

MICHIGAN STATE
UNIVERSITY

Beta Presentation

Self-Service Support Chatbot for Google Cloud

The Capstone Experience

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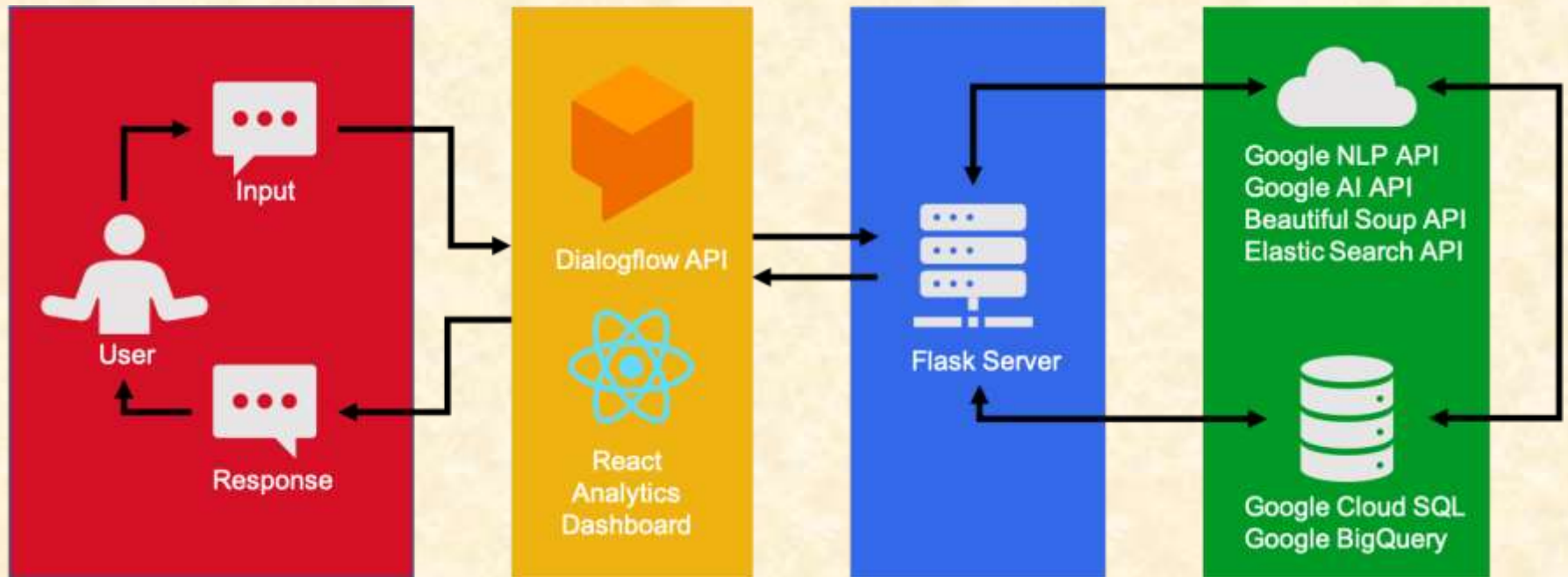
From Students...
...to Professionals

Department of Computer Science and Engineering
Michigan State University
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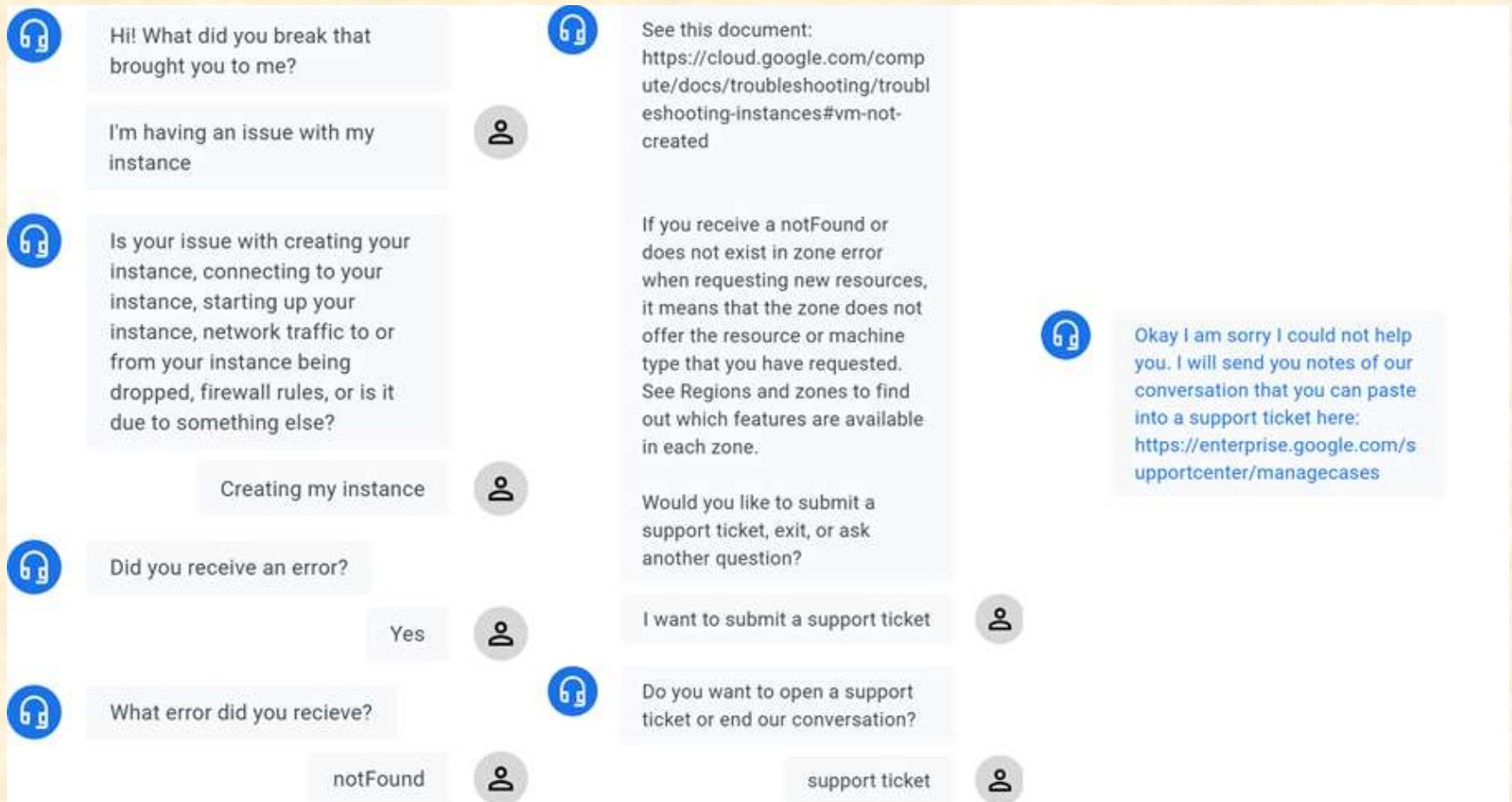
Project Overview

- 4 components:
 - Chatbot
 - Analytics Dashboard
 - Interrogator Script
 - AI Model
- Reduce time to issue resolution
- Provide insight on the usefulness of current documentation

System Architecture



Chatbot Conversation In DialogFlow



Interrogator Script Command and Results

```
hubbrando@cloudshell:~/goe-interrogator-script (asu-spartan-289723)$ sudo bash gee_local.sh
hubbrando@cloudshell:~/goe-interrogator-script (asu-spartan-289723)$ cat gee_output.txt
no traceroute in /usr/sbin or /bin relying on PATH
107 :echo '##### GEE #####'
##### GEE #####
108 :echo
108 :grep -qw network
109 : '[' 1 = 1 ']'
110 :echo '### Network'
### Network
114 :/sbin/ifconfig
docker0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
    inet 172.18.0.1 netmask 255.255.0.0 broadcast 172.18.255.255
    ether 02:42:c5:83:e9:1a txqueuelen 0 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

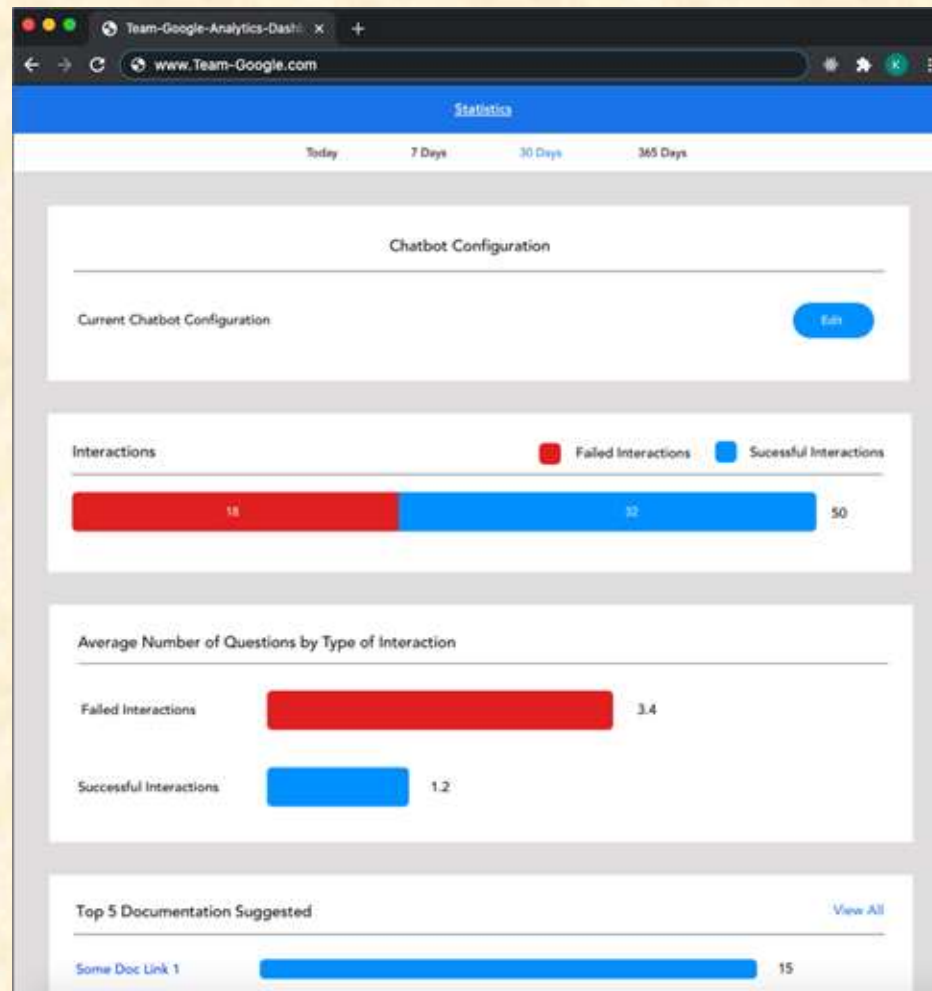
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 172.17.0.4 netmask 255.255.0.0 broadcast 172.17.255.255
    ether 02:42:ac:11:00:04 txqueuelen 0 (Ethernet)
    RX packets 479 bytes 61437 (59.9 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 384 bytes 64606 (63.0 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    loop txqueuelen 1000 (Local Loopback)
    RX packets 582 bytes 67058 (65.4 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 582 bytes 67058 (65.4 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

118 :cat /etc/resolv.conf
nameserver 169.254.169.254
search c.cloud-devshell-prod.internal google.internal
121 :/sbin/iptables-save
121 :egrep -v 'Generated|Completed'
*filter
:INPUT ACCEPT [943:111470]
:FORWARD ACCEPT [0:0]
:OUTPUT ACCEPT [854:115088]
:DOCKER - [0:0]
:DOCKER-ISOLATION-STAGE-1 - [0:0]
:DOCKER-ISOLATION-STAGE-2 - [0:0]
:DOCKER-USER - [0:0]
-A FORWARD -j DOCKER-USER
-A FORWARD -j DOCKER-ISOLATION-STAGE-1
-A FORWARD -o docker0 -m conntrack --ctstate RELATED,ESTABLISHED -j ACCEPT
-A FORWARD -o docker0 -j DOCKER
-A FORWARD -i docker0 ! -o docker0 -j ACCEPT
-A FORWARD -i docker0 -o docker0 -j ACCEPT
```



Chatbot Configuration Dashboard



Documents in Elasticsearch

The screenshot shows the Kibana interface for managing Elasticsearch documents. On the left is a dark blue sidebar with navigation links: Overview, Analytics, Query Tester, Reference UI, and a 'MANAGE' section containing Documents (highlighted), Schema, and API Logs. Below these are 'SEARCH SETTINGS' (Synonyms, Curations, Relevance Tuning, Result Settings) and 'ACCESS' (Credentials). The main content area is titled 'Documents' and features a search bar with the text 'connect to vm'. Below the search bar are sorting options ('Sort by: Recently Uploaded (desc)') and pagination controls (showing 1 to 34 items, with 'Show: 20' selected). A central information box asks if the user knows they can customize their document search experience, with a 'Customize' button. To the right, a list of document snippets is displayed, each with an ID, raw_text, keywords, url, and section. The snippets describe tasks like 'Creating an image from an ISO file' and 'Exporting an image with a single ...'.

google-chatbot

Query Tester

Documents

Index Documents

connect to vm

Sort by: Recently Uploaded (desc) 1 2 3 4 5 ... 34 Show: 20

Did you know that you can customize your document search experience? Click "Customize" below to get started.

Customize

ID doc-5f1ad1c2be5b6edd0adcf9

raw_text Creating an image from an ISO fil...

keywords ISO_URL

url https://cloud.google.com/comput...

section Creating an image from an ISO file

ID abc-5f1ad1c2be5b6edd0adcf9

raw_text ,device-name=temporary-disk N...

keywords Creating and exporting an image ...

url https://cloud.google.com/comput...

section Creating and exporting an image ...

ID doc-5f1ad1d2be5b633c70dcf9f

raw_text for most scenarios, source-image...

keywords Exporting an image with a single ...

url https://cloud.google.com/comput...

section Exporting an image with a single ...

ID doc-5f1ad1c2be5b6edd0adcf9

raw_text Exporting an image with a single ...

keywords Exporting an image with a single ...

url https://cloud.google.com/comput...

section Exporting an image with a single ...



What's left to do?

- Run more simulations to improve AI
- If time allows, use Kibana to expand analytics dashboard
- Remove meaningless paragraphs by title



Questions?

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