

عنوان مقاله:

Log-sum-exp optimization problem subjected to Lukasiewicz fuzzy relational inequalities

محل انتشار:

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نویسندگان:

Amin Ghodousian - School of Engineering Science, College of Engineering University of Tehran, P.O.Box ۱۱۳۶۵-۴۵۶۳, Tehran, Iran

Alireza Norouzi Azad - School of Engineering Science, College of Engineering University of Tehran, P.O.Box ۱۱۳۶۵-۴۵۶۳, Tehran, Iran

Hadi Amiri - School of Engineering Science, College of Engineering University of Tehran, P.O.Box ۱۱۳۶۵-۴۵۶۳, Tehran, Iran

خلاصه مقاله:

In this paper, we introduce a nonlinear optimization problem whose objective function is the convex log-sum-exp function and the feasible region is defined as a system of fuzzy relational inequalities (FRI) defined by the Lukasiewicz t-norm. Some necessary and sufficient conditions are derived to determine the feasibility of the problem. The feasible solution set is characterized in terms of a finite number of closed convex cells. Since the feasible solutions set of FRIs is non-convex, conventional methods may not be directly employed. An algorithm is presented for solving this nonlinear problem. It is proved that the algorithm can find the exact optimal solution and an example is presented to illustrate the proposed algorithm.

کلمات کلیدی:

Fuzzy relational inequalities, nonlinear optimization, Lukasiewicz t-norm, convex functions, log-sum-exp function

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