Optimal Fuzzy Regulator

Ahmed, MS; Bhatti, UL; Al-Sunni, FM; El-Shafei, M

Summary

The conventional design of fuzzy logic controller uses human intuition and experience, which rarely constitutes an optimal design. In this paper, a systematic design procedure is presented to realize the optimal fuzzy logic regulator. The proposed scheme minimizes a suitable criterion function employing the steepest descent method. The recently proposed Block Partial Derivative (BPD) is used to facilitate the gradient computation.

References:
1. AHMED MS, 1994, IEE P-CONTR THEOR AP, V141, P315
2. AHMED MS, 1995, IEE P-CONTR THEOR AP, V142, P475
3. AHMED MS, 1998, INT J CONTROL, V69, P65
4. ALSUNNI F, 1999, IN PRESS ARABIAN J S
5. ASTROM KJ, 1990, COMPUTER CONTROLLED
6. AYOUBI M, 1995, P AM CONTR C SEATTL, P2757
7. GUPTA MM, 1991, P AM CONTR C, P30
8. HWANG GC, 1992, FUZZY SET SYST, V48, P279
9. JANG JSR, 1995, P IEEE, V83, P378
10. KING PJ, 1977, AUTOMATICA, V13, P235
11. KOSKO B, 1994, IEEE T COMP, V43, P1153
12. LEVIN AU, 1996, IEEE T NEURAL NETWOR, V7, P30
13. MAMDANI EH, 1974, P I ELECTR ENG, V121, P1585
14. RUMELHART DE, 1986, PARALLEL DISTRIBUTED, V1, CH8
15. SCHWARTZ DG, 1994, P IEEE, V82, P482
16. TAKAGI T, 1985, IEEE T SYST MAN CYB, V15, P116
17. WANG LX, 1994, ADAPTIVE FUZZY SYSTE
18. YEH ZM, 1994, FUZZY SET SYST, V64, P339
19. ZADEH LA, 1965, INFORM CONTR, V8, P338

For pre-prints please write to: abstracts@kfupm.edu.sa