Goal3 Realization of AI robots that autonomously learn, adapt to their environment, evolve in intelligence and act alongside human beings, by 2050. 🖉 MOONSHOT

Intelligent Multi Agents for Exploration and Settlement in Unknown and Unexplored Areas

Project manager

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Leader's institution

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R&D institutions

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Summary of the project

The project acknowledges the limitations and risks associated with relying solely on high-precision measurement and control by a few large robots. To overcome these challenges, alternative solutions are being sought, focusing on decentralized and self-organizing AI robot technology. The objective is to develop robots capable of long-term survival and operation in high-risk and unfamiliar natural environments with unpredictable conditions. This entails studying how the collective can evolve through updating and expanding shared functions and introducing new robot units. Furthermore, the project aims to create an advanced system that utilizes swarm intelligence to construct activity bases, where multiple robots collaborate to transport and deploy robot base containers, functioning as operational hubs. By combining these approaches, the goal is to achieve the establishment of lunar activity bases through the evolution of swarm intelligence by the year 2050. In addition, developed technologies can be applicable to the earth such as natural disasters, huge equipment inspection, etc.



Milestone by year 2030

The goal is to establish and demonstrate a technology that enables the self-organization and control of a swarm of low-functionality small robots through advanced strategic intelligence called "network intelligence," which is distributed among each robot. This technology will allow us to conduct exploration of the interior of lunar lava tubes, investigate suitable habitats, and transport spherical robot containers, among other tasks. In addition, we will carry out a mission inside the lunar lava tube side hole, it will bring information necessary for future research and development. These will make authentic lunar city development phase started.

Milestone by year 2025

We will plan the world's first lunar lava tube exploration mission. For its realization, several types of small exploration robot prototypes will be completed, and their ground experiments will be carried out to verify the mission. The elemental function of shared distributed intelligence "Network Intelligence" that is an AI function for robot swarms to autonomously explore unknown areas, will realize the autonomous swarm robot having initial exploration function. These functions will be tested in real environments such as construction sites. In addition, a mechanism of robots boarding function and flexibly adjust function to swarm's functions will be realized and implemented in the control device.

Project structure



