AWS re:Invent

ALX306-R

Building robots that respond to voice

Jeff Nunn
Sr. Alexa AI and Robotics Solutions Architect
Amazon Alexa
Amazon.com

AWS re:Invent

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

aws

Today’s challenge

How do we control a robot with voice?

This is what we’ll solve together today. We want you to walk away from this workshop knowing how to tackle the idea you have.

Agenda

- Boring stuff: Intro and overview (10 mins)
- Requirements break: (5-10 mins)
- Fun stuff: We have a virtual robot, we have a virtual world; how do we use voice to make the robot do things? (60-90 mins)

Communicating with robots

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Three main ways to communicate

	Directly on Robot	Via Bluetooth	Over Network
Reach	1:?	1:1	1:Many
Updates	Made directly to the bot	OTA	OTA
Communication	Direct w/ onboard processing	Bluetooth	MQTT, TCP/IP

Three main ways to communicate

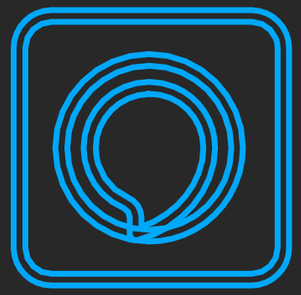
	Directly on Robot	Via Bluetooth	Over Network
Reach	1:?	1:1	1:Many
Updates	Made directly to the bot	OTA	OTA
Communication	Direct w/ onboard processing	Bluetooth	MQTT, TCP/IP

Communicating through MQTT



IoT Certificate

An IoT certificate is created with a private key, which secures communication to/from the robot



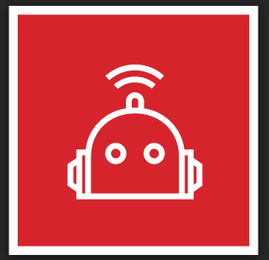
Alexa Skill

An Alexa skill receives directives from an Echo device and sends a directive containing the intent and slot value(s) to an IoT topic



IoT Topic

A robot subscribes to a topic, like “/voice/command”, listening for messages that are pushed via MQTT protocol



Robot

Upon receiving a message to a subscribed topic, the robot takes action

Workshop: Let’s get started!

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

What you'll need

- An Amazon Developer account
  - https://developer.amazon.com/
- An AWS account
  - https://signin.aws.amazon.com/
- Optional (but useful!): the Amazon Alexa mobile app

https://alexa.design/voice-robotics-workshop

Lab Assistants



Todd Reagan

Sr. Solutions Architect
AWS



Robert Love

Sr. AI/ML BDM
AWS



Carlos Ordoñez

Sr. Technical Evangelist
ASK Developer Marketing



Juan Sanchez

Sr. UX Designer
Alexa Gadgets



Josey Sandoval

Sr. PM Tech
ASK Developer Tech

AWS re:Invent

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

aws

Learn Alexa skills with AWS Training and Certification

Build and validate skills to help you build solutions for 100+ million Alexa-enabled devices



Free digital courses cover topics related to Alexa skill-building, including Alexa for Developers and Designing for Conversation



Validate expertise with the
AWS Certified Alexa Skill Builder - Specialty exam

Visit aws.amazon.com/certification/certified-alexa-skill-builder-specialty

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

aws training and certification

Thank you!

Jeff Nunn

@jbnunn

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.



Please complete the session survey in the mobile app.

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.