6 Conclusion

The nonlinear and linearized model for the two-wheel robot is presented. Three types of control strategies, PID-PID based parallel dual feed-back, serial dual feed-back and hybrid optimal control using Feed-forward PID and Feed-back LQR have been designed. And it is concluded that for three different input types, the hybrid controller can achieve a better performance of robot position tracking and balancing. The disturbance is considered by different types and it have been seen that still the hybrid controller satisfy a better robust performance. The hybrid control strategy candidates as preferred control design method for an optimal control design to demonstrate the desired characteristics of the complex nonlinear dynamic systems.

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