Boosting Active Contours for Weld Pool Visual Tracking in Automatic Arc Welding

Detecting the shape of the non-rigid molten metal during welding, so-called weld pool visual sensing, is one of the central tasks for automating arc welding processes. It is challenging due to the strong interference of the high-intensity arc light and spatters as well as the lack of robust approaches to detect and represent the shape of the nonrigid weld pool. We propose a solution using active contours including an prior for the weld pool boundary composition. Also, we apply Adaboost to select a small set of features that captures the relevant information. The proposed method is applied to weld pool tracking and the presented results verified its feasibility.

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