



Nonlinear Control of Wheeled Mobile Robots (Paperback)

By Warren E. Dixon, Darren M. Dawson, Erkan Zergeroglu

Springer London Ltd, United Kingdom, 2001. Paperback. Condition: New. 2001 ed.. Language: English . Brand New Book ***** Print on Demand *****.This book examines the control problem for wheeled mobile robots. Several novel control strategies are developed and the stability of each controller is examined utilizing Lyapunov techniques. The performance of each controller is either illustrated through simulation results or experimental results. The final chapter describes how the control techniques developed for wheeled mobile robots can be applied to solve other problems with similar governing differential equations (e.g., twin rotor helicopters, surface vessels). Several appendices are included to provide the reader with the mathematical background utilized in the control development and stability analysis. Two appendices are also included that provide specific details with regard to the modifications that were done to commercially available mobile robots (e.g., a K2A manufactured by Cybermotion Inc. and a Pioneer II manufactured by Activemedia) to experimentally demonstrate the performance of the torque input controllers.

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