

Winners of the AI Algorithm Competition (Awards Ceremony)

Tadano Ltd. (Head Office: Takamatsu City, Kagawa Prefecture; President: Toshiaki Ujiie) on January 28 (Friday) held an online awards ceremony for the “Crane Slewing Operation Optimization Challenge” AI algorithm competition which was conducted by our company.

This competition represents the industry's first initiative aimed at taking a big step toward automation in the world of construction crane operation. 1,033 participants accepted the challenge to develop motion control AI that operates a crane simulator, competing in terms of speed, accuracy, and safety of load transport during various kinds of slewing operations. In total 1,150 entries were received.

The awards ceremony was held online with the participation of around 80 persons. The winners (first, second, and third place) gave explanatory presentations, and there was lively Q&A regarding the ingenious solutions created by each of the winners. Some of the winners expressed positive statements such as “I was a bit hesitant about participating at first but I am happy that I did,” and “I am very pleased to have won a prize.” Others made constructive comments such as “It made me much more familiar with the crane,” and “Next time I want to make better use of reinforcement learning.”

Looking back at this competition, Tadano President and CEO Toshiaki Ujiie said in his ceremony remarks, “First I would like to thank all of the many people who participated. This competition produced some very exciting results, with the participants delivering excellent results, which were unachievable only by Tadano's engineers. As we address urgent issues including crane automation, electrification, and weight reduction, in addition to searching for solutions ourselves, we want to also make active use of this kind of open innovation in the future.”

Based on the Tadano vision of “Pursuing Further Excellence for the World and the Future”, we will create further opportunities for open innovation, and will address the issues facing the industry together.

● Winners

Place	Final score	User name / Team name (honorifics omitted)
1	0.94581	team nssol

2	0.94141	kj1729
3	0.93642	soldier-tn
4	0.93638	yui_kasuga
5	0.93440	oka.kou

● About the “Crane Slewing Operation Optimization Challenge” AI algorithm competition

In the construction industry where Tadano products are active, retirement of skilled workers due to advanced age and a slowdown in new hirings have resulted in a deepening labor shortage and other problems, and there has been a demand for development related to unmanned operation and automation.

Crane slewing operation should be done quickly and requires experienced skills as operators need to be careful about the movement of the crane and the weight and position of the load. Participants in this competition developed automation algorithms in the simulator that was provided by Tadano, and competed for overall rankings determined primarily by crane movement accuracy and speed.

● Overview of the “Crane Slewing Operation Optimization Challenge” AI algorithm competition

Task	Develop motion control AI that operates the crane simulator, and compete in terms of speed, accuracy, and safety of load transport during various kinds of slewing operations.
Schedule	Competition start: September 13, 2021 Competition end: November 30, 2021
Prizes	1st place: 2,000,000 yen 2nd place: 1,000,000 yen 3rd place: 500,000 yen 4th place: 300,000 yen 5th place: 200,000 yen
Organizer	SIGNATE Inc.

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