

O Guia do Mochileiro dos ChatBots

MAGRATHEA LABS

www.magrathealabs.com

MLABS

- Laboratório de Engenharia de Software
- ~ 9 meses: 12 engenheiros, designers e cara do negócio
- Braço de inovação
- Identificar dores no mercado

Palavras-chave:

Design de Produtos de Software, Engenharia de Software, Sistemas Distribuídos, Inteligência Artificial, Ciência de Dados.

/purpose

"[...] the future is already here, it's just not very evenly distributed"
— William Gibson

Transformar o futuro em presente

playbook.magrathealabs.com

O QUE É UM ChatBot?

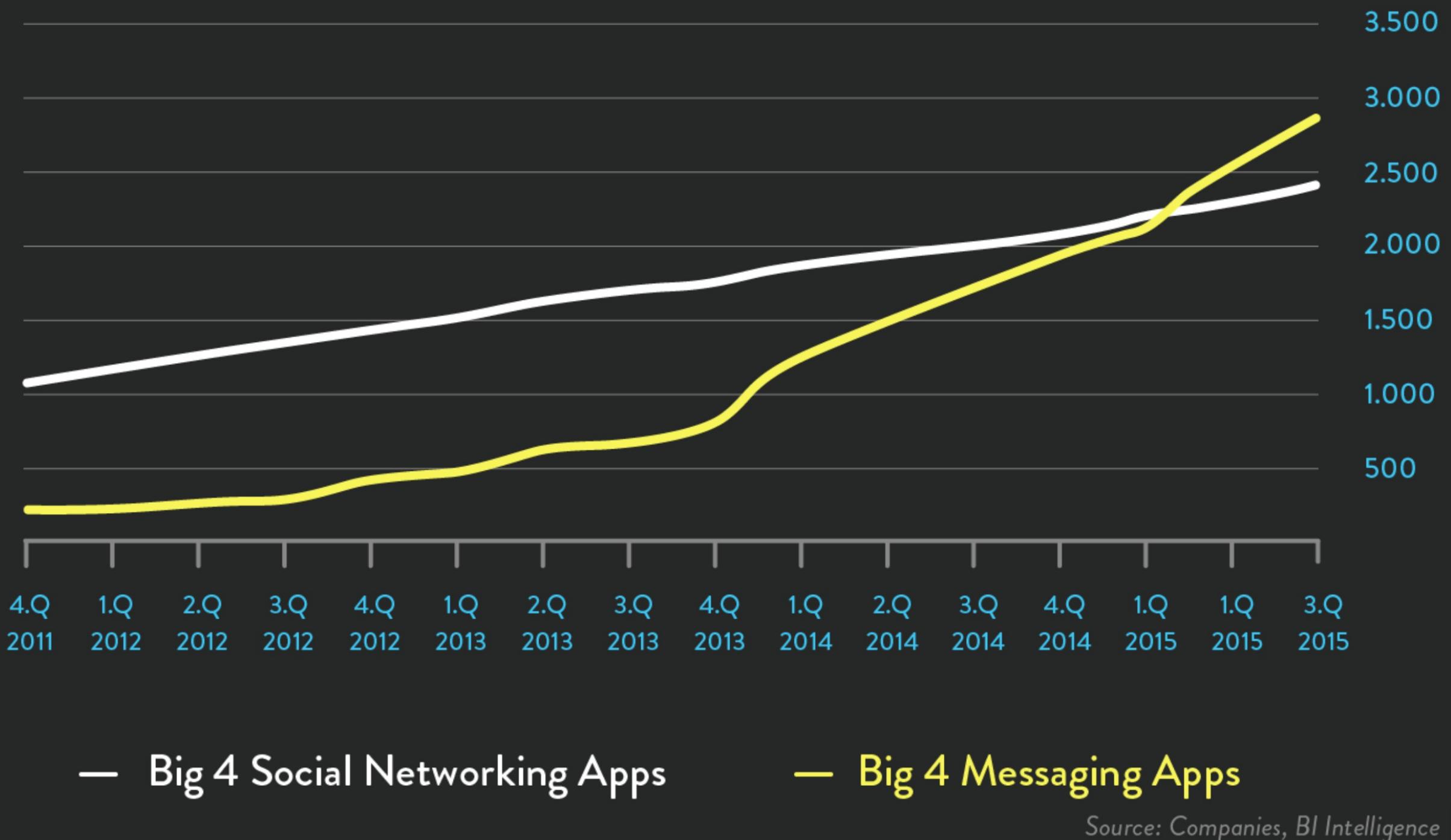
Uma interface de conversação baseada em instruções pré-definidas ou IA para acessar dados ou serviços.

hype



trending

Monthly active users for top 4 social networks and messaging apps



Source: Companies, BI Intelligence

trending

“Facebook will now allow businesses to deliver automated customer support, e-commerce guidance, content and interactive experiences through chatbots” — TechCrunch

- App fatigue
- Plataformas de mensageria abriram suas APIs
- Redução no custo de desenvolvimento



HISTÓRIA

```
Welcome to
      EEEEEE  LL      IIII  ZZZZZZZZ  AAAAAA
      EE      LL      II      ZZ  AA  AA
      EEEEEE  LL      II      ZZZ  AAAAAAAA
      EE      LL      II      ZZ  AA  AA
      EEEEEE  LLLLLL  IIII  ZZZZZZZZ  AA  AA

Eliza is a mock Rogerian psychotherapist.
The original program was described by Joseph Weizenbaum in 1966.
This implementation by Norbert Landsteiner 2005.

ELIZA: Is something troubling you ?
YOU: Men are all alike.
ELIZA: What is the connection, do you suppose ?
YOU: They're always bugging us about something or other.
ELIZA: Can you think of a specific example ?
YOU: Well, my boyfriend made me come here.
ELIZA: Is it important to you that your boyfriend made you come here ?
YOU: He says I'm depressed much of the time.
ELIZA: I am sorry to hear that you are depressed.
YOU: It's true. I am unhappy.
ELIZA: Can you explain what made you unhappy ?
YOU: ■
```

1966 - ELIZA (von Joseph Weizenbaum)

HISTÓRIA

- Turing Test (1950)
- Eliza (1966)
- Parry (1972)
- Jabberwacky (1988)
- A.L.I.C.E. (1995) (AIML)
- Slack Bots (2014)
- Telegram e FB Bots (2015)

AIML

```
<category>
  <pattern>WHAT ARE YOU</pattern>
  <template>
    <think><set name="topic">Me</set></think>
    I am the latest result in artificial intelligence,
    which can reproduce the capabilities of the human brain
    with greater speed and accuracy.
  </template>
</category>
```

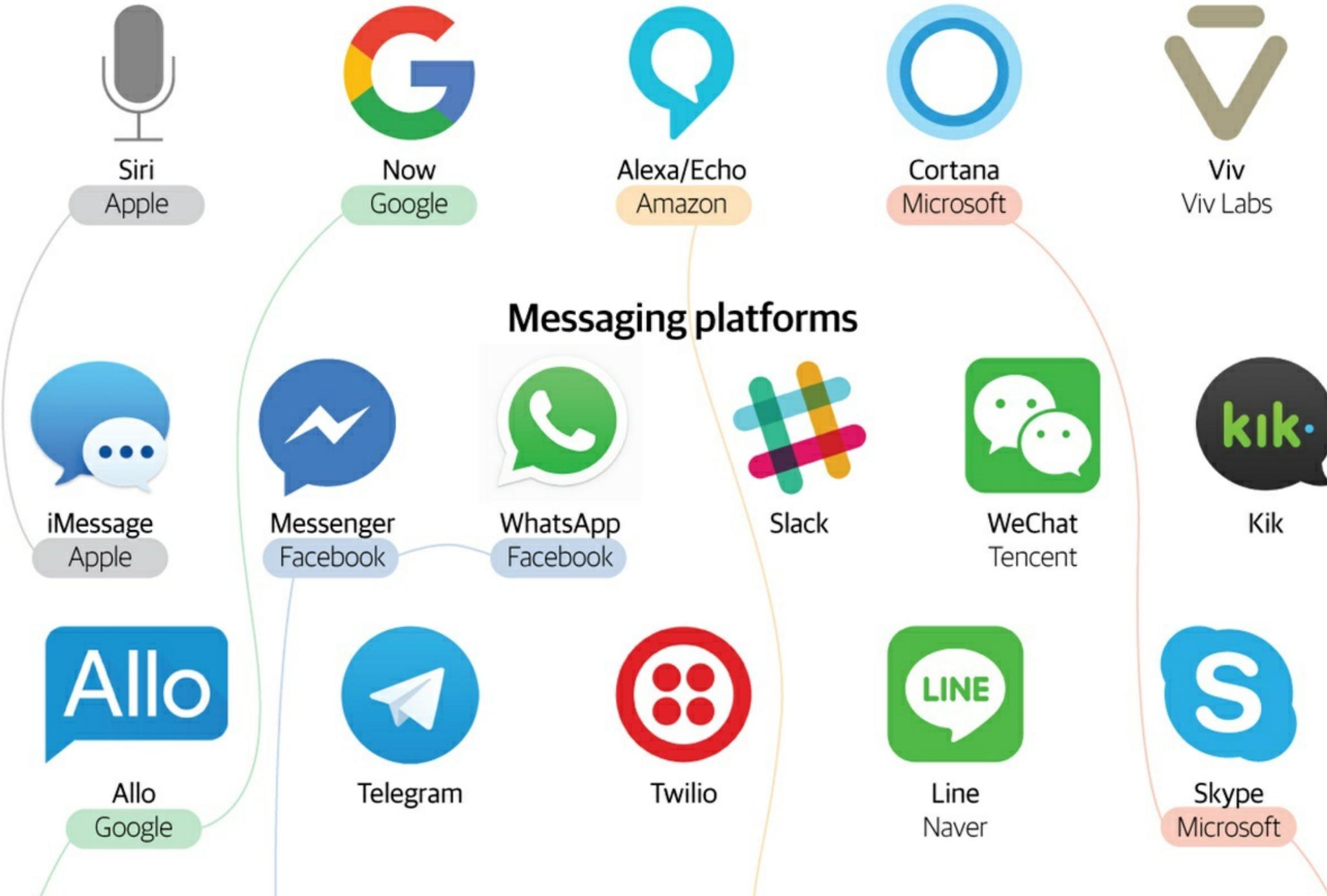
alicebot.org/aiml.html

PLATAFORMAS

- “Messaging Apps are the new Browsers”
- “Chatbots are the new Apps”

General AI agents with platforms

Developer access available now or announced



TIPOS DE BOTS

FLOW BASED

- Tarefas específicas
- Comunicação estruturada
- REGEX, sem IA

COMMAND BOT

- Comandos do Slack
- Simples e eficientes
- Necessidade de conhecer os comandos

AI BOT

- O componente principal é IA
- Treinamento automatizado
- Consegue lidar com comandos não estruturados

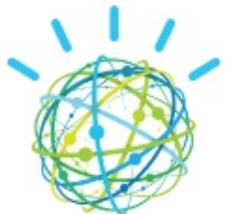
Trending por causa do Deep Learning. Difíceis de construir.

PLATAFORMAS DE BOTS

Generalized natural language and AI-as-a-service platforms



Cloud Platform
Speech & NL APIs
Google



Watson
Conversation
IBM



Alexa Voice
Service
Amazon

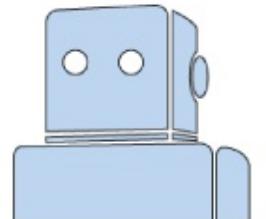


LUIS
Microsoft



Cognitive Services
Microsoft

Bot frameworks and deployment platforms



Wit.ai
Facebook



BotKit
Howdy



Chatfuel

AUTOMAT

Automat



Bot Framework
Microsoft



Api.ai
Google



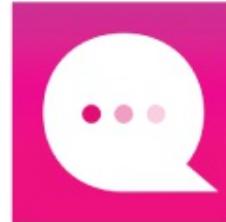
Pandorabots



MindMeld



Gupshup



Sequel

CASOS DE USO



There's A Bot For That...

CASOS DE USO

- Atendimento ao Cliente (SAC)
- Base de conhecimento de Perguntas e Respostas (FAQ)
- Assistentes Pessoais
- Alerta de mudança de status
- IoT

A photograph of a black cylindrical device, likely a 3D printer's hotend assembly, showing internal components like a heating element and wires. A white piece of paper is placed on top of it with the handwritten text "TÁ TUDO SOB CONTROLE!" followed by "(SÉRIO)" in parentheses.

••••• VIVO 19:31 16% 🔋

#general

Tá tudo sob controle! (SÉRIO)

Jarbas APP 7:29 PM
@here Café quentinho na cafeteira!

Message #general

@ / ⌂

Send

github.com/fablabjoinville/jarbas



Groselha APP 11:17 PM Only visible to you

Há 3 pessoa(s) no Fab Lab:

Daniel Bastos

Diogo Trentini

Thiago Strutz



alfakini 11:17 PM

[REDACTED]

[REDACTED]



dbastos 11:38 PM

[REDACTED]

[REDACTED]



alfakini 11:41 PM

[REDACTED]



Groselha APP 11:41 PM Only visible to you

Não há ninguém no laboratório :(

github.com/fablabjoinville/groselha

Assistentes Pessoais

- /uber uberonslack.com
- Hello @hipmunk hipmunk.com

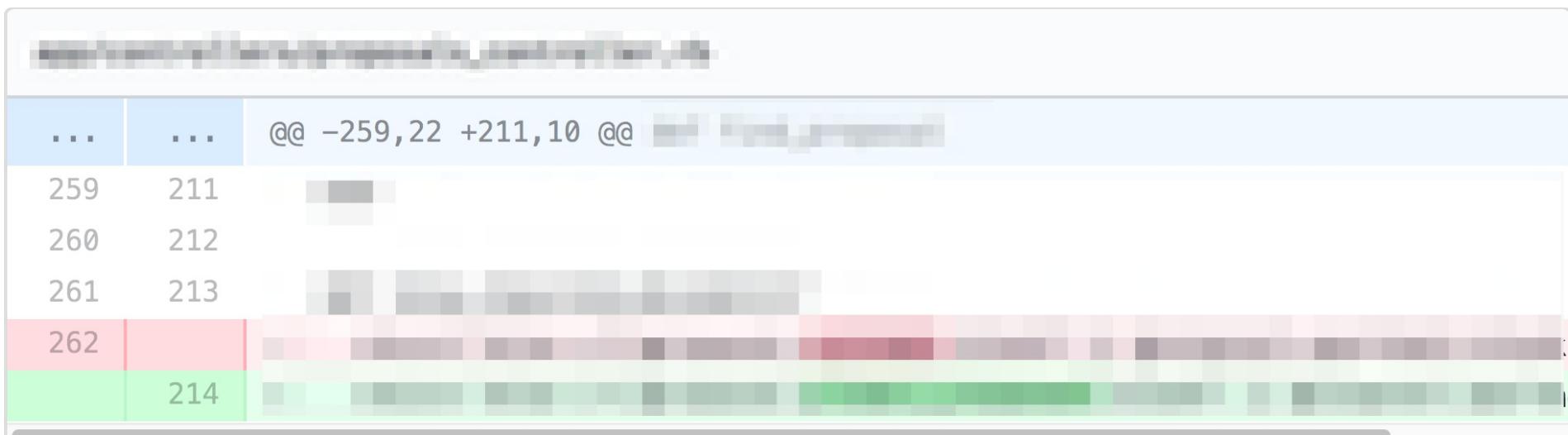
Automação

- Bots para o Slack
- Bots para o GitHub
- Substituto para notificações de e-mail



mlabs-marvin reviewed 12 days ago

[View changes](#)



mlabs-marvin 12 days ago

This change has no test coverage [runner:error]



laurogripa 12 days ago



pedroCervi 9 days ago

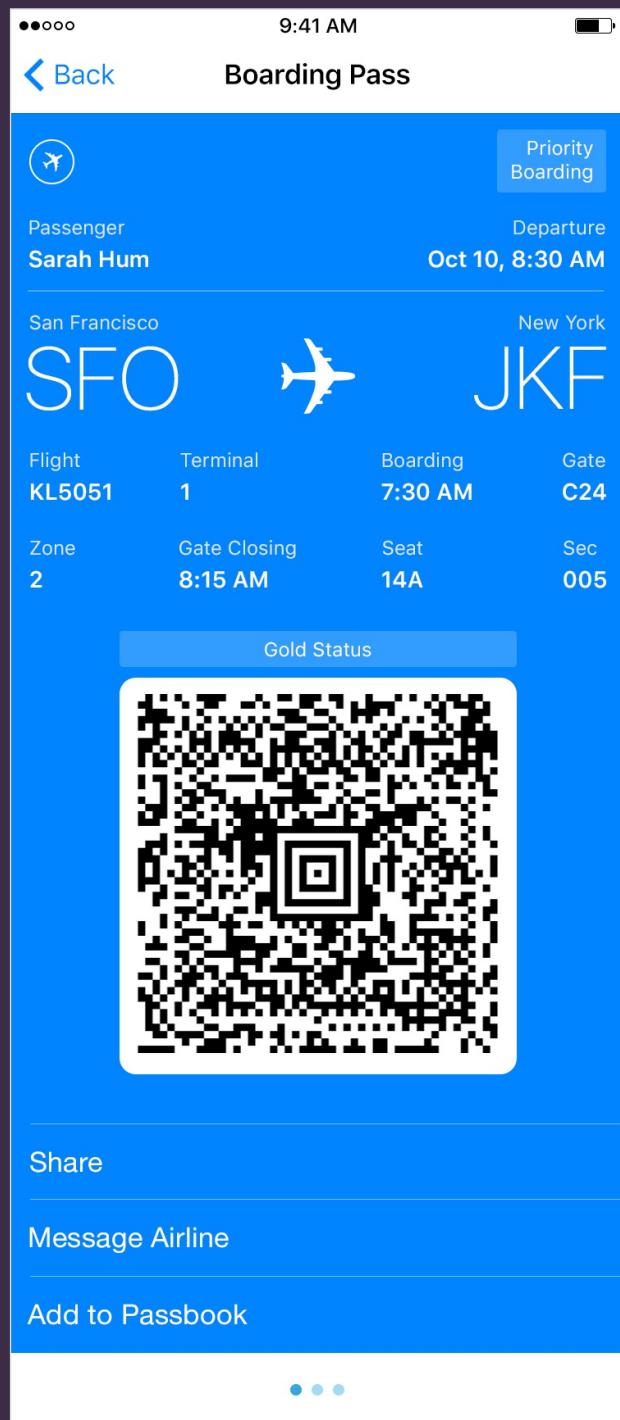
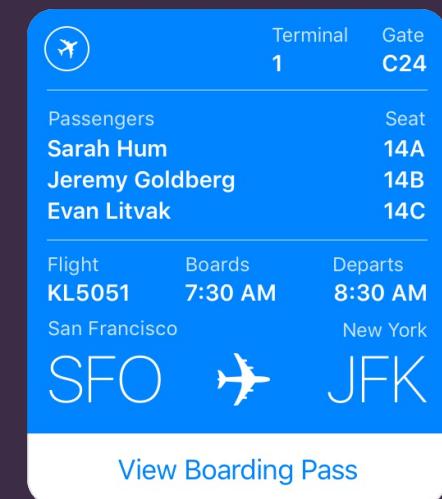


Reply...

github.com/mlabs-marvin

Comércio

"Alexa, adicione açúcar na minha lista de compras"



Classic T-Shirt Collection
See all our colors
peterssendreceiveapp.ngrok.io

[View](#)



Classic White T-Shirt

100% Cotton, 200% Comfortable
peterssendreceiveapp.ngrok.io



[Shop Now](#)

Classic Blue T-Shirt

100% Cotton, 200% Comfortable
peterssendreceiveapp.ngrok.io



[Shop Now](#)

Classic Black T-Shirt

100% Cotton, 200% Comfortable
peterssendreceiveapp.ngrok.io



[Shop Now](#)

[View More](#)

Today's Top News
President signs new bill
peterssendreceiveapp.ngrok.io

Bull Market Continues to Rally

The markets react positively to...
peterssendreceiveapp.ngrok.io



Traffic Expected for Upcoming Holiday

Record traffic is expected due...
peterssendreceiveapp.ngrok.io



Forest Fires Spread

The dry season has results in r...
peterssendreceiveapp.ngrok.io



[Read More](#)

●●○○○ AT&T 9:35 PM 48%

[Home](#) Peter's Hats >
Typically replies in a few hours [Manage](#)

 0 people like this
Local Business

9:35 PM

Order confirmation

 **Classic White T-Shirt**
100% Soft and Lu...
Qty. 2

 **Classic Gray T-Shirt**
100% Soft and Lu...

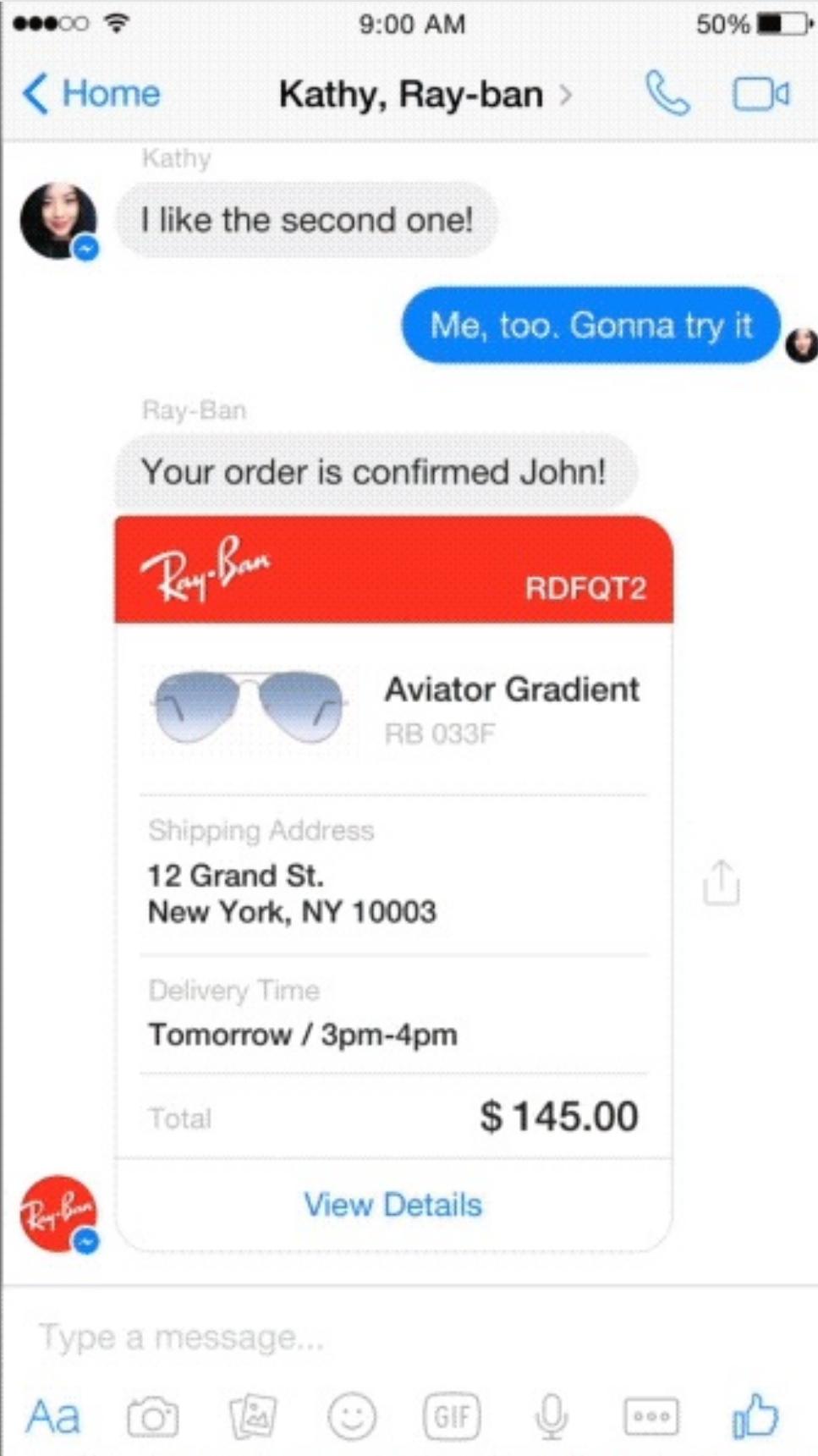
Paid with
Visa 2345

Ship to
1 Hacker Way
Menlo Park, CA 94025

Total **\$56.14**

[≡](#) Type a message...



VANTAGENS

- Não precisa fazer download de um aplicativo
- Consome o mínimo de banda de internet
- Respostas imediatas
- Suporte multi-canal
- 24/7
- Baixo custo

O QUE É DIFÍCIL?

ChatBots simples são fáceis de fazer, mas ...

- ChatBots inteligentes exigem conhecimento em ML
- UX para ChatBots é muito mais difícil que para GUIs

CONSTRUINDO UM CHATBOT

wit.ai

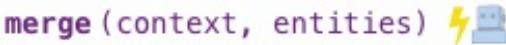
- Extração de Intenções e Entidades
- Entidades padrões: temperatura, números, URLs, emails, etc.
- Aprendizado de Máquina fácil
- Integra por padrão ao Messenger

All changes saved  

 My name is Bob

wit/contact Bob

+ Add a new entity

 merge (context, entities)  

Doesn't produce context

+ Add context field

 say (Hi {contact}) 

+ Add variable

User says... | Bot says... | Bot executes...

All changes saved  

 fly from SFO to NYC

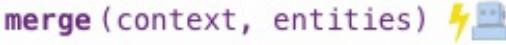
wit/location:from SFO

wit/location:dest NYC

+ Add a new entity

Type something to try out your bot

My name is

 merge (context, entities)  

Doesn't produce context

+ Add context field

 say (Ok, I booked your flight!) 

+ Add variable

User says... | Bot says... | Bot executes...



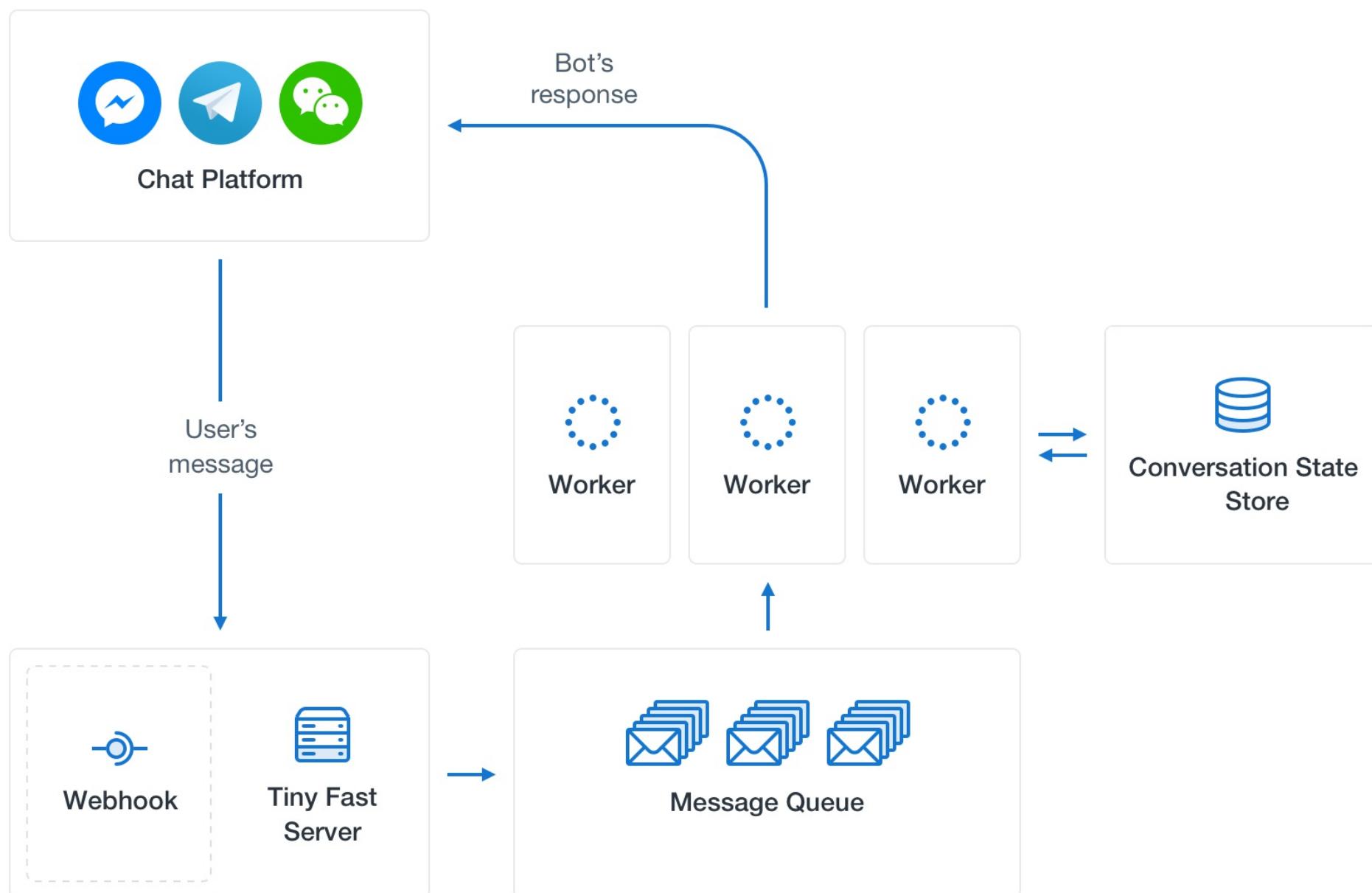
```
{  
  "outcomes": [ {  
    "_text": "how many people between Tuesday and Friday",  
    "intent": "query_metrics",  
    "entities": {  
      "datetime": [ {  
        "value": {  
          "from": "2014-07-01T00:00:00.000-07:00",  
          "to": "2014-07-02T00:00:00.000-07:00"  
        }  
      } ]  
    },  
    "confidence": 0.621  
  } ]  
}
```

THE HACKER WAY

- Flask (Python)
- RiveScript
- Redis
- Heroku

github.com/magrathealabs/marvin-bot

ARQUITETURA



Flask (Python)

```
@app.route('/', methods=[ 'POST' ])
def handle_messages():
    message_entries = json.loads(request.data)[ 'entry' ]

    for entry in message_entries:
        for message in entry[ 'messaging' ]:
            sender_id = message[ 'sender' ][ 'id' ]

            if message.get( 'message' ):
                text = message[ 'message' ][ 'text' ]
                reply = bot.reply(sender_id, text)
                client.send(sender_id, TextMessage(reply))
    return 'OK'
```

github.com/magrathealabs/marvin-bot/blob/master/app.py

RiveScript

Linguagem de script para chatbots com libs para Python,
Java, Go, JavaScript ...

Try it: rivescript.com/try

Tutorial: rivescript.com/docs/tutorial

RiveScript

```
self.bot = RiveScript(  
    utf8=True,  
    session_manager=RedisSessionStorage()  
)  
self.bot.load_directory(directory)  
self.bot.sort_replies()
```

github.com/magrathealabs/marvin-bot/tree/master/bot

RiveScript

```
+ (qual o seu nome|qual é o seu nome|quem é você|quem é)
- Eu sou <bot name>.
- Você pode me chamar de <bot name>.

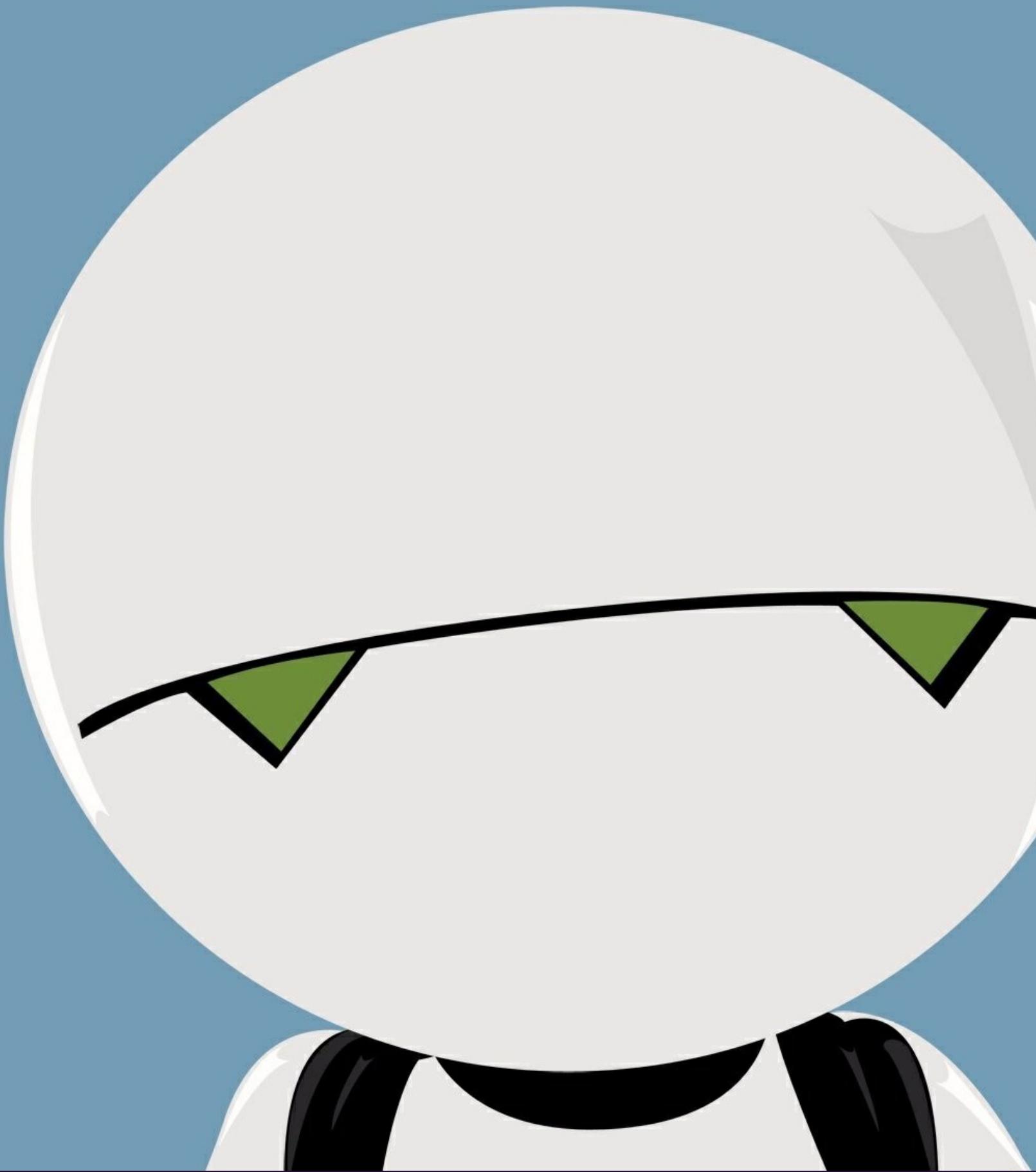
+ (meu|o meu) nome é *
- <set name={formal}><star2>{/formal}>Olá, <get name>.
- <set name={formal}><star2>{/formal}><get name>, olá!

> object add python
    a, b = args
    return int(a) + int(b)
< object

+ quanto é # mais #
- <star1> + <star2> = <call>add <star1> <star2></call>
```

github.com/magrathealabs/marvin-bot/tree/master/conversations/marvin

DEMO





m.me/magrathealabs

RESUMINDO

- Chatbots estão passando pela curva do hype
- São uma realidade e a inovação está acontecendo agora
- Vão mudar a forma como interagimos com serviços
- A engenharia é fácil
- Bots mais avançados são difíceis (NLU, AI)
- UX é a parte mais difícil

EXPERIMENTE !



www.magrathealabs.com
contact@magrathealabs.com
+55 47 99155-2269

REFERÊNCIAS

- País da IA: <https://www.dunebook.com/will-artificial-intelligence-ai-ever-rule-world/>
- Imagem Usuários de Plataformas:
<https://speakerdeck.com/christophrumpel/nela-and-the-chatbots>
- AIML: <http://www.alicebot.org/aiml.html>
- Imagem Plataforma: O'Reilly
- Exemplos Rayban e Flight:
<https://dribbble.com/users/347241/>