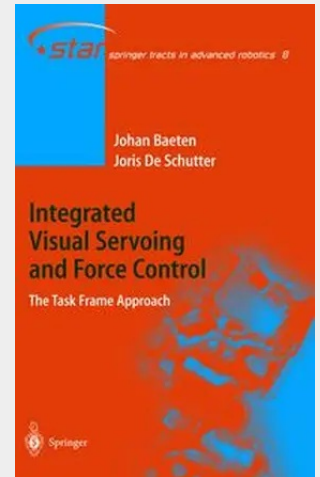


Integrated Visual Servoing and Force Control

The Task Frame Approach

Sight and touch are two elementary, but highly complementary senses - for humans as well as for robots. This monograph develops an integrated vision/force control approach for robotics, combining the advantages of both types of sensors while overcoming their individual drawbacks. It shows how integrated vision/force control improves the task quality in the sense of increased accuracy and execution velocity and widens the range of feasible tasks. The unique feature of this work lies in its comprehensive treatment of the problem from the theoretical development of the various schemes down to the real-time implementation of interaction control algorithms on an industrial robot. The presented approach and its potential impact on the performance of the next generation of robots is starting to be recognized by major manufacturers worldwide.

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