

G- SPIDER Robot

March 7, 2026 • vajiramandravi.com



G- SPIDER Robot Latest News

Recently, under Swachh Bharat Mission–Urban 2.0, Thiruvananthapuram Municipal Corporation has deployed an AI-powered G-SPIDER robot

About G- SPIDER Robot

- It is an **automated canal cleaning robot**, created by Genrobotic Innovations.
- It is engineered to operate in complex, high-risk canal environments without any human entry.

Features of G- SPIDER Robot

- **Efficient Operation:** It is designed to function efficiently even during high water levels and continuous flow conditions.
- **Advanced Technology**

- It is built on **Cable-Driven Parallel Robotics (CDPR) architecture** and **powered by AI-enabled vision and sensor intelligence**.
- It has a five-degrees-of-freedom **robotic mechanism**, equipped with a **biomimetic claw-type grabber**, ensures accurate positioning and secure handling of mixed and irregular debris.
- It enables precise detection, assessment, and removal of accumulated waste.
- By using advanced machine vision, the system autonomously identifies and **adapts to different waste types, flow conditions**, and structural challenges in real time.
- The extracted waste is directly transferred into designated collection vehicles, enabling a **fully hands-free and end-to-end canal cleaning process**— from detection to safe disposal.
- **Uninterrupted Maintenance:** It ensures uninterrupted and consistent maintenance of urban waterways.
- **Safe Waste Extraction:** It is **capable of safely extracting mixed and hazardous waste**—including plastics, sharp debris, and other harmful materials.

Source: PIB

Source: <https://vajiramandravi.com/current-affairs/g-spider-robot/>

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