

## عنوان مقاله:

پیش بینی و بهینه سازی هندسه جوش در فرایند جوشکاری قوس الکتریکی با گاز محافظ با استفاده از دستگاه بردار پشتیبان حداقل مربعات

## محل انتشار:

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## خلاصه مقاله:

In Wire and arc additive manufacturing (WAAM) based on Gas metal arc welding (GMAW) is one of the methods of manufacturing metal layer by layer. One of this method's basic steps is predicting the welding geometry created in each welding step. In the current research, an experimental study was conducted in this field considering the effective parameters of welding geometry. For this purpose, three parameters of voltage, welding speed, and wire feeding speed were considered as effective parameters on the welding geometry of the process. The width and height of the weld bead was selected as the answer according to the type and application of the research. The least squares support vector machine was used to model the welding geometry in the process. The results obtained from the regression ( $R^2$ ) of train, test, validation, and total were ۰.۹۴۵, ۰.۷۹۳, ۰.۸۹۴, and ۰.۸۸۱ respectively. The comparison between the experimental data and the model data shows the significance of the proposed model.

## کلمات کلیدی:

Wire and arc additive manufacturing, gas metal arc welding, welding geometry, least squares support vector machine, modeling,

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