Ship Welding Goes to the Dogs



Path Robotics' Rove robotic welding system, seen here visiting the booth of partner company HII. Credit: Brett Davis

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Welding is a challenge in shipbuilding. There's a critical shortage of skilled welders, and massive ship assemblies, inconsistent fit-up stages and large metal pieces that can't be moved make it difficult to automate welding processes.

Enter Rove, a quadruped robotic welding system the size of a standard poodle.

Rove is produced by Path Robotics, which specializes in artificial intelligence for manufacturing. Path Robotics' AI program Obsidian delivers autonomous welding inside cells, and Rove takes that one step further, bringing Obsidian into the

field. In essence, Rove comes to the ship rather than the ship coming to Rove.

Legged robots aren’t a new concept in welding, but they’ve traditionally been considered too unstable for precision welding. Obsidian gives Rove the ability to maneuver successfully in high-variability environments like shipbuilding.

Rove, which has a welding torch attached to its head, uses cameras and AI to scan a ship and identify where welds are needed. It can evaluate uneven terrain, climb around large ships and reach remote weld points that humans may have difficulty accessing. Path Robotics says Rove can weld with consistent quality, even when metal parts aren’t perfectly aligned.

Saronic Technologies, which manufactures autonomous maritime vessels, is one of the first companies to use Rove.

“Building the next generation of autonomous vessels means rethinking not just how ships operate, but also how they’re made,” John Morgan, Saronic’s head of manufacturing, said in a press release from Path Robotics.

To see a demonstration of Rove, visit the Path Robotics booth, T76 in the Terrace Exhibits area.