

Learning Control:

Ideas and Problems in Adaptive Fuzzy Control

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Intelligent control is a promising way of control design in recent decades. Intelligent control design usually needs some knowledge of the system considered. However, such knowledge usually may not be available. Learning becomes an important mechanism for acquiring such knowledge. Learning control seems a good idea for control design for unknown or uncertain systems. To learn controllers is always a good idea, but somehow like a dream. It is because learning is to learn from something. But when there is no good controller, where to learn from? Nevertheless, there still exist approaches, such as adaptive fuzzy control, that can facilitate such an idea. It is called performance based learning (reinforcement learning and Lyapunov stability). This talk is to discuss fundamental ideas and problems in one learning controller -- adaptive fuzzy control. Some deficits of such an approach are discussed. The idea is simple and can be extended to various learning mechanisms. In fact, such an idea can also be employed in various learning control schemes. If you want to use such kind of approaches, those issues must be considered in your study