Application of Artificial Neural Networks to Adaptive Speed Control under ARDUINO

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Abstract : Nowadays, adaptive control schemes are being used when model based control schemes are applied in presence of uncertainty and model mismatches. Artificial neural networks have been employed both in modelling and control of non-linear dynamic systems with unknown dynamics. In fact, these are powerful tools to solve this control problem when only input-output operational data are available. A neural network controller under SIMULINK together with the ARDUINO hardware platform has been used to perform real-time speed control of a computer case fan. Comparison of performance with a PID controller has also been presented in order to show the efficacy of neural control under different command signals tracking and also when disturbance signals are present in the speed control loops.