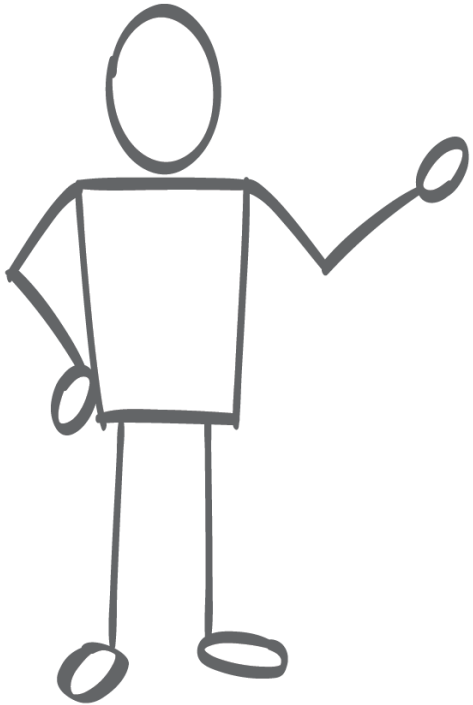
amazon alexa



Why Voice?

1. Evolution of technology over the last decade has mostly been about **speed**
2. Easiest, **fastest** way to get things done

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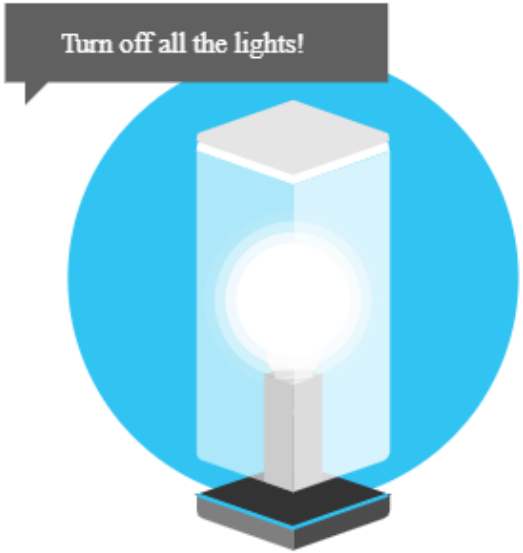
The **frictionless** way of doing **habitual tasks** will lead to huge momentum in Alexa skills, possibly leading to companies the size of Facebook, Instagram, etc.

Use Case: Switching off Lights

Basic



Alexa Skill

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What is Alexa?

https://www.youtube.com/watch?v=XWBNQEgLNhE

That talks to…

Smart-home Devices

What can we do with Alexa?

“Alexa, play the trailer for Avengers: Endgame.”

“Alexa, turn on the microwave for popcorn.”

“Alexa, play chill music.”

“Alexa, what’s the weather like in Singapore this weekend?”

“Alexa, when’s my dad’s birthday?”

“Alexa, how far is Mars from Earth?”

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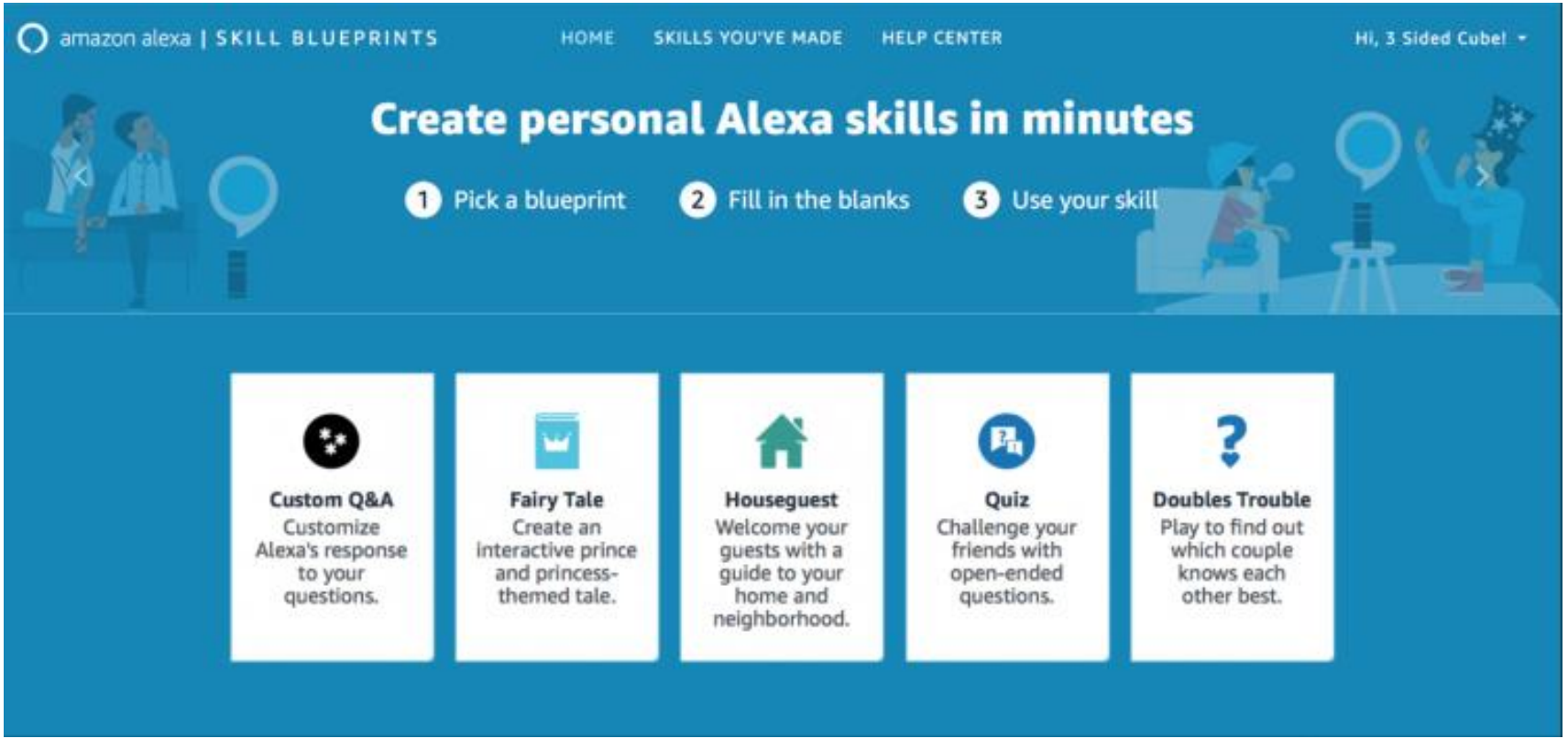
50,000+ SKILLS

Building Alexa Skills with Blueprint



https://www.youtube.com/watch?v=ZH5A_aycZ-o

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How Alexa works

The Alexa Service

Alexa
Skills
Kit

amazon alexa

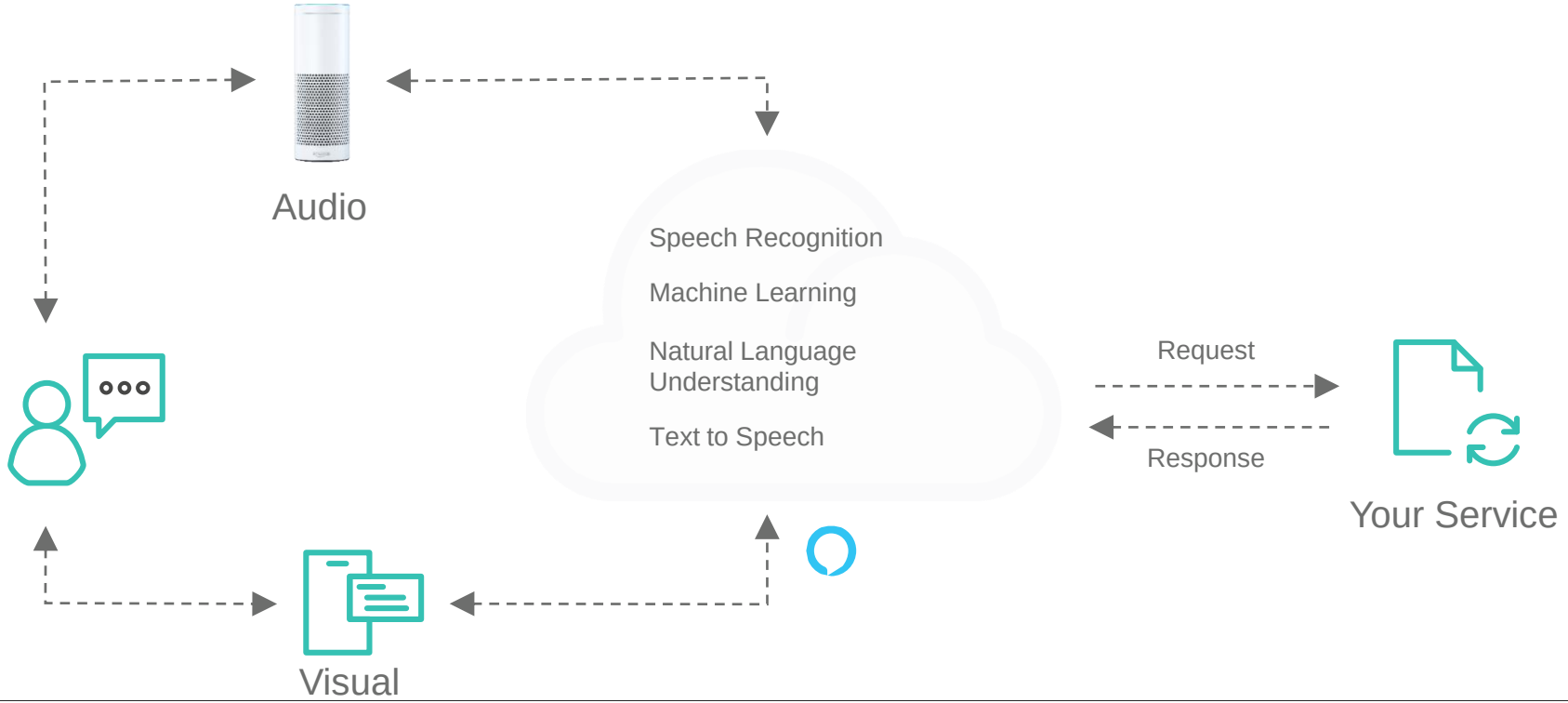
Lives in the Cloud
Automated Speech Recognition (ASR)
Natural Language Understanding (NLU)

Alexa
Voice
Services

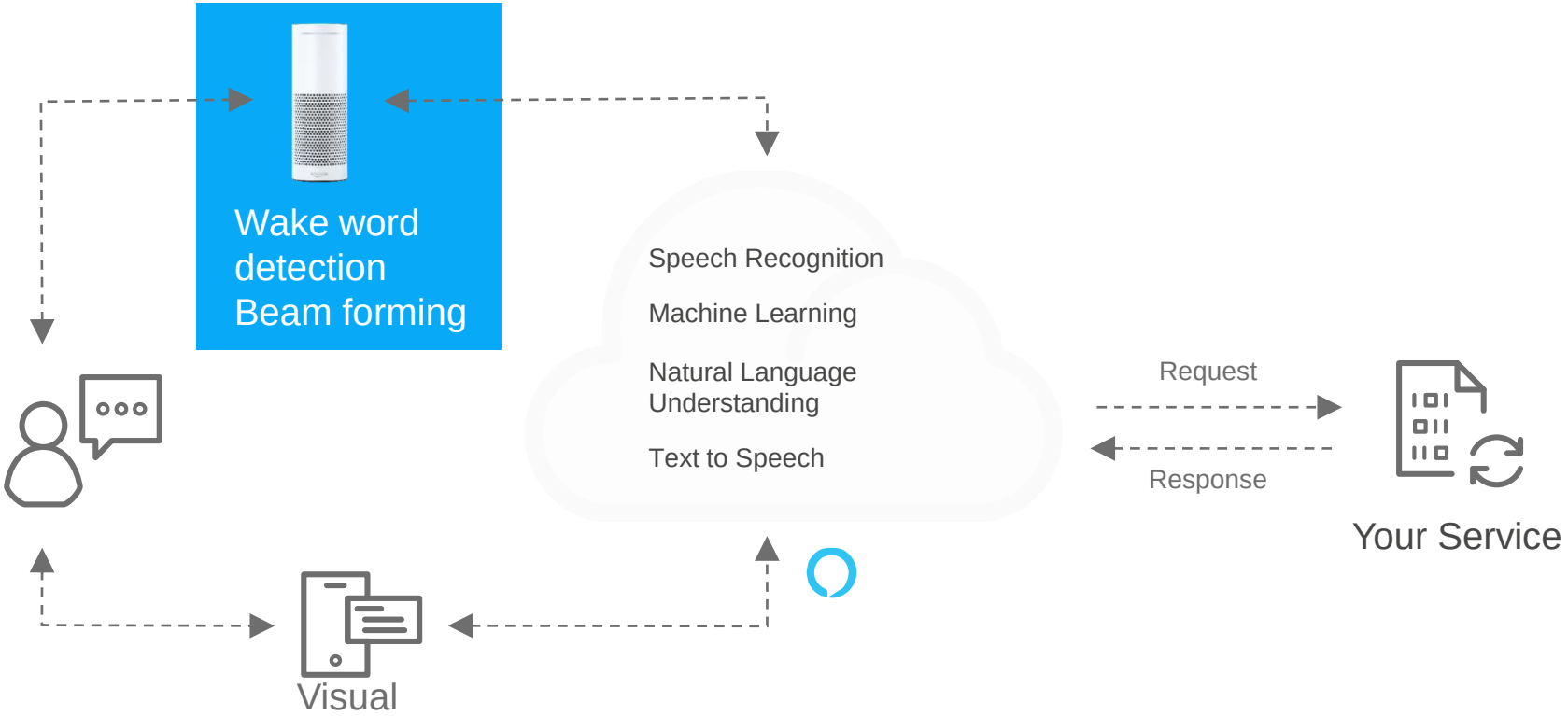
amazon echo

amazon fireTV

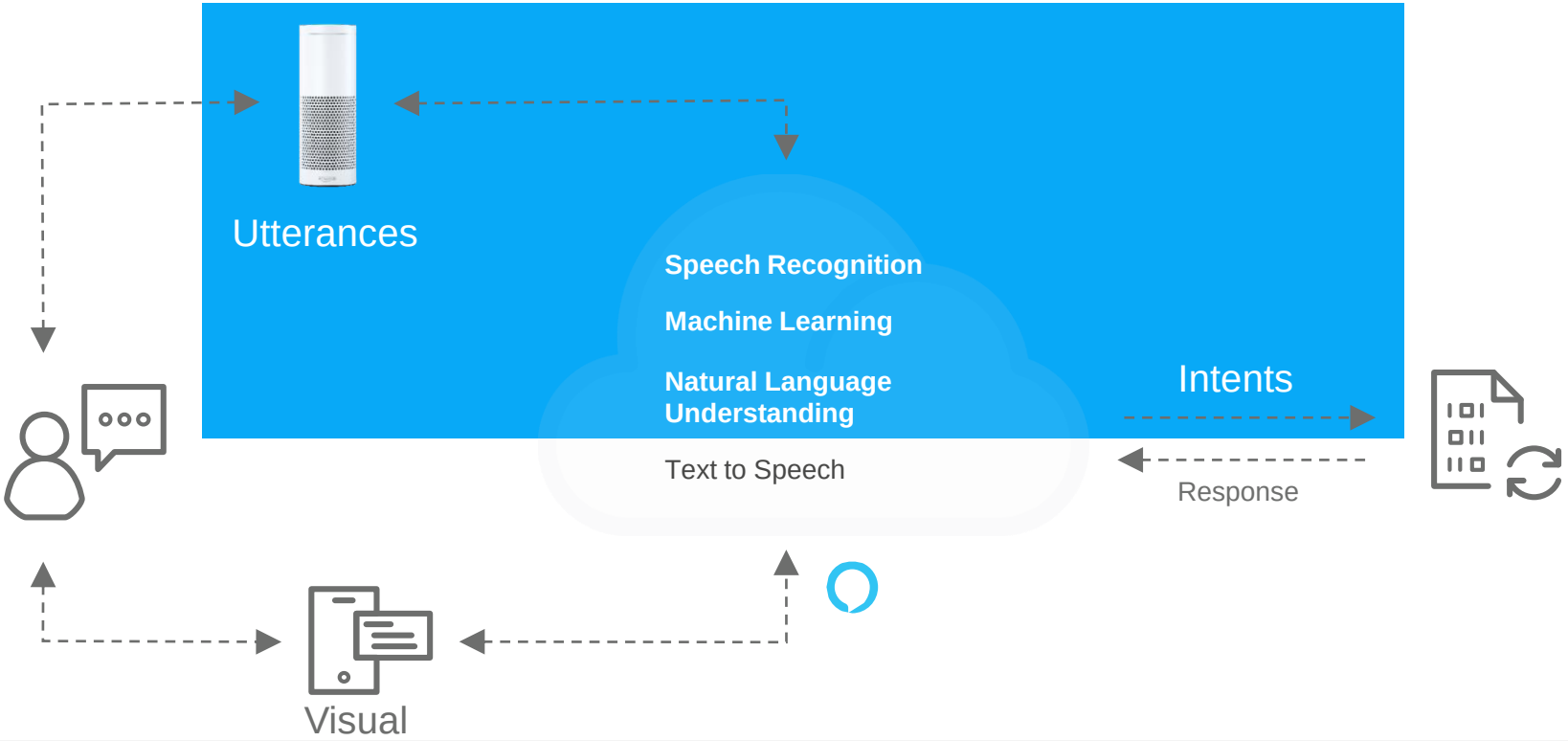
Alexa Skills Kit



Alexa Skills Kit: Signal Processing



Alexa Skills Kit: Utterances Into Intents



Utterances and Intents

Utterances and Intents

Alexa, ask restaurant finder for brunch

wake word | launch | invocation name | utterance

for some brunch

for a brunch place

for a spot for brunch

Slots in the utterances

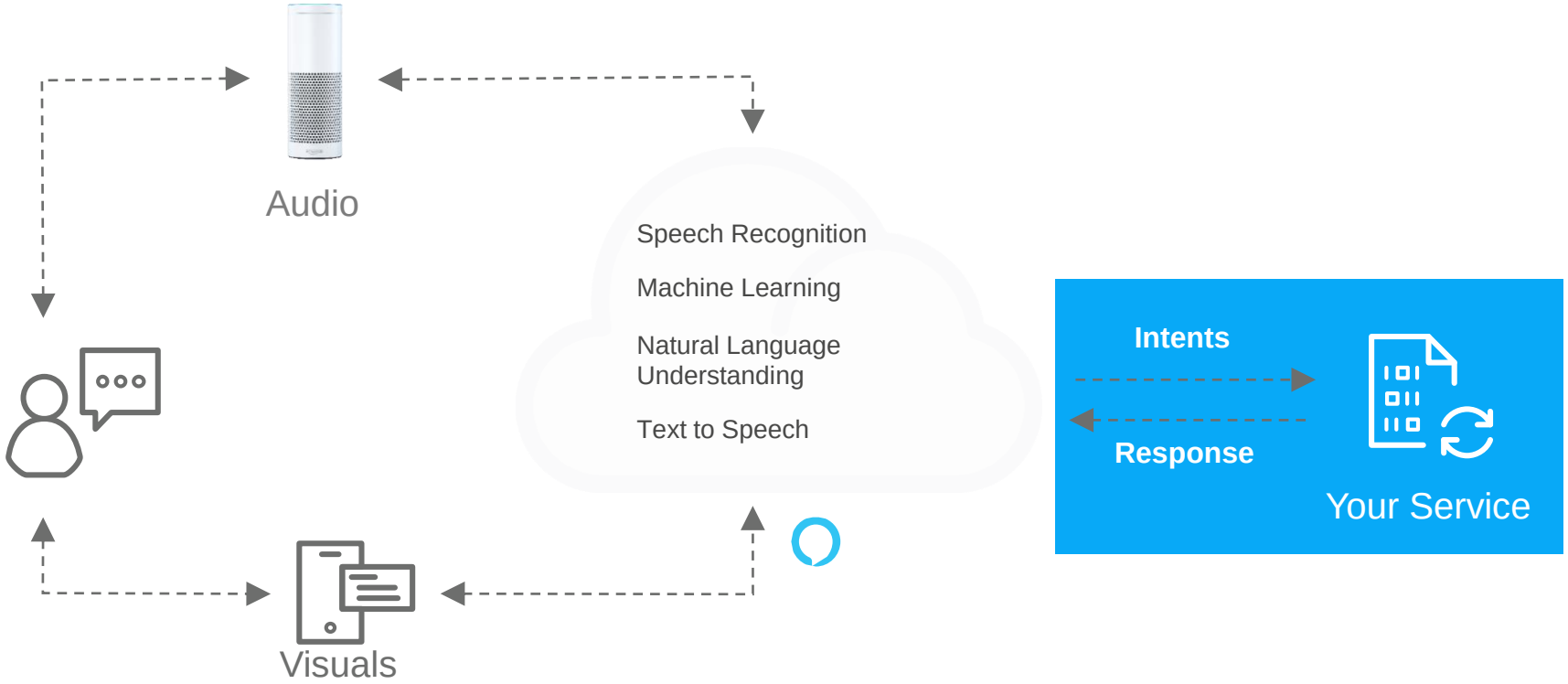
Alexa, open restaurant finder

wake word — launch — invocation name

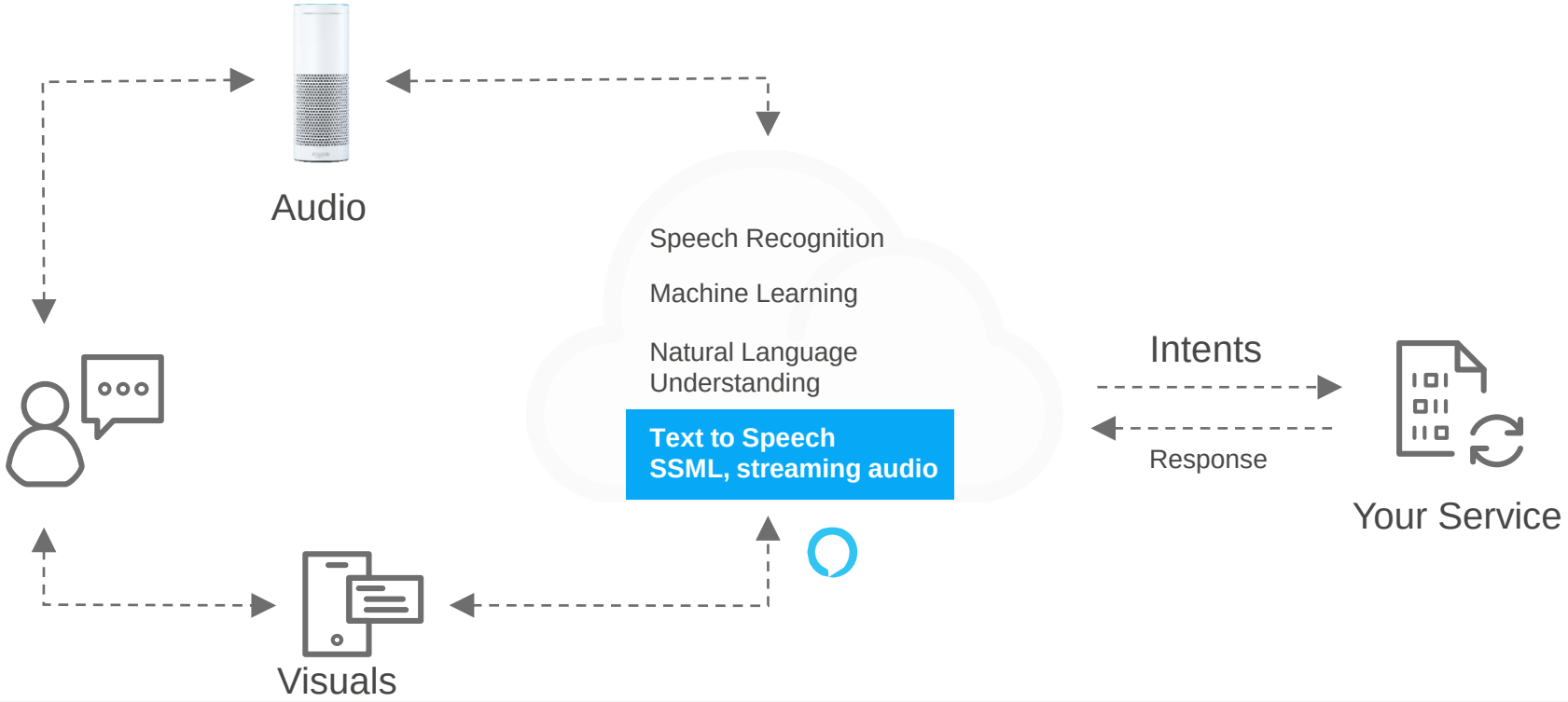
Recommend a restaurant within two kilometers

utterance — slot value

Alexa Skills Kit: Requests and Responses



Alexa Skills Kit: Output



Alexa Design Guide

- URL: alexa.design/guide

3. Develop the flow

- A basic script doesn’t fully represent how people will interact with your skill in real life. Users may say too little, too much, or say things that you weren’t expecting.

  - Outline the shortest route to completion
  - Outline alternate paths and decision trees
  - Outline behind-the-scenes decisions the system logic will have to make
  - Outline how the skill will help the user

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4. Get ready to build

- Create the structure for what your skill does and what users will say to engage with it
  - **Identify Intents:** Intents represent the unique things that your skill is able to do. A skill for planning a trip might have five intents, for example PlanATrip, BookTheTrip, Stop, Cancel, and Help
  - **Identify Utterances:** Utterances include the robust list of words, phrases, and sentences users will say to engage and fulfill the intent.
    For example, to use the PlanATrip intent, the user might say “Plan a trip,” “Plan a trip for next Friday,” or “Plan a hiking trip to Portland.”

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Additional Resources

- Artificial Intelligence > https://www.slideshare.net/hornsby/artificial-intelligence-on-the-aws-platform-77151494?qid=20da10cc-5717-4219-8927-ac45fa533e02&v=&b=&from_search=33
- Alexa Skills
  - https://developer.amazon.com/alexa-skills-kit
  - https://developer.amazon.com/alexa-skills-kit/design
  - https://developer.amazon.com/designing-for-voice/design-checklist/
  - https://developer.amazon.com/alexa-skills-kit/tutorials
  - https://developer.amazon.com/docs/custom-skills/request-and-response-json-reference.html
  - https://developer.amazon.com/alexa-skills-kit/alexa-skills-developer-training
  - https://www.codecademy.com/learn/alexa-conversational-design
  - https://www.slideshare.net/AmazonWebServices/amazon-alexa-workshop
  - https://www.slideshare.net/BoazZiniman/aws-tools-for-alexa-skills?qid=bbdc7e63-964c-45b6-9945-fdaa39eb422f&v=&b=&from_search=1
- Github
  - https://github.com/alexa/
  - https://github.com/alexa/alexa-cookbook/tree/master/labs/Recipe
- Alexa with S3, Lambda and DynamoDB > https://www.slideshare.net/AmazonWebServices/wks403-build-an-alexa-skill-using-aws-lambda-78928075?qid=e115e282-3fb7-4e4b-8bc4-dfe04e604835&v=&b=&from_search=15

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Additional Projects…

- Tutorials

https://developer.amazon.com/alexa-skills-kit/tutorials

- Exporting LEX schema to ASK

https://aws.amazon.com/blogs/machine-learning/export-your-amazon-lex-bot-schema-to-the-alexa-skills-kit/

- Alexa Echo Show development

https://medium.freecodecamp.org/how-to-design-and-code-alexa-skills-for-amazons-echo-show-c5716da8fee5

- Create a skill with short term memory with DynamoDB

https://codeburst.io/how-to-create-an-alexa-skill-with-node-js-and-dynamodb-3c9d5e9661

Additional Projects…

- Alexa Projects on huckster.io

https://www.hackster.io/search?i=projects&q=alexa

- Create a Q&A bot with Lex and Alexa

https://aws.amazon.com/blogs/machine-learning/creating-a-question-and-answer-bot-with-amazon-lex-and-amazon-alexa/

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Alexa and Privacy

- Until the device hears the wake word “Alexa”, it is just a brick and nothing gets transmitted to the cloud or stored. When the word “Alexa” is heard, the device begins listening and sends the utterance to the Alexa cloud for analysis. The LED ring at the top of the product makes it clear to customers when Alexa is streaming what they are saying to the Alexa cloud.

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