



Key Development Points

Anomaly Detection Support with Foundation Models “Partner LLM”: Integrates robot state data and images to interactively identify causes of anomalies and suggest recovery actions.

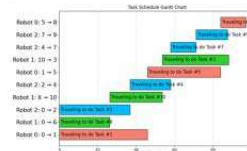
Rescue Target Localization Technology: Combines building information with camera footage to estimate the likelihood of victim presence, improving search efficiency.

Task Allocation through Reinforcement Learning: Enables optimal autonomous assignments for multiple robots by considering their mobility characteristics and inspection tasks.

Task Allocation



出力: タスク割当結果、自動点検



Partner LLM



Team Introduction

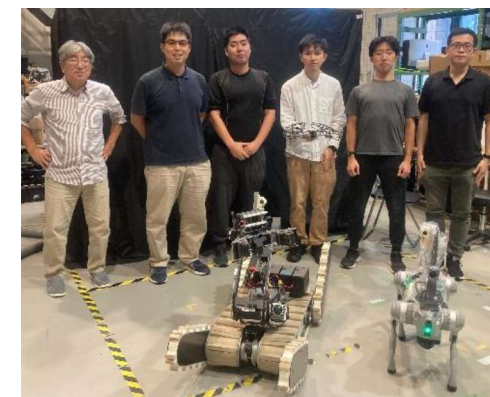
Tohoku University's **Ohno Laboratory** aims to build a society where disasters can be handled **safely and reliably in areas inaccessible to humans**, through research and development of disaster response robots.

[Motivation and Formation]

The team was founded to develop technologies that enable robots to operate safely and flexibly in **high-risk environments**, such as plant disaster sites. It has earned notable achievements in disaster response competitions, including **winning WRS 2020** and **third place at the RoboCup Rescue World Championship**. This year's WRS will focus on **verifying foundation model-based technologies** toward practical implementation.

[Future Outlook]

The team will develop a **comprehensive disaster response platform** centered on foundation models like *Partner LLM*, integrating **anomaly detection**, **victim localization**, and **task allocation among diverse robots**. By enabling multiple robots to **coordinate and share situational data**, the platform aims to significantly improve **responsiveness and reliability** in disaster response.



Role	Name	Affiliation/Position	Area of expertise, research fields
Team Leader / System Integration	Kenta Gunji	Tohoku University / Research Fellow	System Integration, SLAM
Robot Operator / Partner LLM Development	Shodai Suzuki	Tohoku University / Master's Program (2nd Year)	Automation of obstacle removal in plant facilities during disasters
Robot Operator / Victim Localization Development	Haruki Yasuda	Tohoku University / Master's Program (1st Year)	Advancing autonomous intelligence for crawler robot mobility and operations
Safety Manager / Legged Robot Development	Rawin	Tohoku University / Master's Program (1st Year)	Automating Robot Systems for Industrial Inspection
Safety Manager / Hardware Design	Kenichi Takahashi	Tohoku University / Technical Staff	Robot assembly, evaluation, and experimental support
Communications Manager	Shotaro Kojima	Tohoku University / Assistant Professor	Crawler Robots

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