



FAMU-FSU
Engineering

Team 517: Stabilization of Payload for Legged Robots

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Project Scope

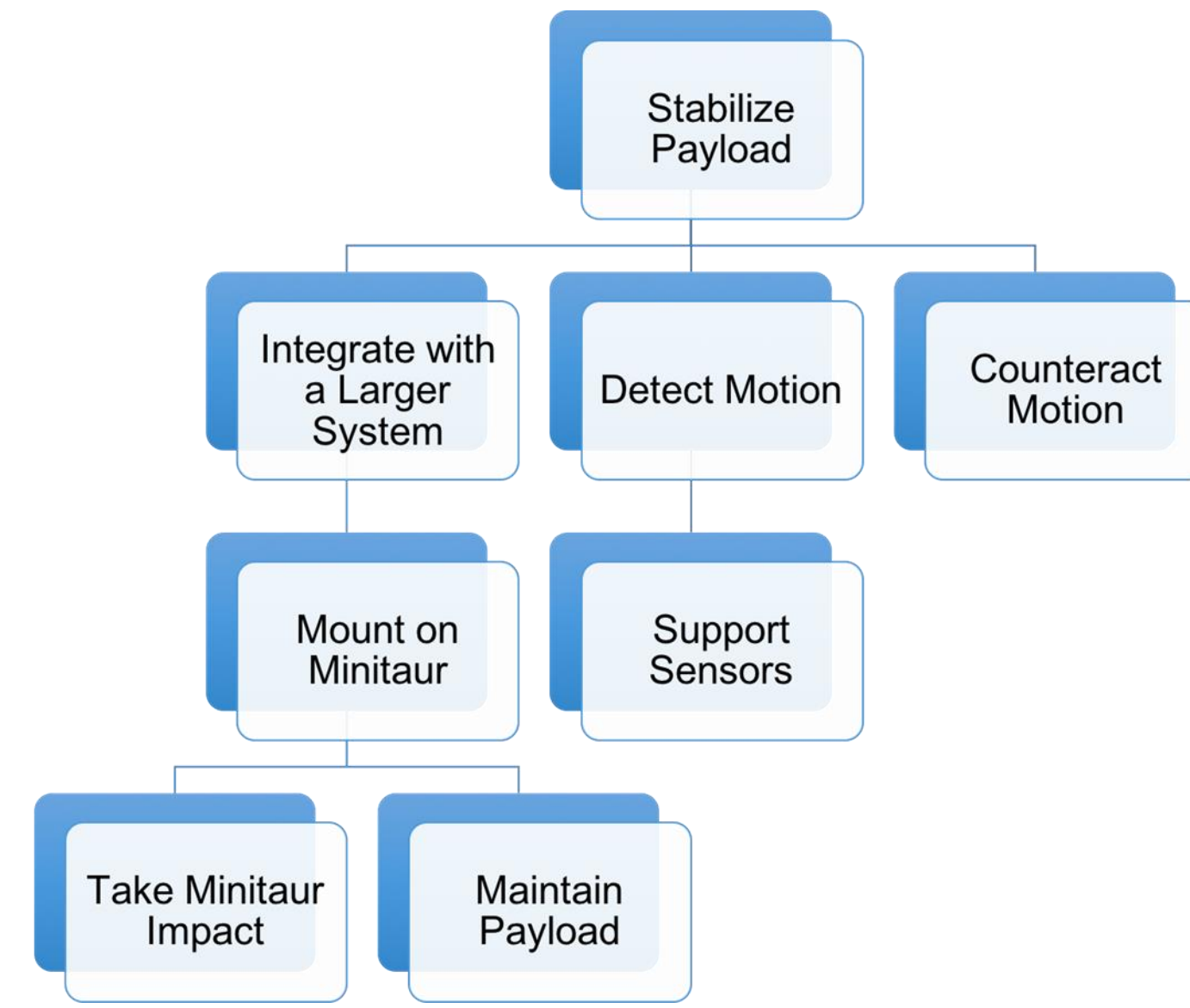
Key Goals

- Develop a dampening system to counteract unwanted motion
- Utilize damping techniques to reduce vibration
- Effectively improve camera and sensor feedback data

Assumptions

- Baseline is the Minitaur robot used in Aero-Propulsion, Mechatronics, and Energy center
- There will be significant weight restrictions on the load of the robot
- The vertical oscillation data can be seen in Figure 1

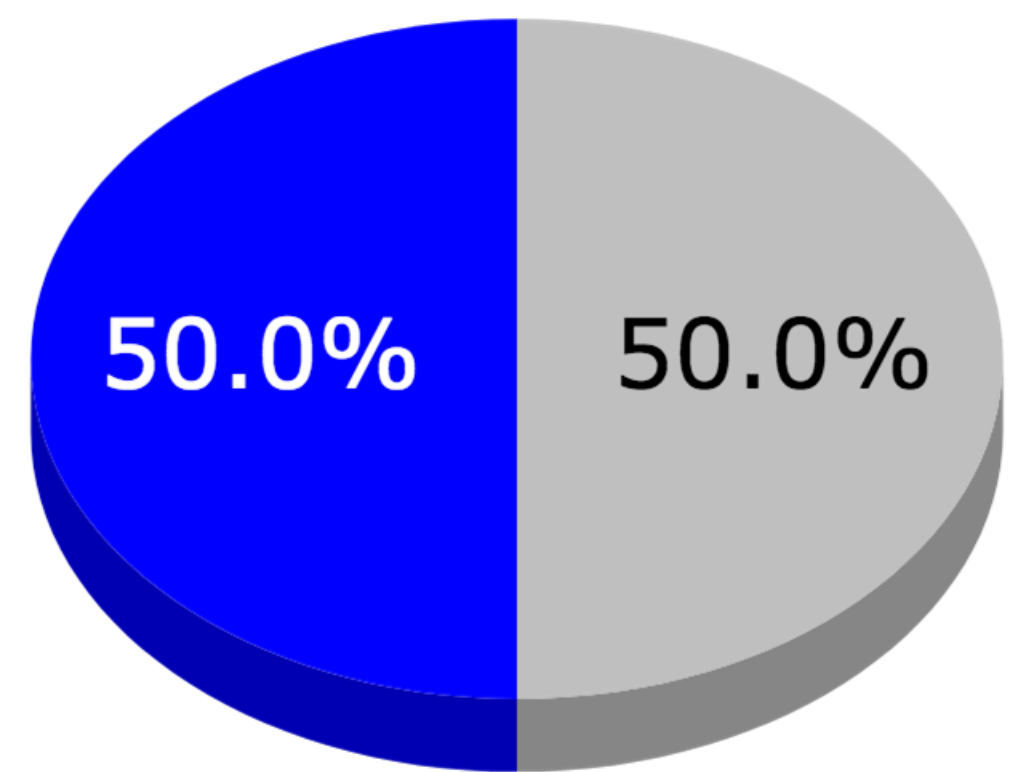
Functional Decomposition



Targets

Minimum Correction Factor

Maximum System Weight



Baseline: The Minitaur

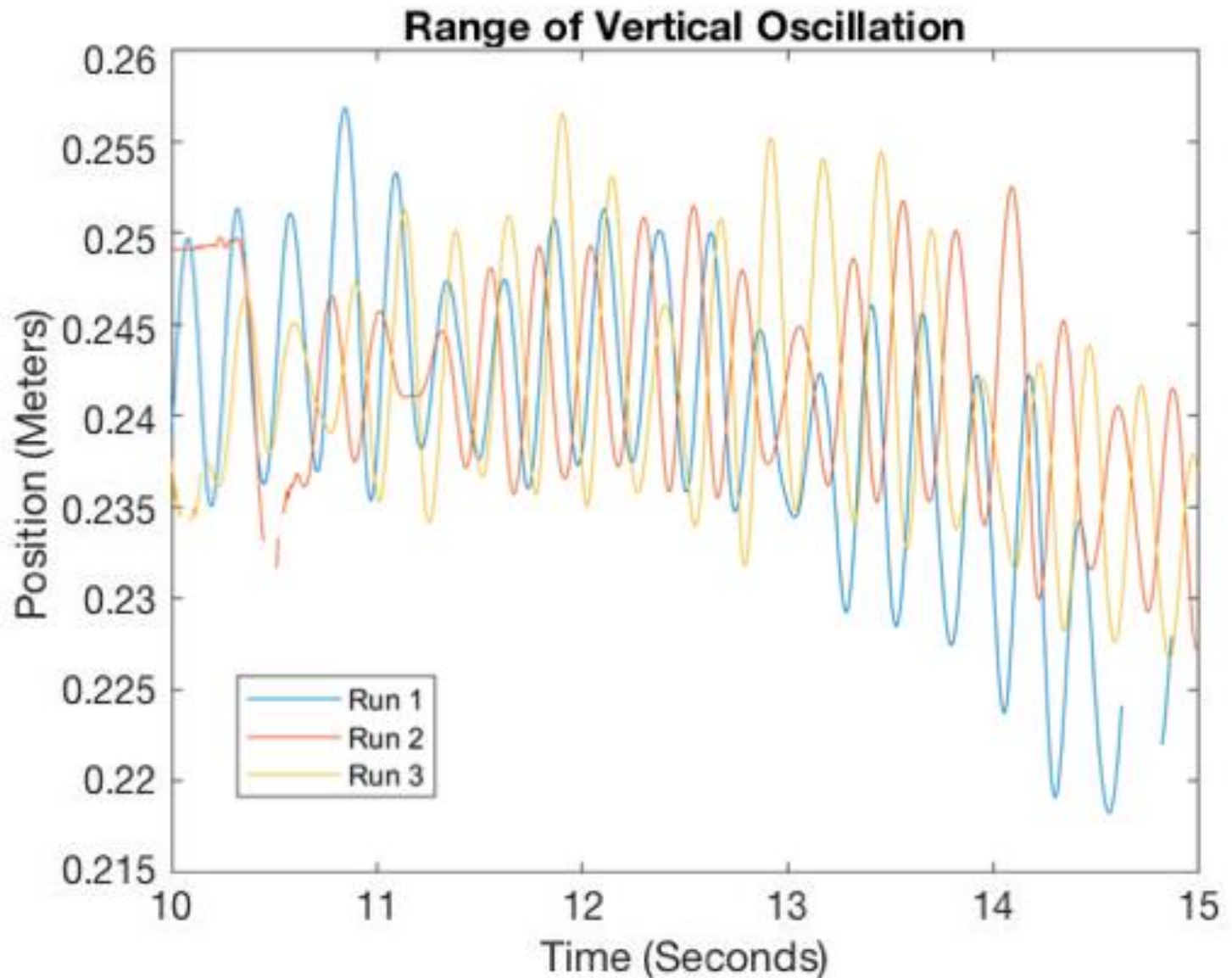


Figure 1. Range of vertical oscillation data for the Minitaur robot.



Figure 2. CAD model of the Minitaur robot.

Concept

- Connected by brackets and link arms to counteract motion on x, y, and z axis
- Three of the motors would focus solely on counteracting the movements in the specified axis
- Fourth motor controls the angle at which the payload deviates from the target

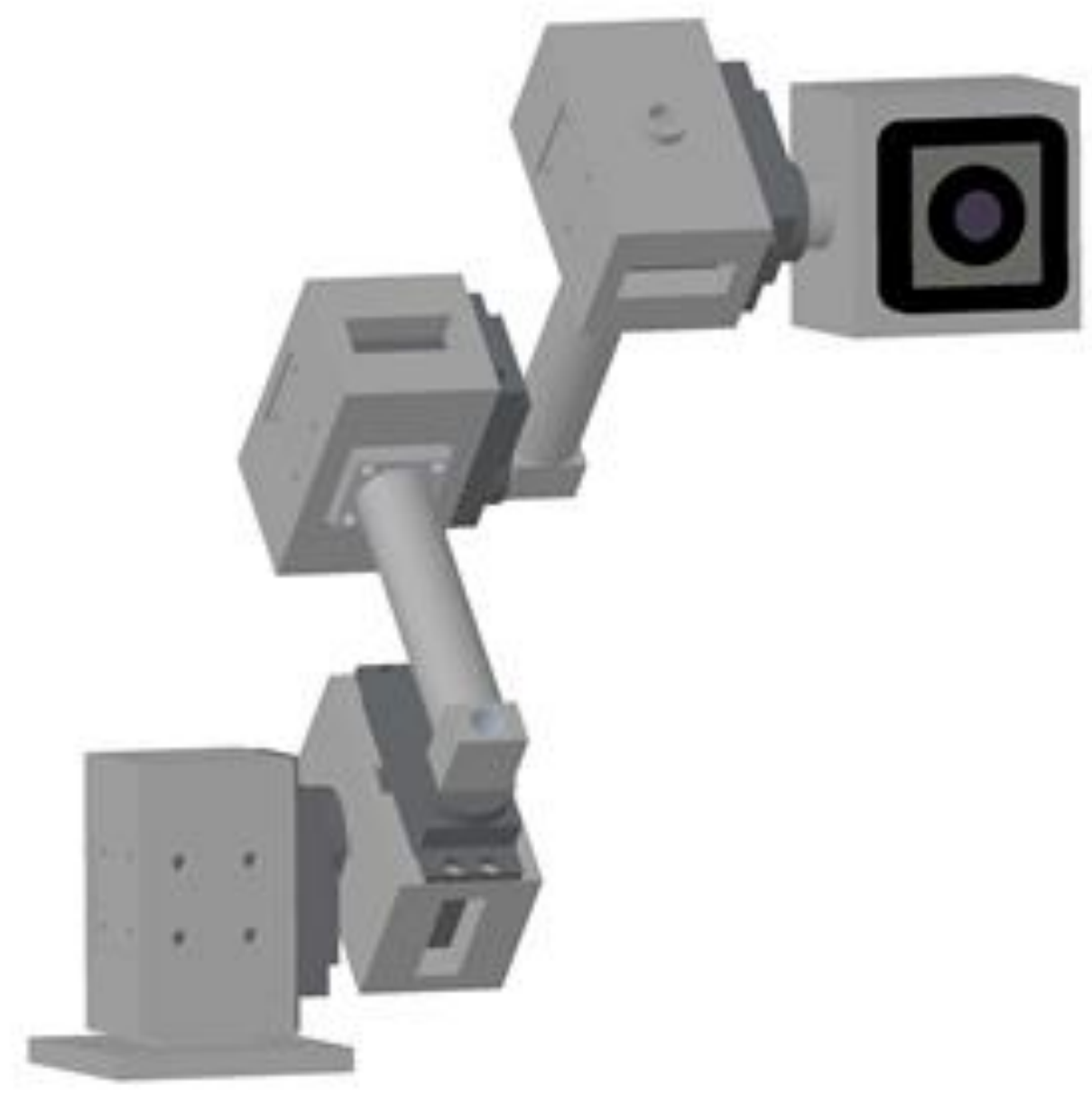
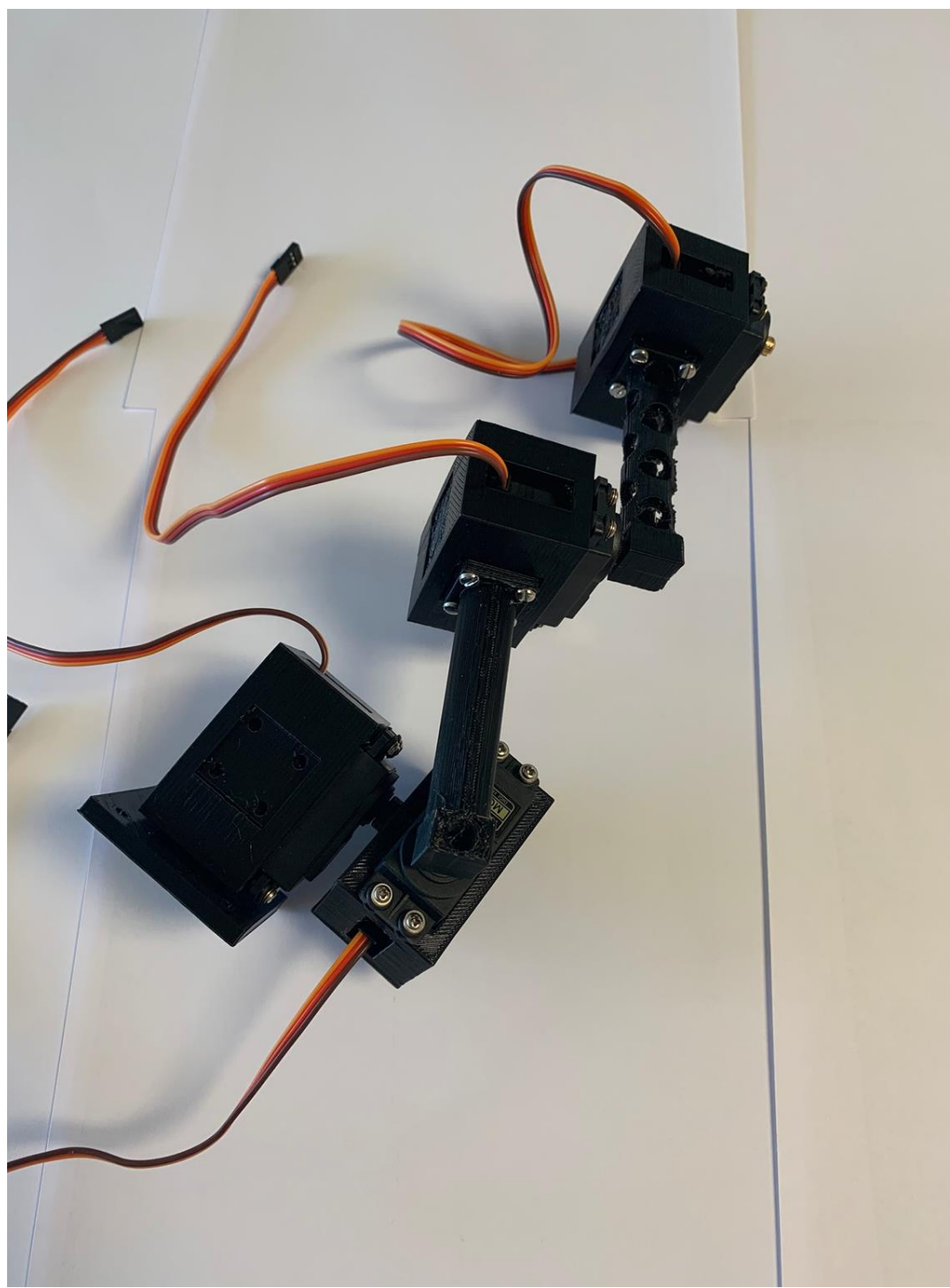


Figure 3. CAD model of the selected servo motor concept.

Manufacturing



Acknowledgements

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