Develop, Test and Deploy Intelligent Robotics Applications with AWS RoboMaker

Full Text:
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AWS RoboMaker extends ROS with connectivity to AWS services including machine learning, monitoring, and analytics services to enable a robot to stream data, navigate, communicate, comprehend, and learn.

Amazon Web Services, Inc. (AWS), an Amazon.com company, has announced the availability of AWS RoboMaker, a new service that makes it easy for developers to develop, test, and deploy robotics applications scale.

AWS RoboMaker provides four core capabilities: cloud extensions for Robot Operating System, development environment, simulation and fleet management.

RoboMaker provides extensions for cloud services like Amazon Kinesis (video stream), Amazon Rekognition (image and video analysis), Amazon Lex (speech recognition), Amazon Polly (speech generation), and Amazon CloudWatch (logging and monitoring) to developers who are using ROS. ROS is the most widely used open source robotics software framework.

These services are exposed as ROS packages making it easier to use them to build intelligent functions into robotics applications without having to learn a new framework or programming language.

AWS RoboMaker provides an AWS Cloud9-based robotics integrated development environment for building and editing robotics applications. RoboMaker's development environment includes the operating system, development software, and ROS automatically downloaded, compiled, and configured. Plus, RoboMaker cloud extensions and sample robotics applications are pre-integrated in the environment, so developers can get started in minutes.

AWS RoboMaker provides a fully managed robotics simulation service that supports large scale and parallel simulations, and automatically scales the underlying infrastructure based on the complexity of the simulation. RoboMaker also provides pre-built virtual 3D worlds such as indoor rooms, retail stores, and race tracks.

AWS RoboMaker provides a fleet management service that has robot registry, security, and fault-tolerance built-in so that developers can deploy, perform over-the-air (OTA) updates, and manage robotics applications throughout the lifecycle of the robots.

Sample applications

AWS RoboMaker includes sample robotics applications to help developers get started quickly. These provide the starting point for the voice command, recognition, monitoring, and fleet management capabilities that are typically required for intelligent robotics applications.

Because AWS RoboMaker is pre-integrated with popular AWS analytics, machine learning, and monitoring services, it's easy to add functions

like video streaming, face and object recognition, voice command and response, or metrics and logs collection to robotics application.

As part of AWS's ongoing support for robotics and open source communities, AWS has made both source code and documentation of the AWS RoboMaker cloud extensions for ROS publicly available under the terms of the Apache Software License 2.0.

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