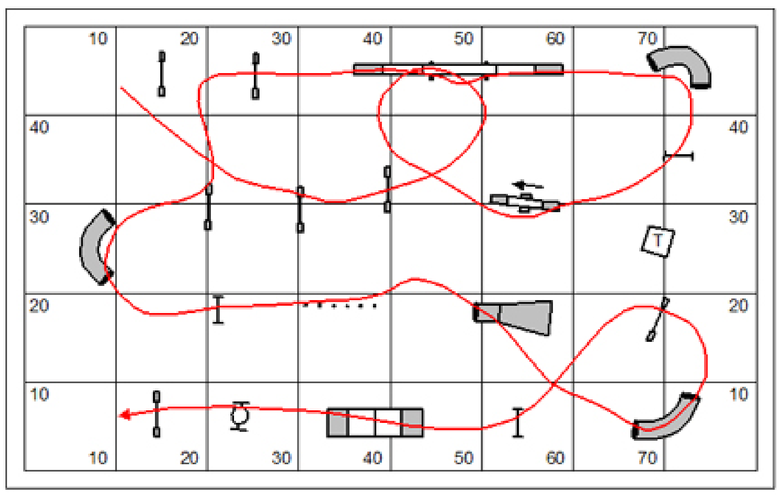
Motivation:

complex environments need:

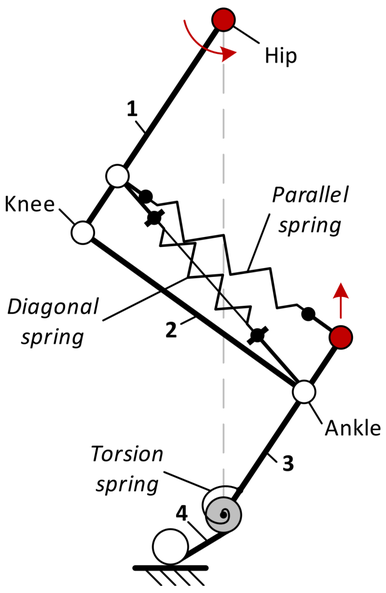
- adaptability
- versatility
- intelligent mechanics
- easy control

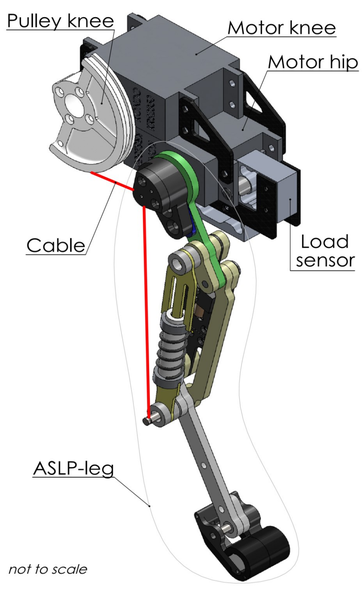


Mechanical Design:

ASLP-Leg:

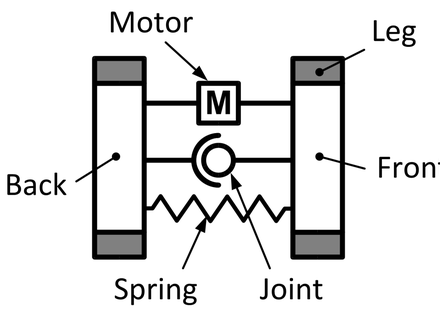
- robust and stable
- good performance (speed)

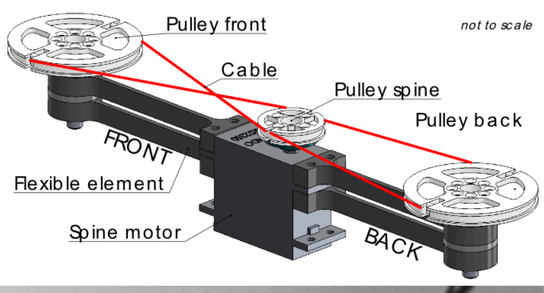


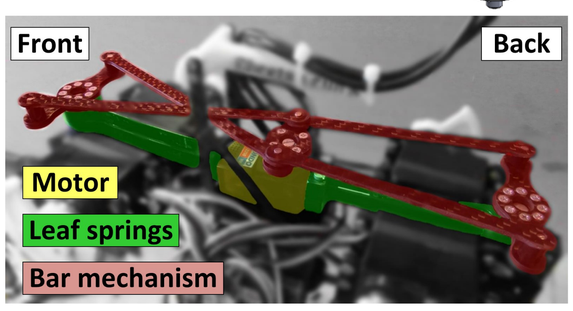


Spine:

- only one active DOF
- elastic materials

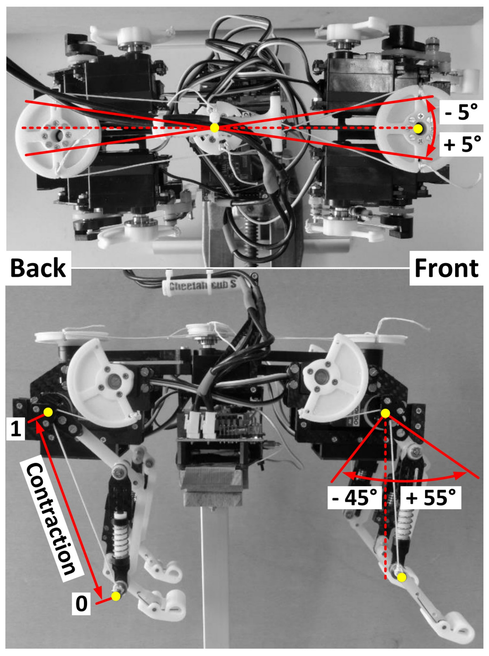






Ranges of motion:

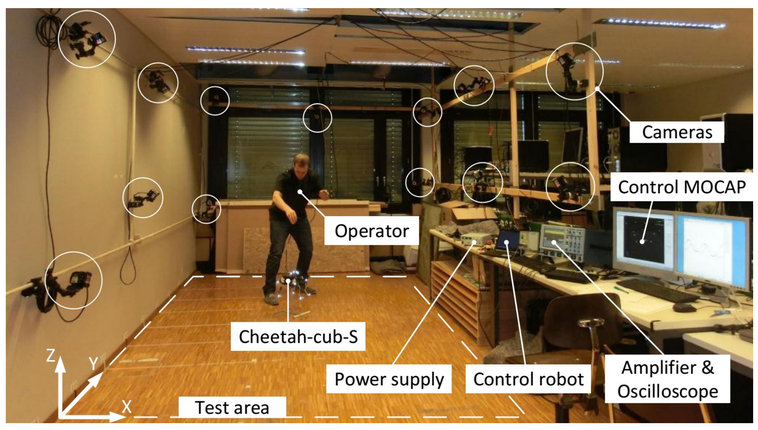
- moderate
- Leg like Cheetah-Cub

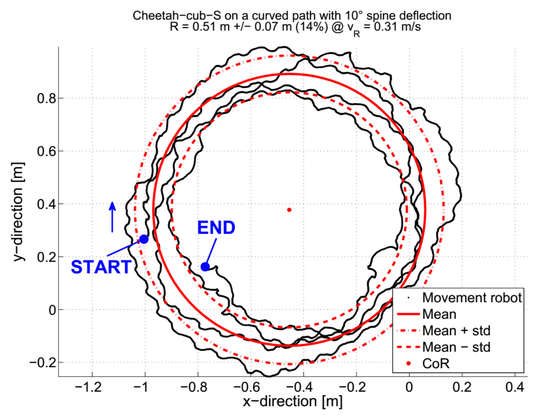


Test Setup and Analysis:

Test setup:

- Mocap
- Power consumption
- high speed camera
- min 1 Operator





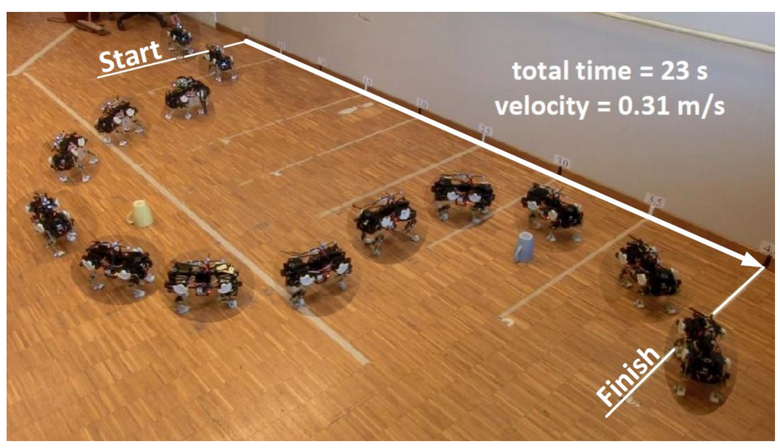
Data-Processing:

- Circle fit in Matlab
- Repetibility analysis
- Deviation analysis

Results

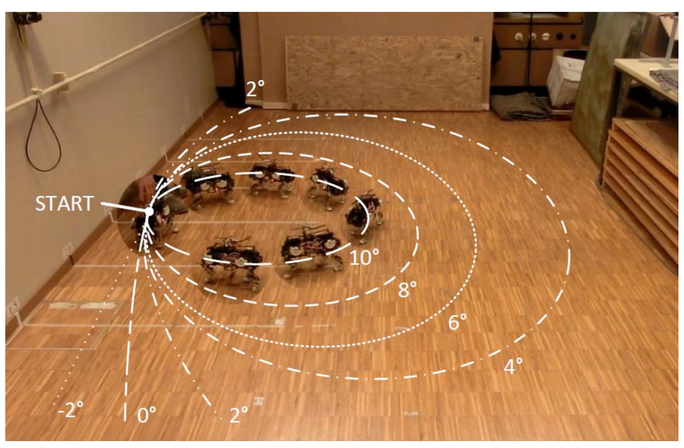
Slalom:

- versitile and easily controlable



Cricle-Diameters:

- repetitive behaviours



Speeds:

- too slow/to be improved