

MODELING MANUFACTURING



EWI AND AWESIM CREATE A WELD-PREDICTION APP

EWI, an engineering cooperation that aims to “[advance] industrial technologies through world-class engineering solutions,” recently partnered with AweSim to do just that. Manufacturing processes come with a host of costly, time-consuming challenges. By collaborating with a cooperation like EWI, manufacturers are able to conquer many of the difficulties the engineering process presents.

One of EWI’s services is a 3D manufacturing simulation app created with the help of OSC. The app allows clients to simulate arc welding procedures, predicting whether or not the process will result in one of manufacturing’s biggest hiccups: weld-induced distortion. EWI’s principal engineer on structural integrity and modeling, Yu-Ping Yang, described the role OSC had in developing the application.

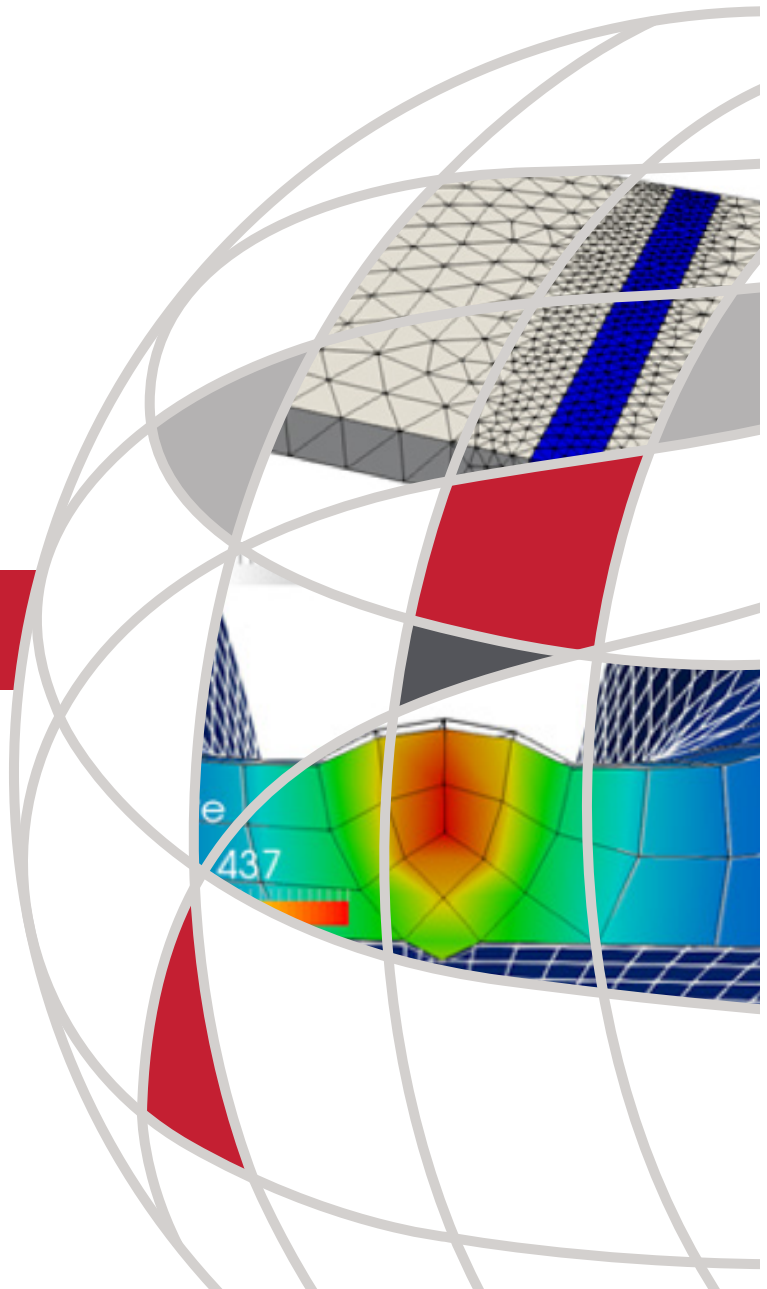
“The new web application front end was developed by OSC. [It] allows interactive rotation and zoom controls by a user,” Yang said.

VIRTUAL DESIGNS. REAL BENEFITS.

The app is already very popular because of its functionality. It’s ability to model arc welding, laser welding and hybrid laser arc welding in an accessible way and its measurable results in increased efficiency have drawn consumers in. Manufacturers using the app have experienced cost-savings in the millions and scrap rates reduced by 60%.

“Industrial companies use this app to optimize their product design and manufacturing process, which [creates] big savings in terms of time and money.”

— Yu-Ping Yang, Ph.D., EWI Research



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THE CHALLENGE

One of the big challenges that manufacturers face is the possibility of weld-induced distortion during the production process for heavy equipment. Distortions to the equipment take up obvious extra cost, time and resources, burdening the manufacturing process.

THE APPROACH

OSC partnered with EWI to find a way for manufacturers to prevent weld-induced distortion. Modeling and simulation app of the manufacturing process is a major was to open up new opportunities for preventive measures to be taken.

THE SOLUTION

EWI and OSC created an application that models the welding of different commonly used steels and other materials in a manufacturing simulation. This allows engineers to see where distortion may occur, reducing the scrap rate by 60%.