

Solving the Quadratic Programming Problem Using a Recurrent Neural Network

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Abstract : In this paper, a fuzzy recurrent neural network is proposed for solving the classical quadratic control problem subject to linear equality and bound constraints. The convergence of the state variables of the proposed neural network to achieve solution optimality is guaranteed.

Keywords : REFERENCES [1] Xia, Y, A new neural network for solving linear and quadratic programming problems. IEEE Transactions on Neural Networks, 7(6), 1996, pp.1544-1548. [2] Xia, Y., & Wang, J, A recurrent neural network for solving nonlinear convex programs subject to linear constraints. IEEE Transactions on Neural Networks,16(2), 2005, pp. 379-386. [3] Xia, Y., H, Leung, & J, Wang, A projection neural network and its application to constrained optimization problems. IEEE Transactions Circuits and Systems-I, 49(4), 2002, pp.447-458.B. [4] Q. Liu, Z. Guo, J. Wang, A one-layer recurrent neural network for constrained pseudoconvex optimization and its application for dynamic portfolio optimization. Neural Networks, 26, 2012, pp. 99-109.

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