ANYmal on Wheels

Exploiting the Advantages of Wheeled and Legged Robots on Varying Terrain

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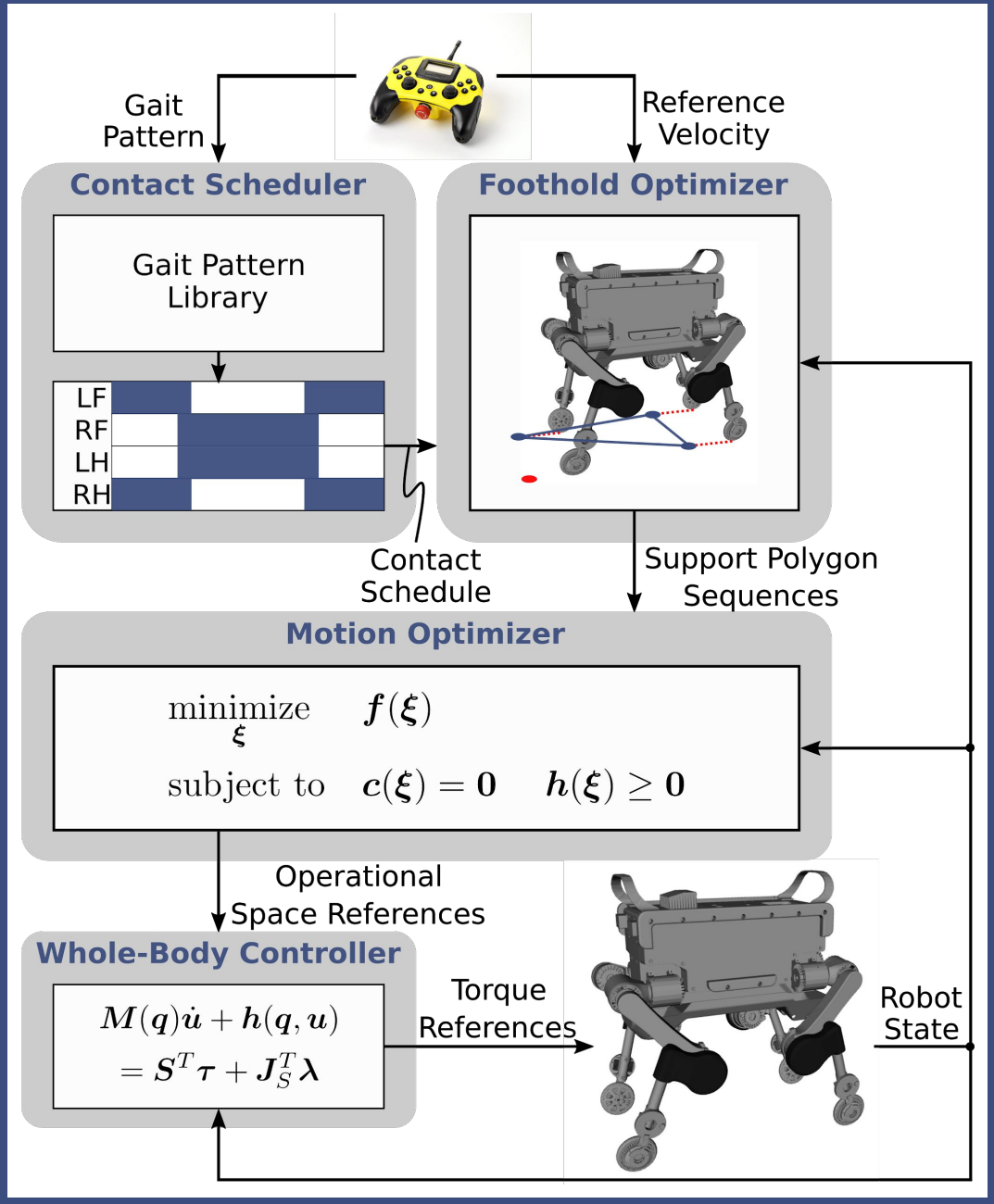
1 Legs and Wheels

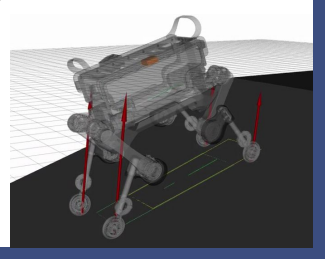
- Tight integration of the additional degrees of freedom introduced by the **actuated wheels**
- **Combines the advantages** of legged and wheeled locomotion
- **Fast, efficient, and versatile** locomotion over long distances and in challenging terrain

2 Approach



3 Motion Optimizer and Whole-Body Controller

- **Zero-Moment Point** based motion optimization continuously updates reference trajectories
- **Hierarchical whole-body controller** includes the nonholonomic rolling constraints



4 References

Keep Rollin' – Whole-Body Motion Control and Planning for Wheeled Quadrupedal Robots. Bjelonic, M.; Bellicoso, C D.; de Viragh, Y.; Sako, D.; Tresoldi, F D.; Jenelten, F.; and Hutter, M. IEEE Robotics and Automation Letters. 2019.