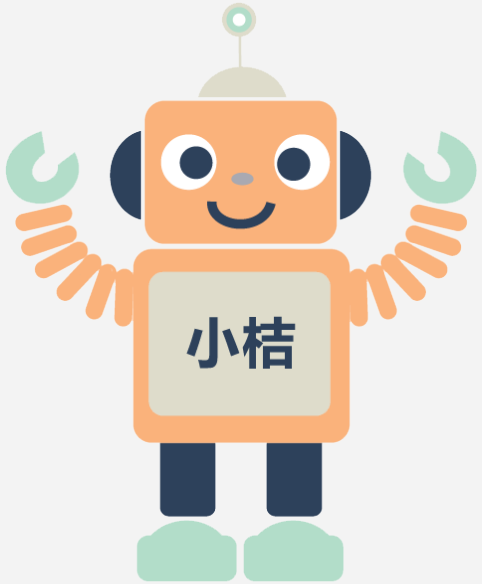
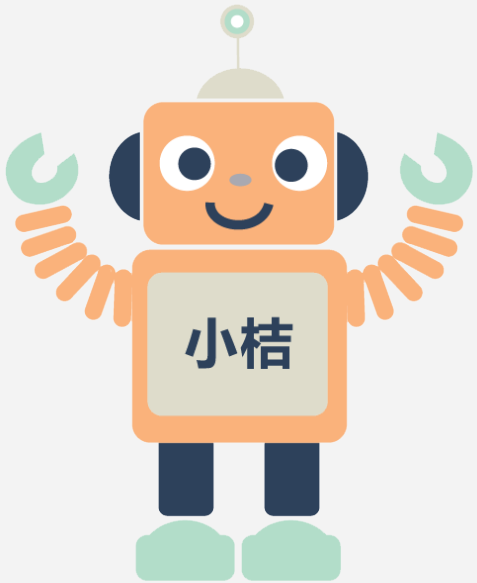
桔子互动



快速搭建聊天机器人
How to build a chatbot

李佳芮

Content



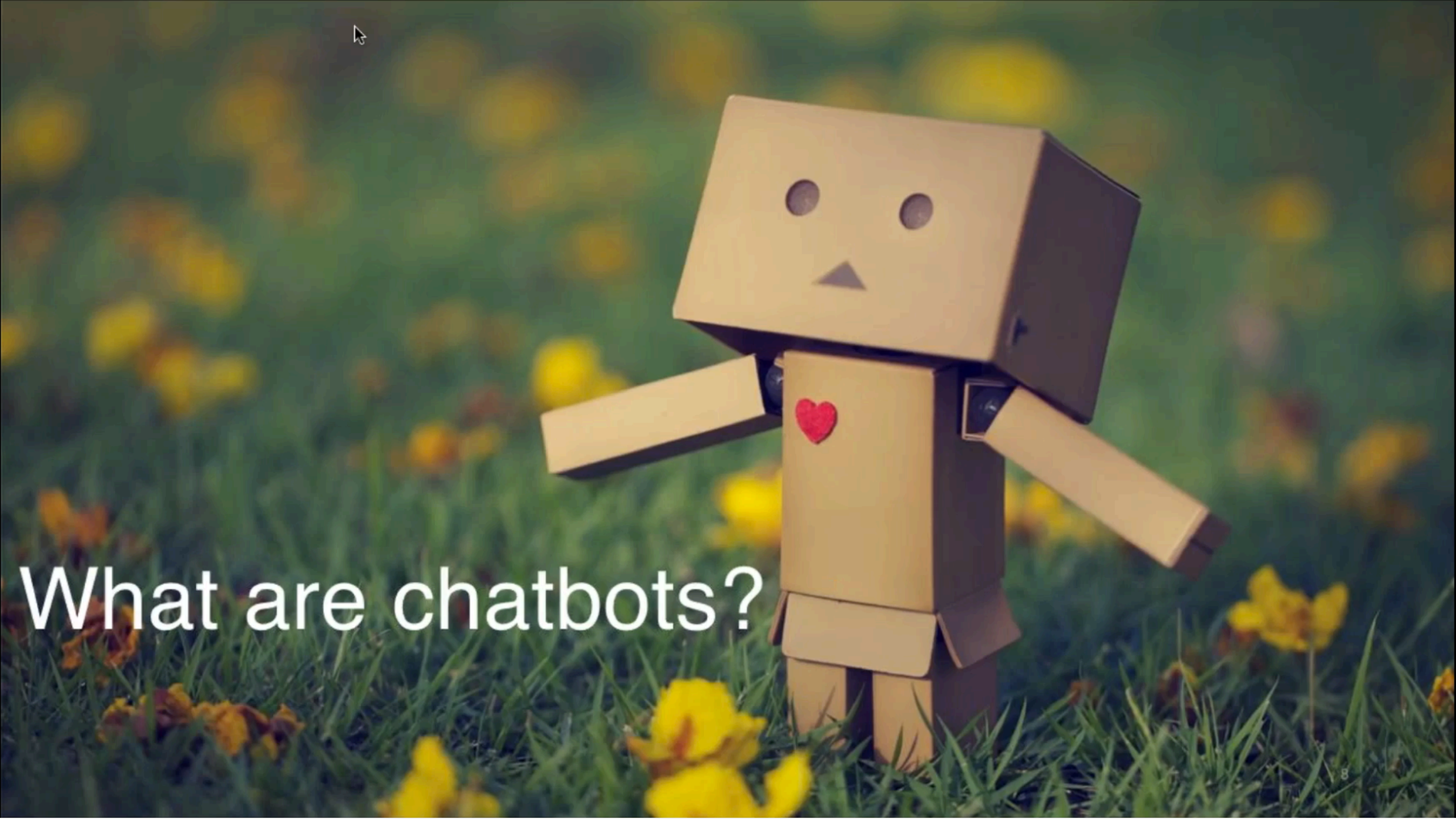
1. What are chatbots and why the hype

2. Overview of the bot ecosystem

3. How to build a chatbot

4. Related Scene

桔子互动

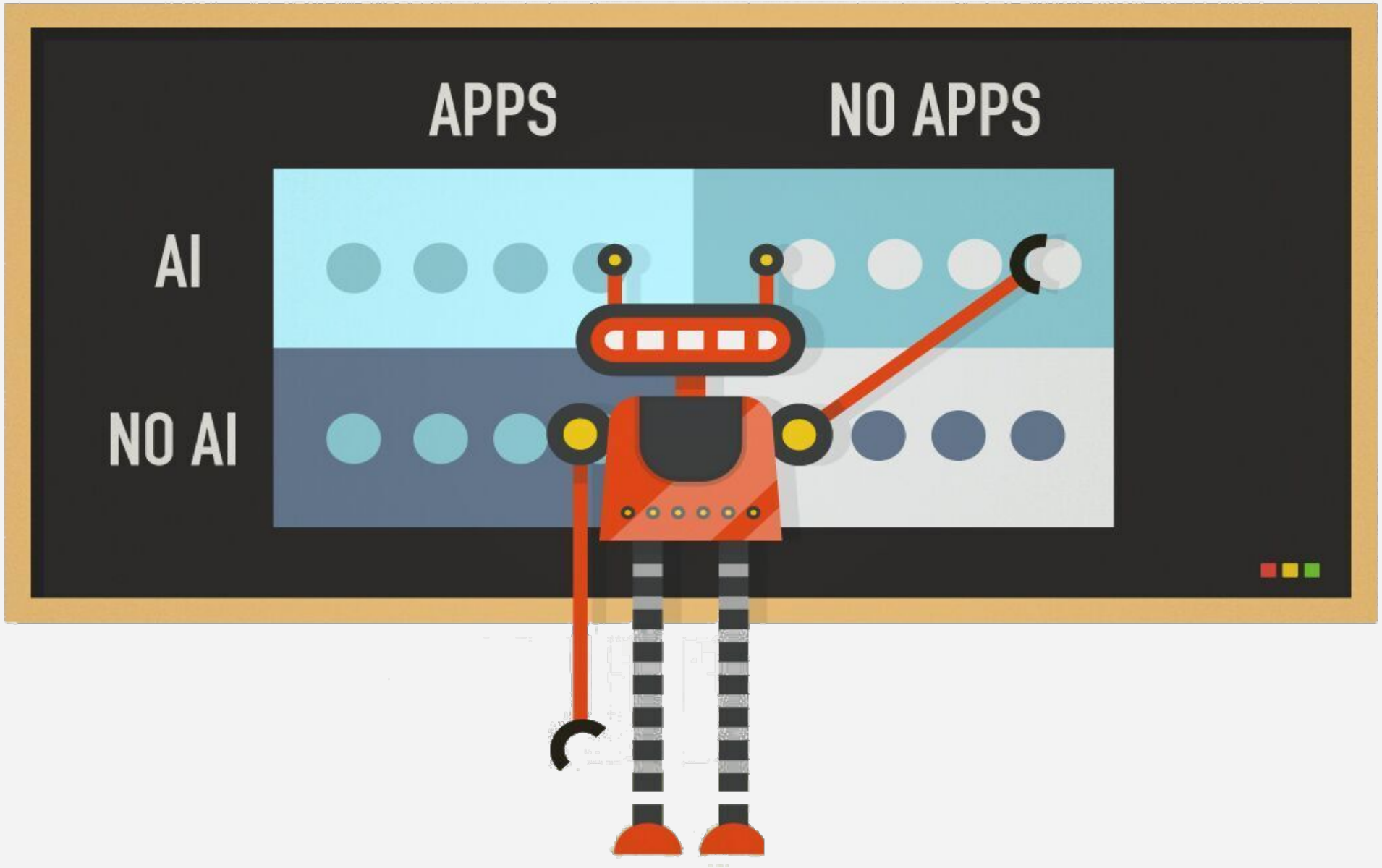

What are chatbots?

Once-in-a-decade paradigm shift

Source: https://www.gupshup.io/developer/home

桔子互动

Chatbot is the Future



桔子互动

What is Chatbot

“A chatbot is a service, powered by rules and sometimes artificial intelligence, that you interact with **via a chat interface**”

---- **Matt Schlicht**
CEO of Octane AI, Founder of Chatbots Magazine

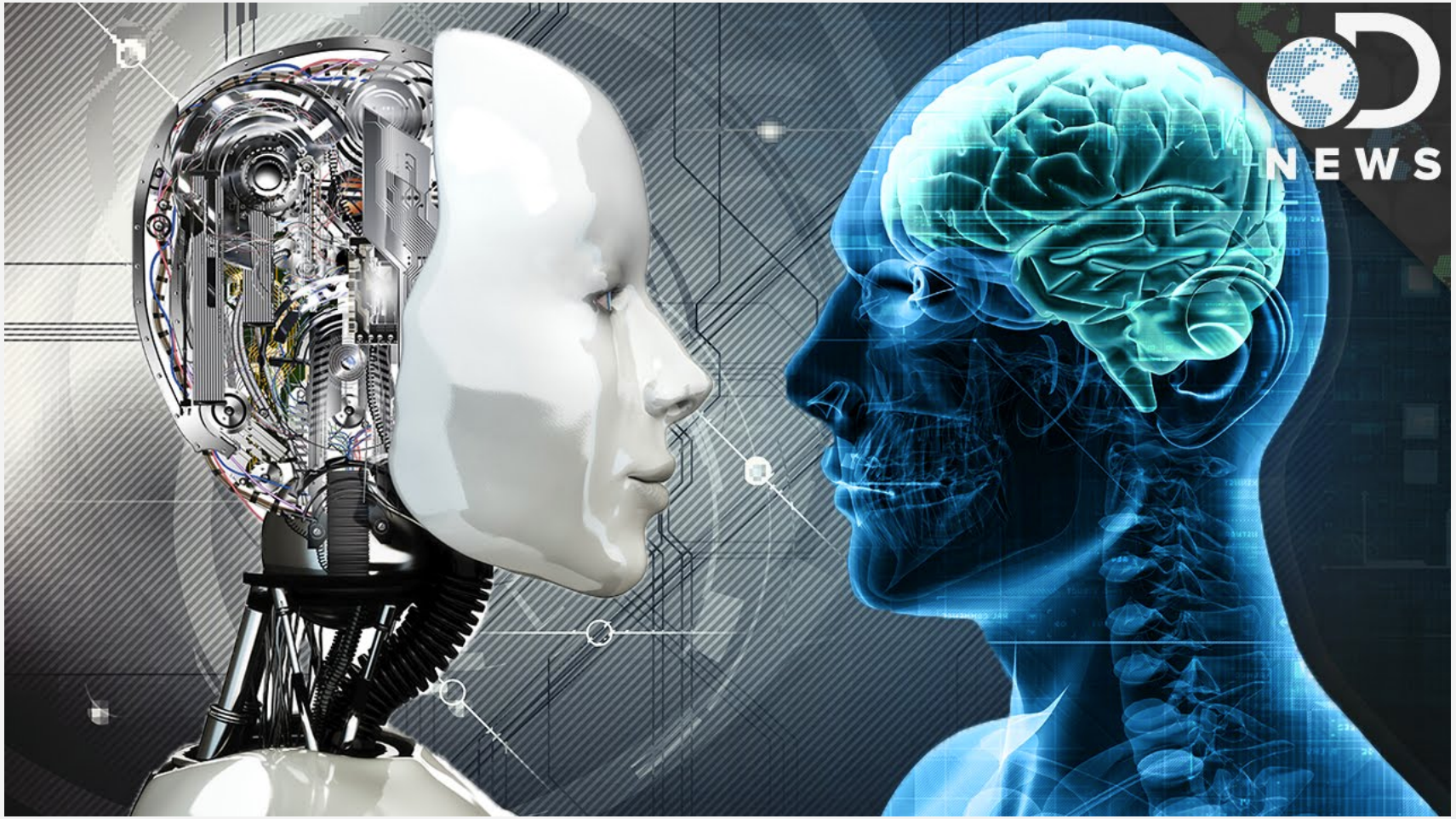
桔子互动

What is Chatbot

"A chatbot is a service, powered by rules and sometimes artificial intelligence, that you interact with **via a chat interface**"

桔子互动

Conversation is the new UI



Apps and websites forced humans to think like computers.
Chatbots are forceing computers to think like human.

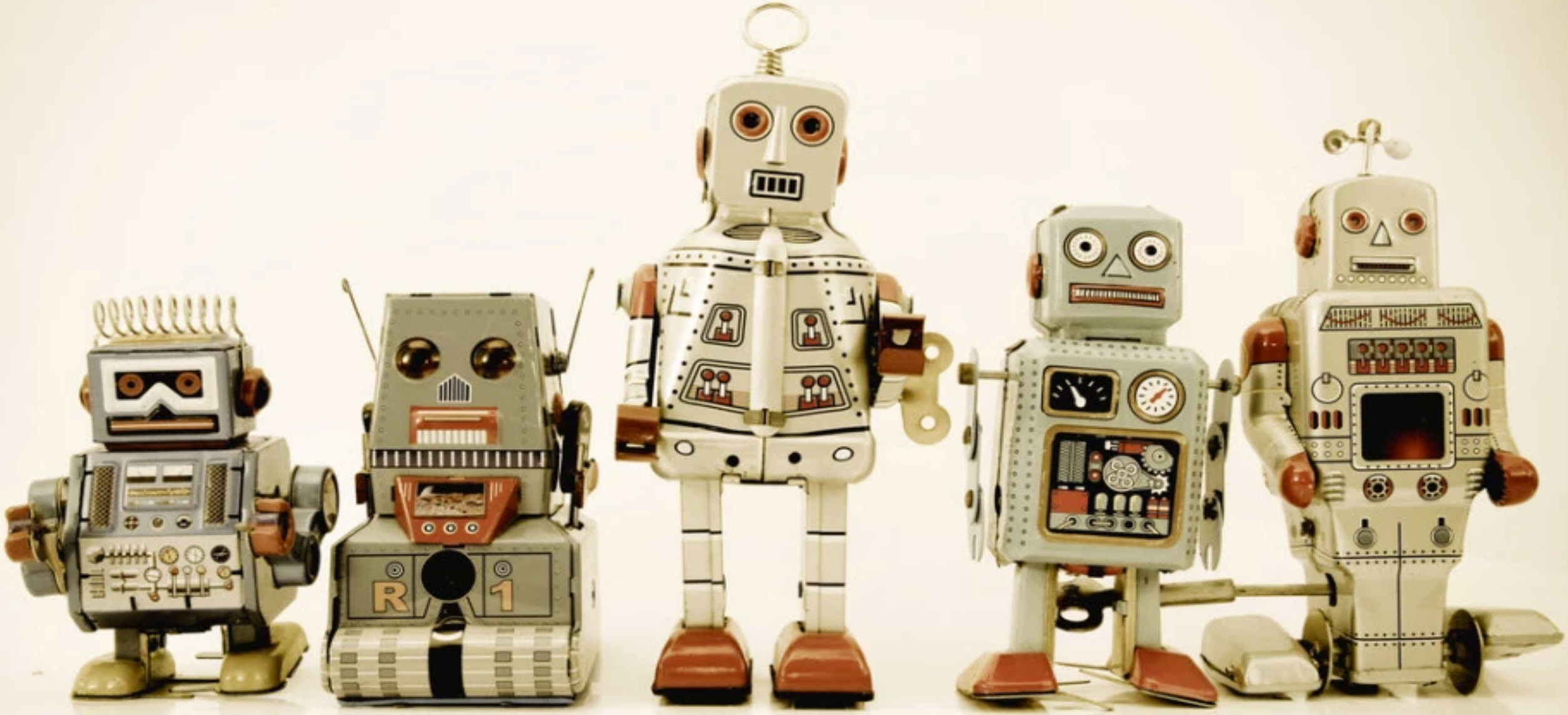
桔子互动

APP VS BOT

- ❌ App fatigue- Users don’ t like download
- ❌ User acquisition costs are high
- ❌ Only short-tail apps popular
- ❌ High cost of development & upgrade & marketing

- √ No installation
- √ Works even in low-network areas
- √ Zero UI
- √ Low cost of development and upgrate

桔子互动



Overview of the Bot Ecosystem.

Messaging is the new platform

Source: http://blog.gupshup.io/index.php/2016/04/

桔子互动

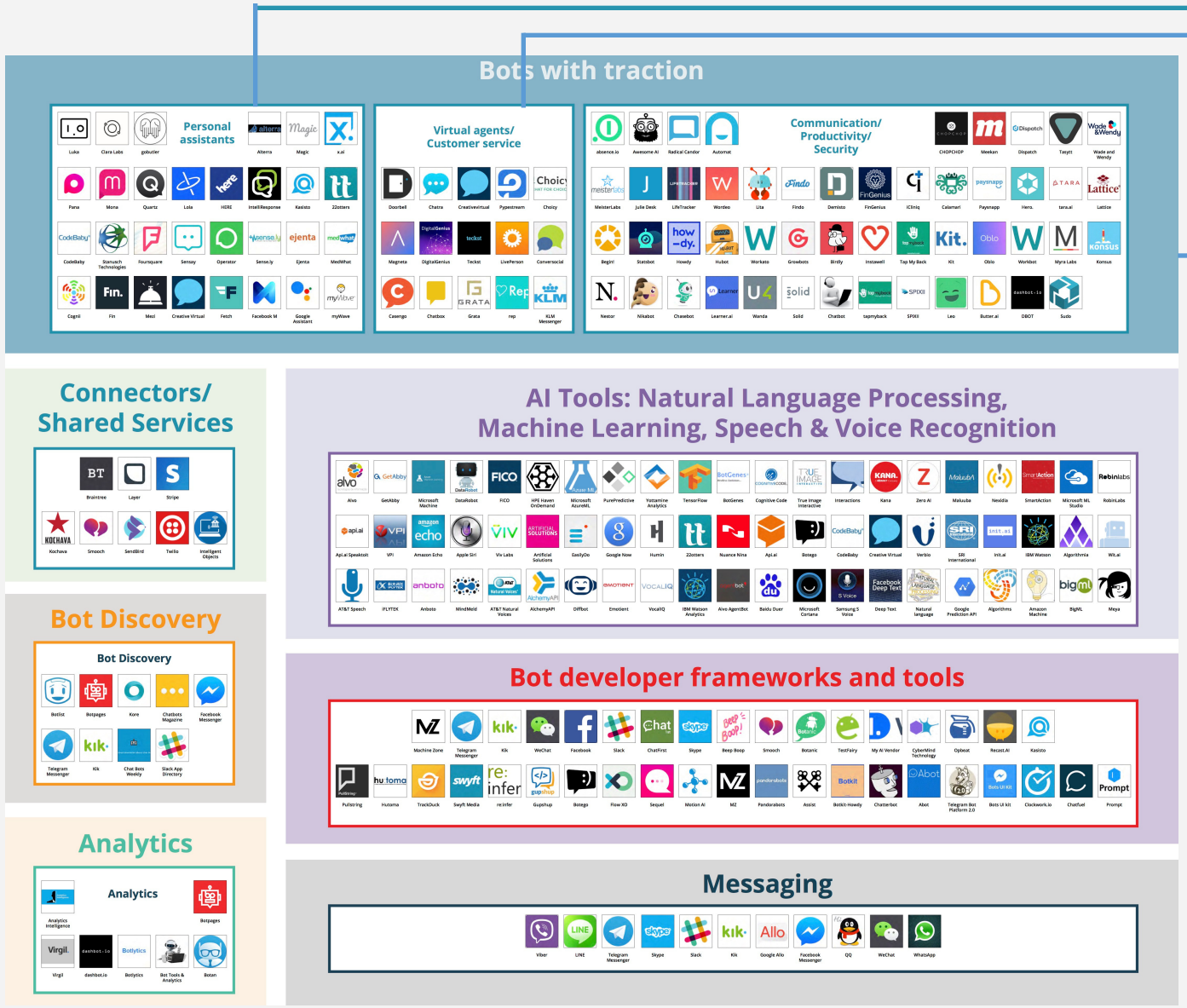
State of bot ecosystem

– Facebook Messenger opened up to developers
– Apple iOS message apps are coming this fall
– Slack, Kik, Telegram, and Skype all support bots

– Facebook has Wit.ai
– Google has Api.ai
– Microsoft has Bot Framework & luis.ai
– IBM has the Watson Conversation API

– Facebook Messenger has over 100K bots
– 100k developers working on FB Messenger bots
– Over 2 million users interact with chatbots regularly
– Thousands of bots on other platforms- Skype, Telegram, Viber, Kik

Bots Landscape



- Personal Assistants
- Virtual agents/ Customer service
- Communication/Productivity/Security

Chatbot is a industry !

Not Just AI !

Not Just Deep Learning !

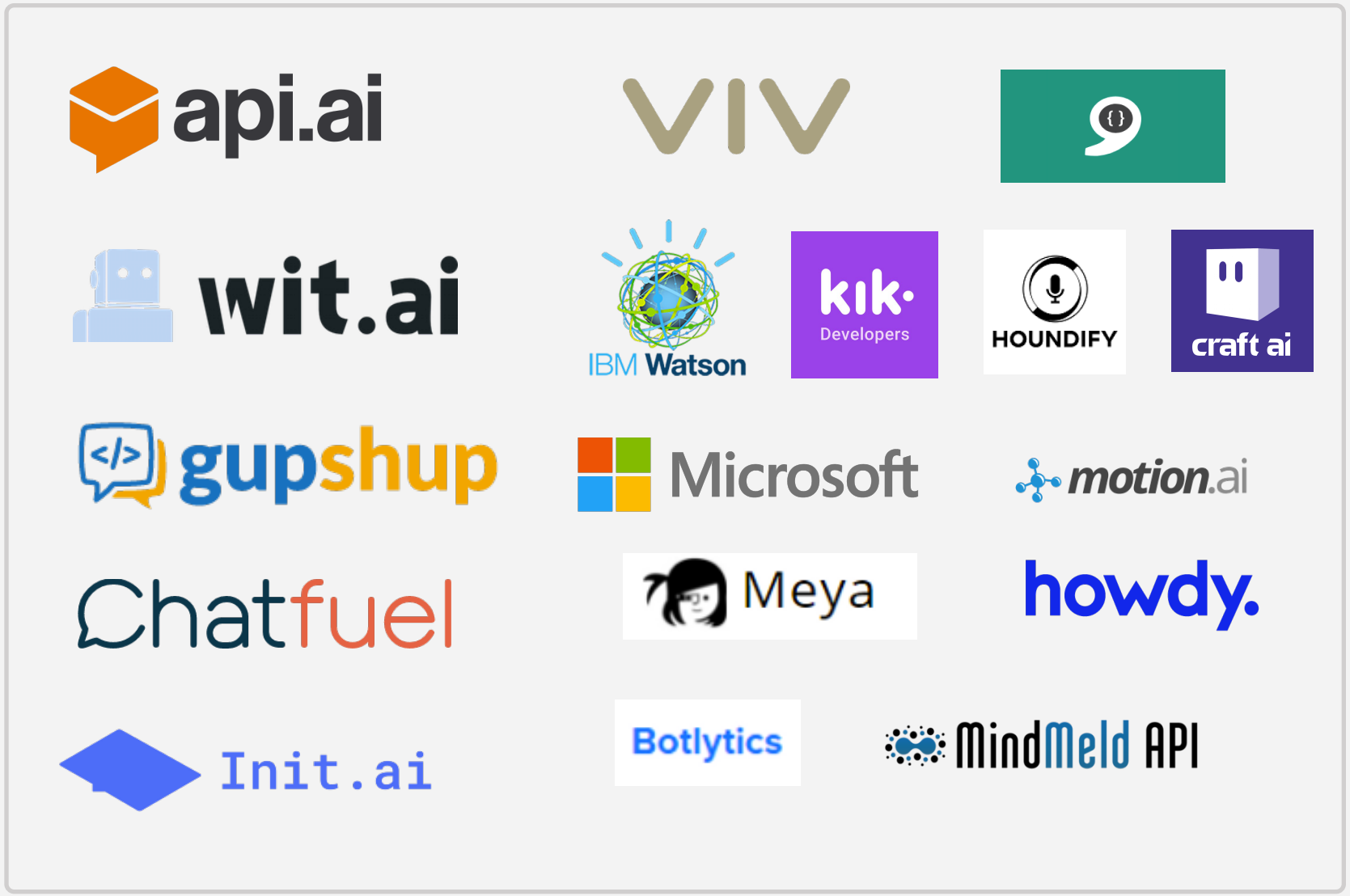
Not Just High Tech !

Not Just Algorithm !

桔子互动

Source https://venturebeat.com/2016/08/11/introducing-the-bots-landscape-170-companies-4-billion-in-funding-thousands-of-bots/

Bots Building Tools



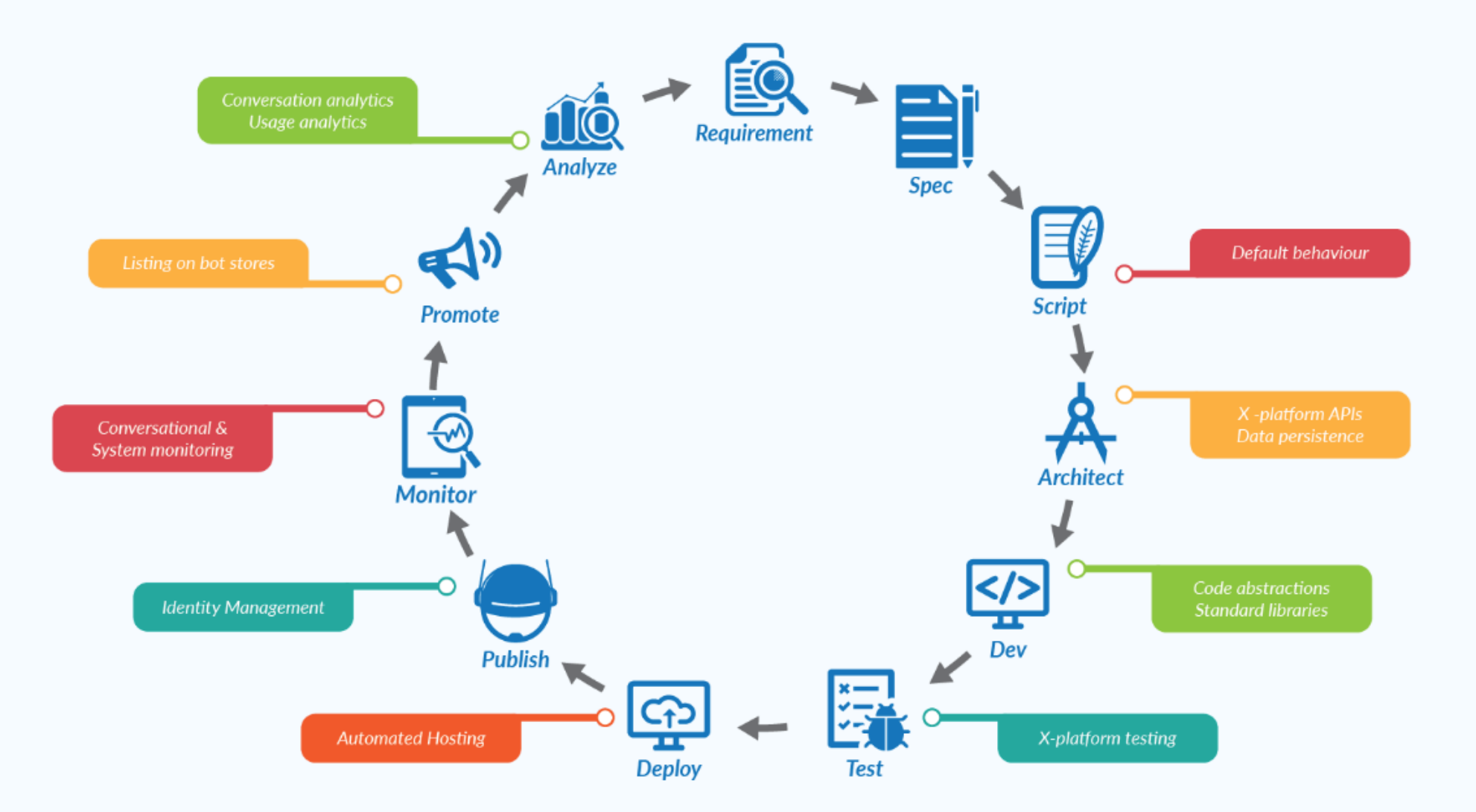
Startup should stand on the shoulders of giant!

AI now = Internet in 90s

Chatbot now = Browers in 90s

桔子互动

The Lifecycle of a bot



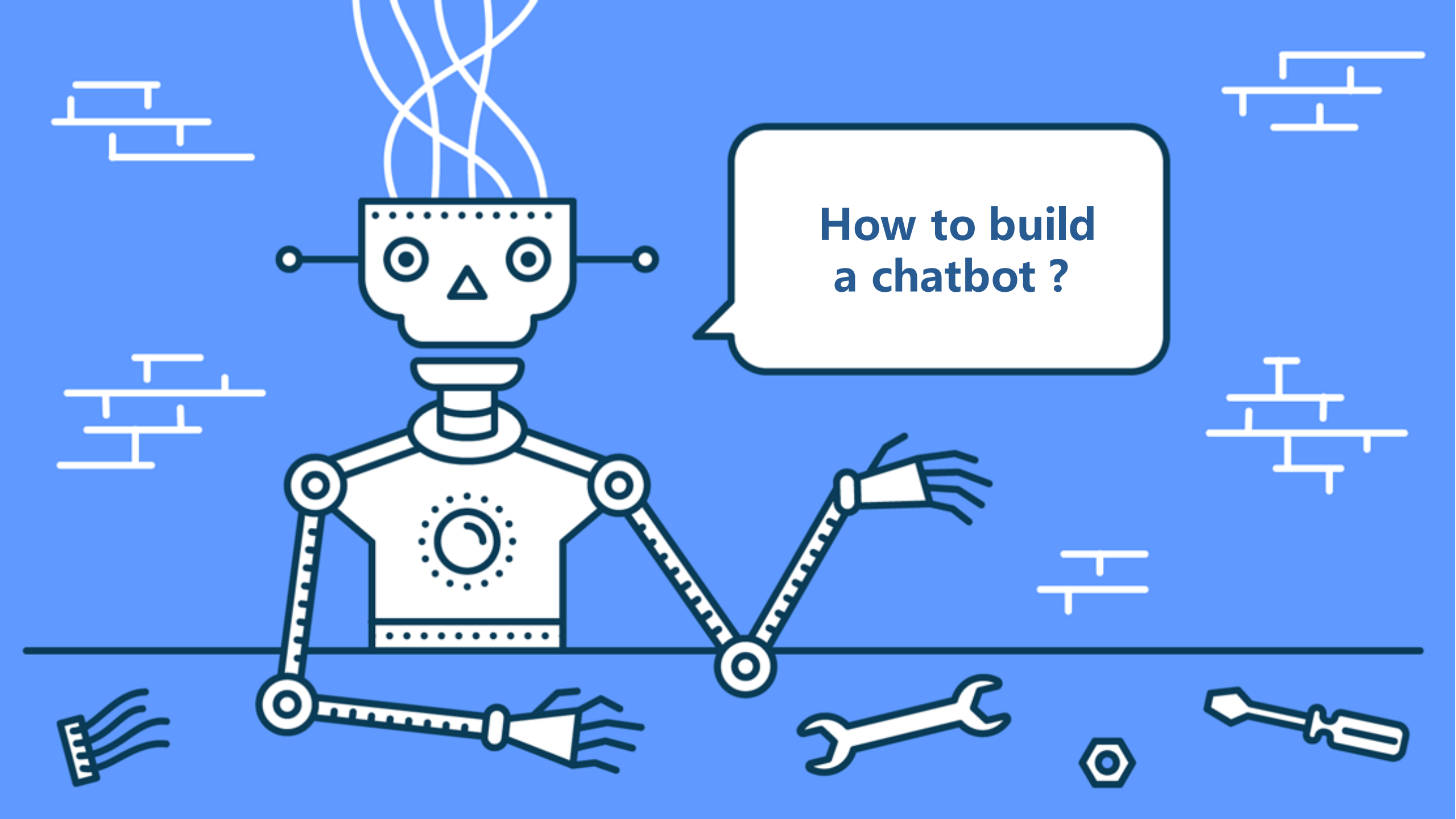
Source: https://chatbotsmagazine.com/the-bot-lifecycle-1ff357430db7

桔子互动

Scene Chatbot

“Focus on **innovation**, not infrastructure.”

桔子互动


How to build
a chatbot ?

Wechaty—wechat for bot

Connect ChatBots

Github link: https://github.com/Chatie/wechaty

桔子互动

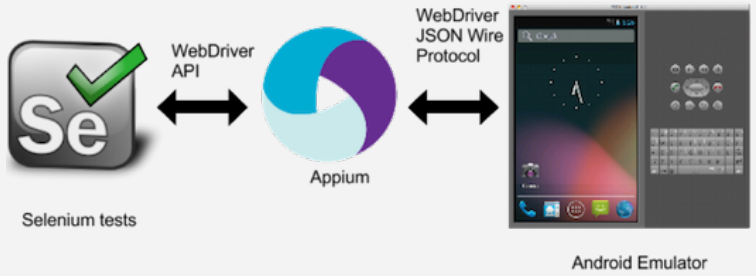
WebDriver ⇔ Browser ⇔ Wechat

✔ Never Care About Server API:

Webdriver puppet never touches the HTTP protocol of wechaty web server API; It uses webdriver to hook angularjs in the browser. So it will never mind the server API change.

✔ Behavior Like a Human

It's very like a user use the browser.



✔ `PuppetAndroid` & `PuppetIos` in the Future

WebDriver can test not only Browser, but also APP! (i.e. Appium - appium.io)

桔子互动

Cons of Browser

✘ Memory Pig

The browser will eat about 100-500MB memory. After several hours, the situation will be worse, might over 1GB with an active wechat account which has more contacts, more big rooms.

✘ ~~Complicated Configuration~~

If you had set a headless browser under a Linux server, you would understand what I mean. (It became a bit better after Dockerized: #66)

✘ Learning Curve of AngularJS(also a ✔?)

桔子互动

Side Project: A Tracker for webwxApp.js

Web version of Wechat is developed by SPA Html with Angular Script named: webwxApp.js

When webwxApp.js has been upgraded, projects like Wechaty who depends on it might run into problem because the hook code is out of date.

I decided to track the upgrading of webwxApp.js with proactive strategy, not only WHAT, but also WHEN, and record them all with SCM(source code management).

Github Project URL - https://github.com/wechaty/webwx-app-tracker

桔子互动

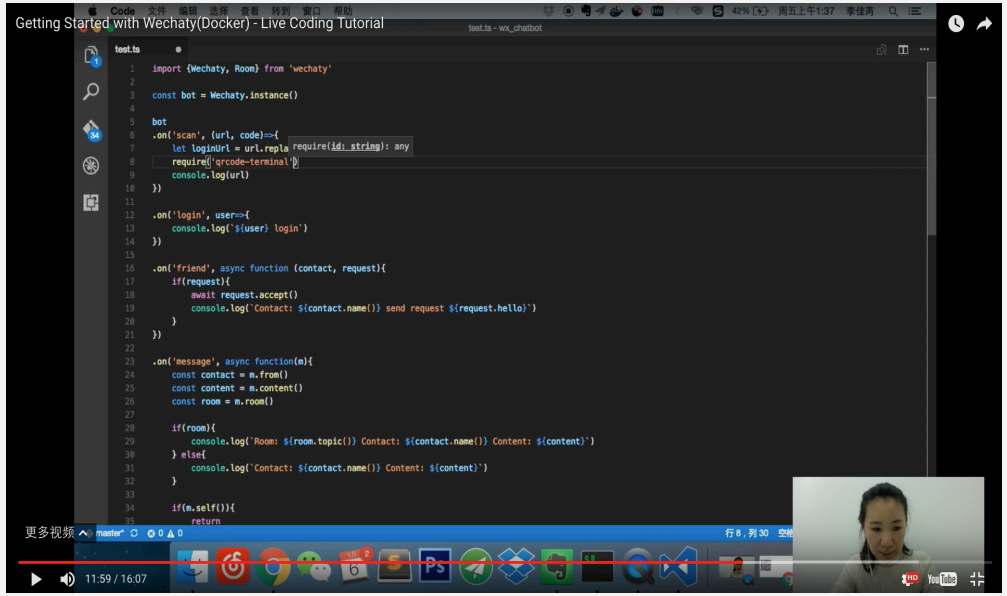
Web Wechat(webwxApp) Insight

1. Strong Privacy Protection
    a. Contact Id(UserName) will change between Sessions
    b. Limited Functions
        i. can not receive many kind of messages
        ii. can not add contact by wechat id
        iii. can not get moment content

2. Easy Inception
    a. Listen Angular Events
    b. Get Angular Factory/Controller
    c. Call Angular Functions
    d. Read Global Variables(such as _contacts)

桔子互动

The World's Shortest ChatBot Code




```
const { Wechaty } = require('wechaty') // import Wechaty from 'wechaty'

Wechaty.instance() // Singleton
.on('scan', (url, code) => console.log(`Scan QR Code to login: ${code}\n${url}`))
.on('login',       user => console.log(`User ${user} logined`))
.on('message',  message => console.log(`Message: ${message}`))
.init()
```

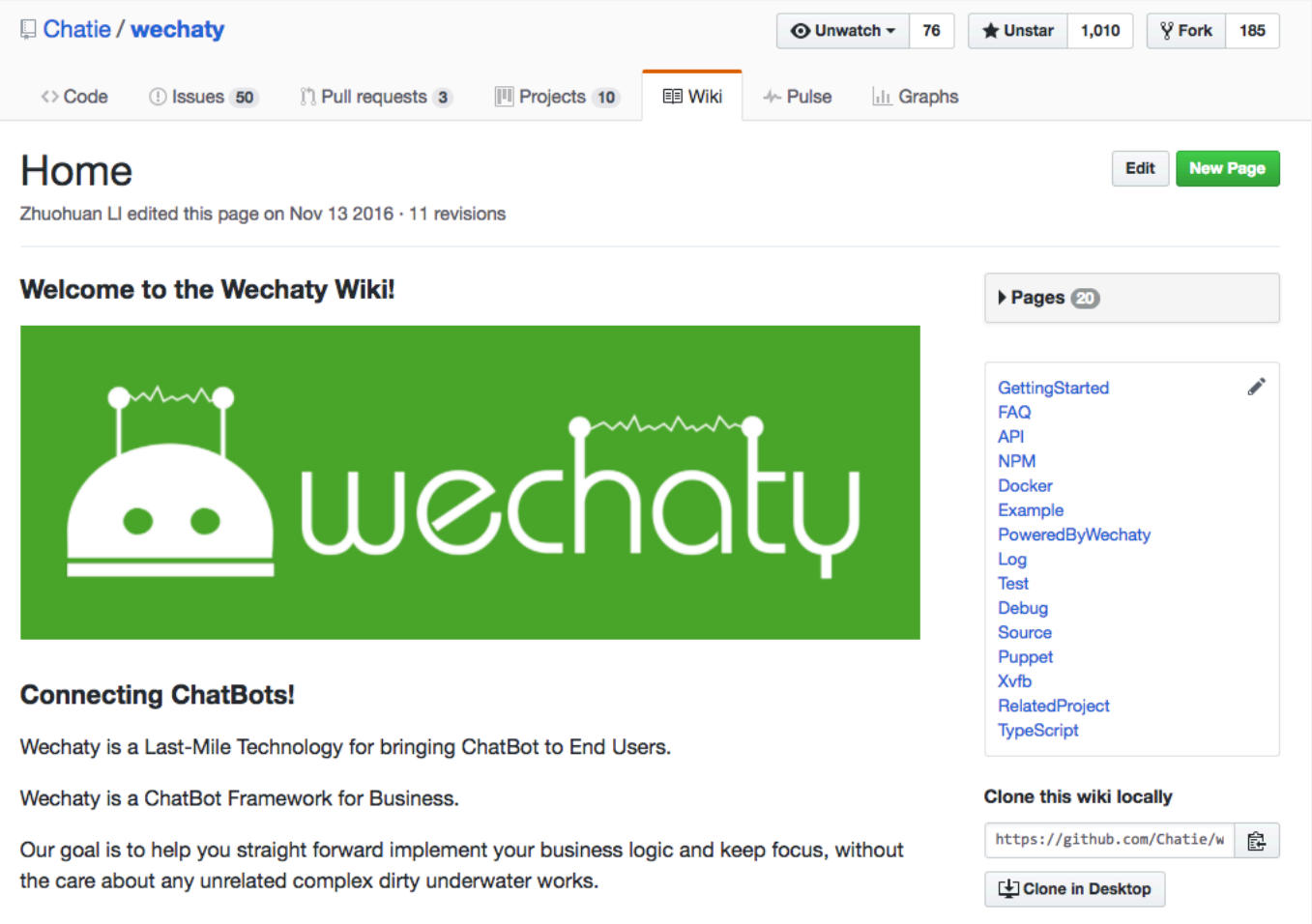
Get-started repo link: https://github.com/lijiarui/wechaty-getting-started.git

Wechaty Examples

1. ding-dong-bot.ts : Auto Reply Message
2. contact-bot.ts : List All Contacts by Wechat ID & Name
3. friend-bot.ts : Auto Accept Friend Request
4. media-file-bot.ts : Save Media Attachment in Message to Local File
5. speech-to-text-bot.ts : Convert Voice Message to Text
6. room-bot.ts : Manage Chat Room
7. tuling123-bot.ts : Answer Any Question
8. api-ai-bot.ts : Integrate with api.ai for Intents & Entities

Wechaty IO Event

1. Error
2. Scan
3. Login
4. Logout
5. Message
6. Friend
7. Join(Room)



桔子互动

Wechaty DevOps

https://www.wechaty.io

GitHub https://github.com/Chatie/wechaty

docker https://hub.docker.com/r/zixia/wechaty/

npm https://npmjs.com/package/wechaty

circleci TRAVIS AppVeyor heroku CLOUDFLARE

Wechaty Community

Contributor

10 people in the Chatie organization — Role

dc dcsan	Private	Member	1 team
Gcaufy Gcaufy	Private	Member	1 team
Michael Chong imWildCat	Private	Member	1 team
Jas JasLin	Private	Member	1 team
lijiarui lijiarui	Public	Member	2 teams
Mike BO mike-bo	Public	Member	0 teams
Mukaiu mukaiu	Private	Member	1 team
Hain Wang Samurais	Private	Member	1 team
Zainan Victor Zhou xinbenlv	Private	Member	1 team
Huan LI zixia	Public	Owner	2 teams

Blog: https://blog.chatie.io/

Wechat Group

Donation: https://www.bountysource.com/teams/chatie

Chatie

Bot is not born, but made.

Beijing · https://blog.chatie.io · dev@chatie.io

Repositories · People 10 · Teams 2 · Projects 1

Pinned repositories

wechaty
Wechat for Bot. Powered by WebDriver / Node.js / Docker
TypeScript · 1k · 185

app
ChatBot Pocket Manager for Android & Ios, Powred by Ionic & Angular
TypeScript · 6

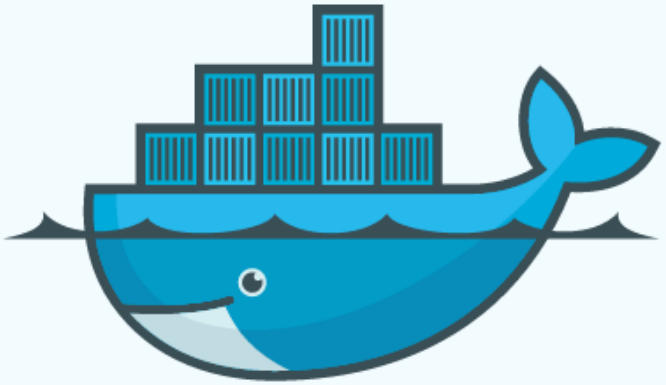
angular
Angular NgModule for Chatie(Web Components)
TypeScript · 1 · 1

webwx-app-tracker
Live Tracking webwxApp Version Change
JavaScript · 11 · 4

blog
Chatie Official Blog
Ruby · 1 · 6

stt
Speech to Text for Node.js
TypeScript

桔子互动



zixia/wechaty

?

?

0

$ docker run zixia/wechaty help

$ docker run zixia/wechaty demo

Usage: wechaty [mybot.js | mybot.ts | COMMAND]

Run a JavaScript/TypeScript <Bot File>, or a <Wechaty Command>.

<Bot File>:
mybot.js: a JavaScript bot. will run by Node.js v7
mybot.ts: a TypeScript bot. will run by ts-node/TypeScript v2

<Commands>:
demo Run Wechaty DEMO
doctor Print Diagnose Report
test Run Unit Test

Learn more at:
https://github.com/wechaty/wechaty/wiki/Docker

Run in Docker

Install Docker

Quick & easy install Docker via:

```
curl -sSL https://get.docker.com | sh
```

Or

```
wget -qO- https://get.docker.com/ | sh
```

Get to know more about Docker at: https://www.docker.com/

Docker options explanation

1. `-t` : Allocate a pseudo-TTY
2. `-i` : Keep STDIN open even if not attached
3. `--rm` : Automatically remove the container when it exits
4. `-e WECHATY_LOG="$WECHATY_LOG"` : Pass the environment variable `WECHATY_LOG` into the container
5. `--volume="$(pwd)":/bot` : Bind current directory(`"$(pwd)"`) to ' `/bot` ' inside the container, by mounting the volume
6. `--name=wechaty` : Assign `wechaty` as the container name
7. `zixia/wechaty:latest` : Image name on docker hub, here's our zixia/wechaty with `latest` version
8. `mybot.js` : File contains code wrote by you, should be placed in current directory `./`

Run

The best practice of using Wechaty Docker is like the following:

```
$ cat > mybot.js <<'EOF'
const { Wechaty } = require('wechaty')

Wechaty.instance() // Singleton
.on('scan', (url, code) => console.log(`Scan QrCode to login: ${code}\n${url}`))
.on('login',       user => console.log(`User ${user} logined`))
.on('message',  message => console.log(`Message: ${message}`))
.init()
EOF

$ function wechaty() {
  docker run \
    -t -i --rm \
    -e WECHATY_LOG="$WECHATY_LOG" \
    --volume="$(pwd)":/bot \
    zixia/wechaty:latest \
    "$@"
}

$ wechaty mybot.js
```

https://github.com/Chatie/wechaty/wiki/Docker

Related Scene

Voice from Developer

“所以我在GitHub上找到了Wechaty，发现只要几十行代码，就可以满足我的需求。最主要的是，机械化的流水操作，机器人做的比人工要好很多。”

- **李佳芮，桔子互动创始人/CEO**

“这明明就是一些机械化的流水作业啊！这怎么能让一个程序员去完成呢？于是我开始梳理了我的需求：

1. 自动通过好友请求。
2. 当我的粉丝和我微信聊天的时候，能通过关键词进行自动回复。毕竟问题80%都是一样的。
3. 自动的把他们拉进群里。”

Source: https://blog.wechaty.io/2016/12/10/try-to-write-wexinrobot.html

桔子互动

Voice from Developer

“i found wechaty, it’s what i need exactly :). i rewrite the code very javascript, and the robot works well, it’s stable ,It seldom exits the program itself. thanks for wechaty!”

- **JasLin, BotWave CTO**

“we have a meditation group, people in the group take meditation every day, after meditation they check in with a emotion image in the group, to help encourage the others or themselves keep meditation every day.

before use wechaty , i used a python sdk to build the robot. but it was not stable enough,it logout often and some other problems”

Source: https://blog.wechaty.io/case/2016/12/08/jaslin-user-case.html

桔子互动

Voice from Developer

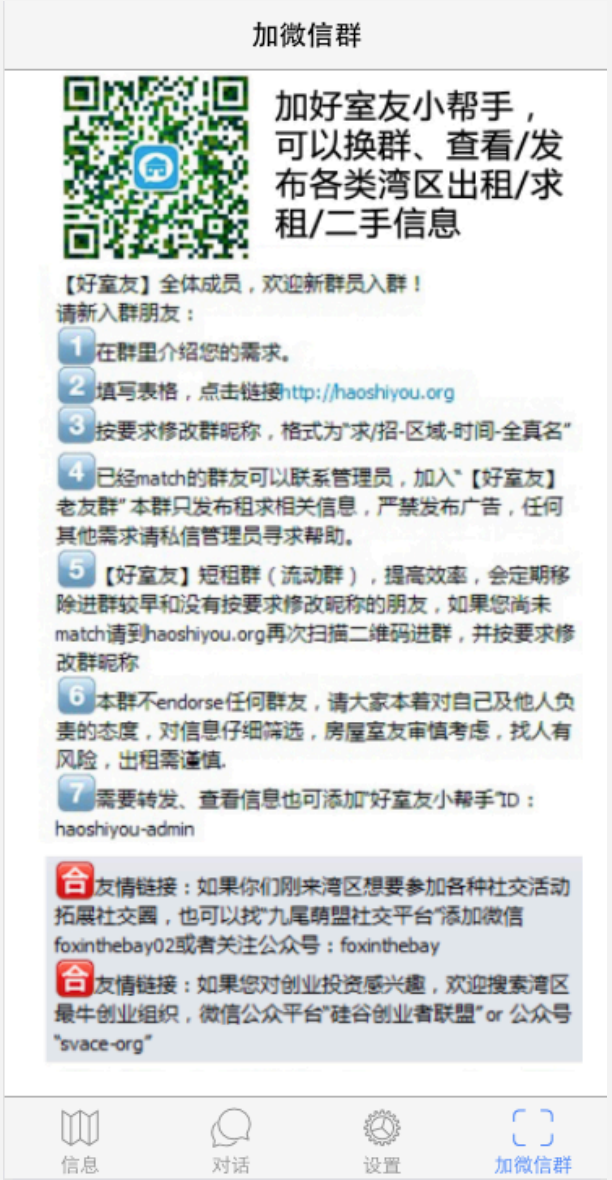
“在得知Chatie之后，我们立即使用Chatie的接口开发了机器人来进行群的管理工作， 大大简化了管理员志愿者们的工作流程和负担。我们这里介绍一下我们的业务逻辑模块。”

- **周载南, Google Software Engineer & Haoshiyou Founder**

“为了帮助新来硅谷的朋友找室友和租房，我们在所在地区组建了若干微信群。 我们对这个项目的基本理念是简单专注，用完即走。

我们一共有数个微信群，按照硅谷旧金山湾区的几个租房区域进行分群， 每个微信群常年满上限500人。我们要求入群的朋友修改群昵称， 每周要按照一定的规则将不按照要求修改群昵称的群友和最早入群的人踢出，以实现群员的流动， 确保群里都是最近有租房需求的朋友而不是许多租房群常见的僵尸群情况。

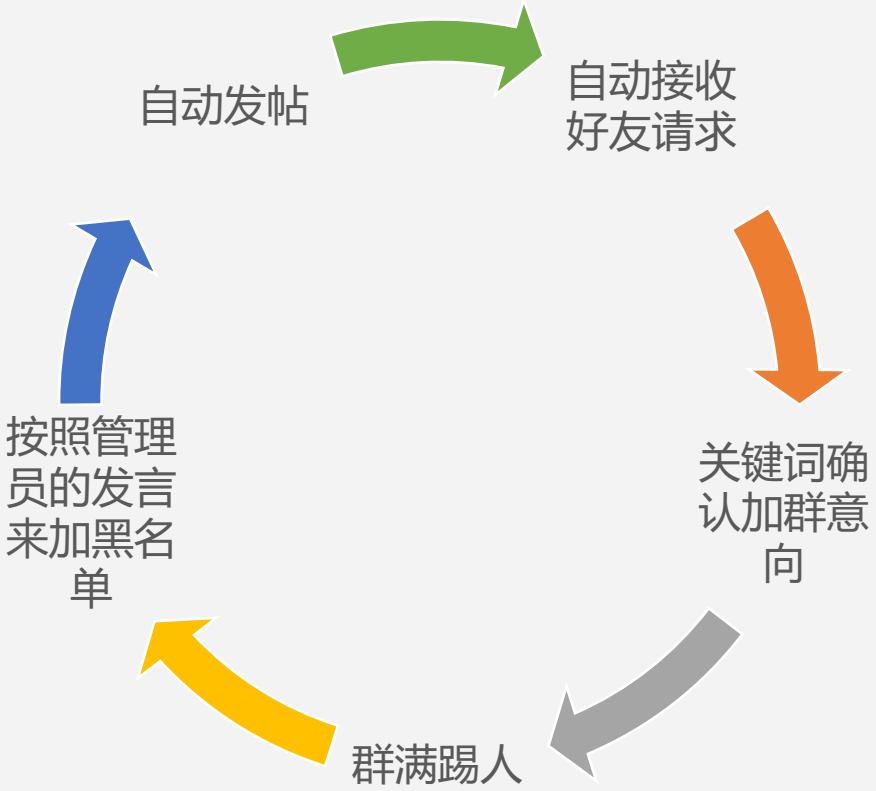
另外，我们不允许发布任何与租房无关的信息：广告、二手交易、机票信息等常见扩散信息都被视为禁止类型。 在群管理员志愿者们的共同努力下，我们群在湾区朋友中间以简洁活跃赢得了相当不错的口碑， 被常常被湾区的群友介绍给自己新来湾区的朋友。”



Source: https://blog.chatie.io/2017/04/16/how-chatie-is-used-in-haoshiyou-project.html

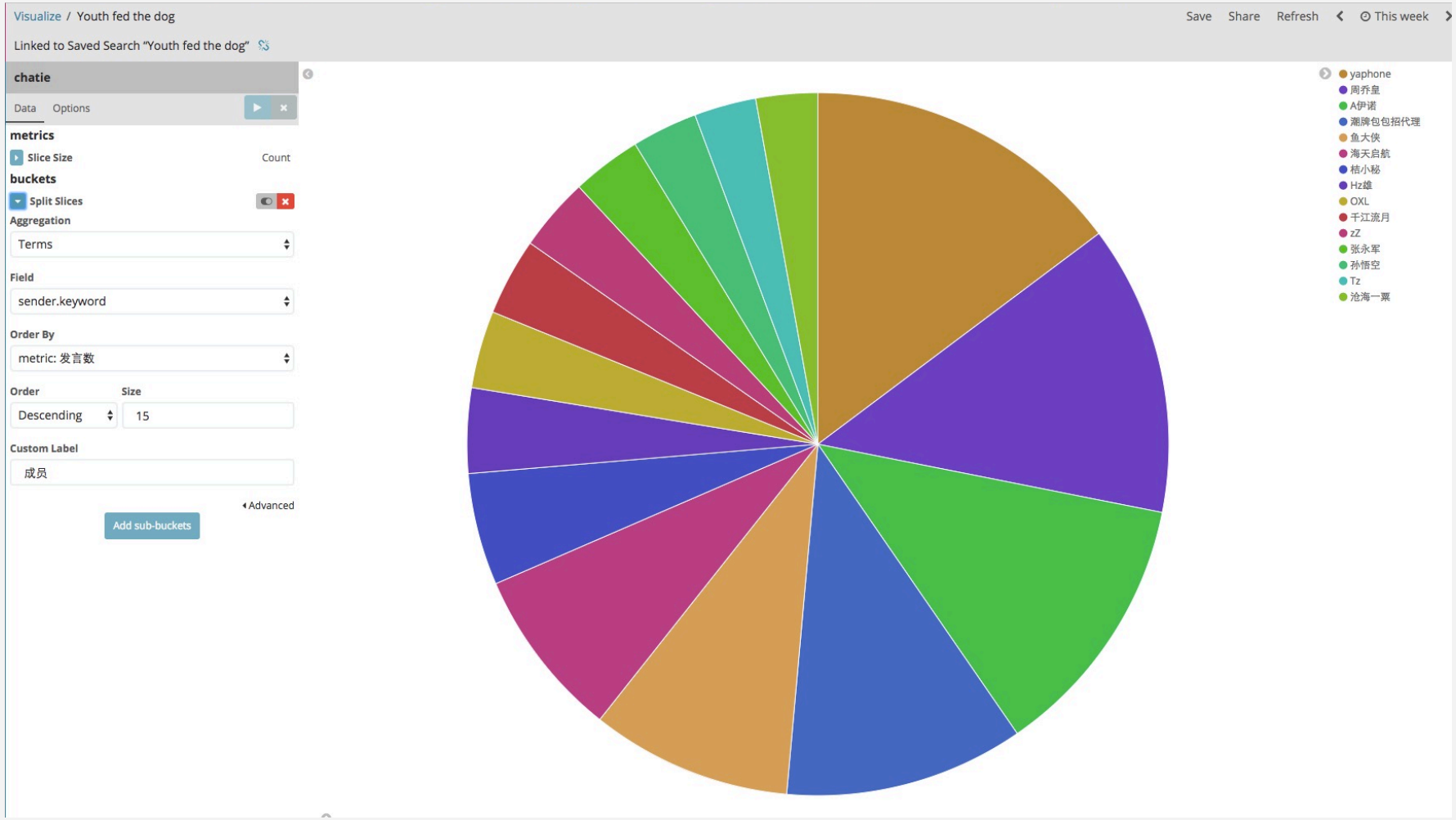
桔子互动

Voice from Developer



桔子互动

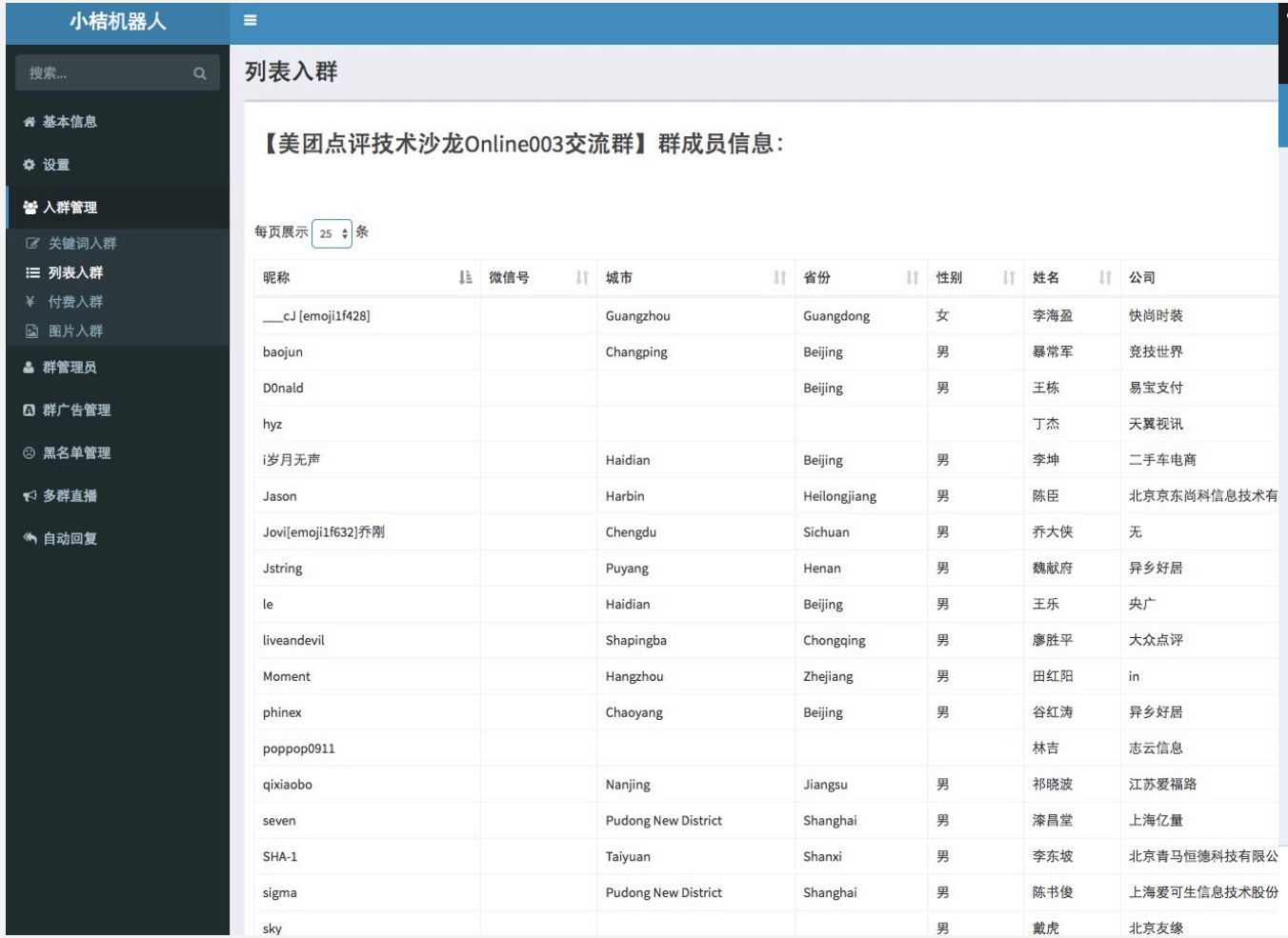
Analysis



Wechaty + kibana

桔子互动

Social CRM



昵称	微信号	城市	省份	性别	姓名	公司
___cJ [emoji1f428]		Guangzhou	Guangdong	女	李海盈	快尚时装
baojun		Changping	Beijing	男	暴常军	竞技世界
D0nald			Beijing	男	王栋	易宝支付
hyz					丁杰	天翼视讯
i岁月无声		Haidian	Beijing	男	李坤	二手车电商
Jason		Harbin	Heilongjiang	男	陈臣	北京京东尚科信息技术有
Jovi[emoji1f632]乔刚		Chengdu	Sichuan	男	乔大侠	无
Jstring		Puyang	Henan	男	魏献府	异乡好居
le		Haidian	Beijing	男	王乐	央广
liveandevil		Shapingba	Chongqing	男	廖胜平	大众点评
Moment		Hangzhou	Zhejiang	男	田红阳	in
phinex		Chaoyang	Beijing	男	谷红涛	异乡好居
poppop0911					林吉	志云信息
qixiaobo		Nanjing	Jiangsu	男	祁晓波	江苏爱福路
seven		Pudong New District	Shanghai	男	漆昌堂	上海亿量
SHA-1		Taiyuan	Shanxi	男	李东坡	北京青马恒德科技有限公
sigma		Pudong New District	Shanghai	男	陈书俊	上海爱可生信息技术股份
sky				男	戴虎	北京友缘

桔子互动

Charge to join in a group

桔子互动

NLU

```
.on('login'   , user => {
  log.info('Bot', `${user.name()} logined`)
  bot.say('Wechaty login')
})
.on('error'   , e => {
  log.info('Bot', 'error: %s', e)
  bot.say('Wechaty error: ' + e.message)
})
.on('scan', (url, code) => {
  if (!/201|200/.test(String(code))) {
    let loginUrl = url.replace(/\/qrcode\//, '/l/')
    QrcodeTerminal.generate(loginUrl)
  }
  console.log(`${url}\n[${code}] Scan QR Code in above url to login: `)
})
.on('message', async m => {
  try {
    if (m.self() || m.type() !== MsgType.TEXT) {
      return
    }
    const response = await luis(m)
  } catch (e) {
    log.error('Bot', 'on(message) exception: %s' , e)
  }
})
```

Wechaty + Luis.ai

```
.on('message', async m => {
  try {
    if (m.self() || m.type() !== MsgType.TEXT) {
      return
    }
    const response = await apiAi(m.content())
    const result = response['result']
    if (result['metadata'] && result['parameters']) {
      await m.say('intent:' + result['metadata']['intentName'])

      for (let i in result['parameters']) {
        if (result['parameters'][i]) {
          await m.say('获取参数: ' + i + '--' + result['parameters'][i])
        }
      }
    } else {
      await m.say('你说什么，我听不懂')
    }
  } catch (e) {
    log.error('Bot', 'on(message) exception: %s' , e)
  }
})
```

Wechaty + API.ai

桔子互动

Related Scene

- Wechat group customer profiles
- Invite friends into group based on keywords, forms,or fee
- Multi-group Live Message
- Select the most attractive avatar
- Store vedio/file via wechat to cloud storage
- Generate lyric and image
- Book all kinds of ticket
- Github notify
- Save group message and analysis
- ……

桔子互动

Fullstack

Express JS

桔子互动

Talk is cheap.

Show me the code.

Linus Torvalds

quotefancy

Use NPM in China

1. Temporary

```
npm --registry https://registry.npm.taobao.org install wechaty
```

2. Permanetly

```
npm config set registry https://registry.npm.taobao.org

npm install wechaty
```

3. Alias

```
alias cnpm="npm --registry=https://registry.npm.taobao.org \
    --cache=$HOME/.npm/.cache/cnpm \
    --disturl=https://npm.taobao.org/dist \
    --userconfig=$HOME/.cnpmrc"

cnpm install wechaty
```

桔子互动

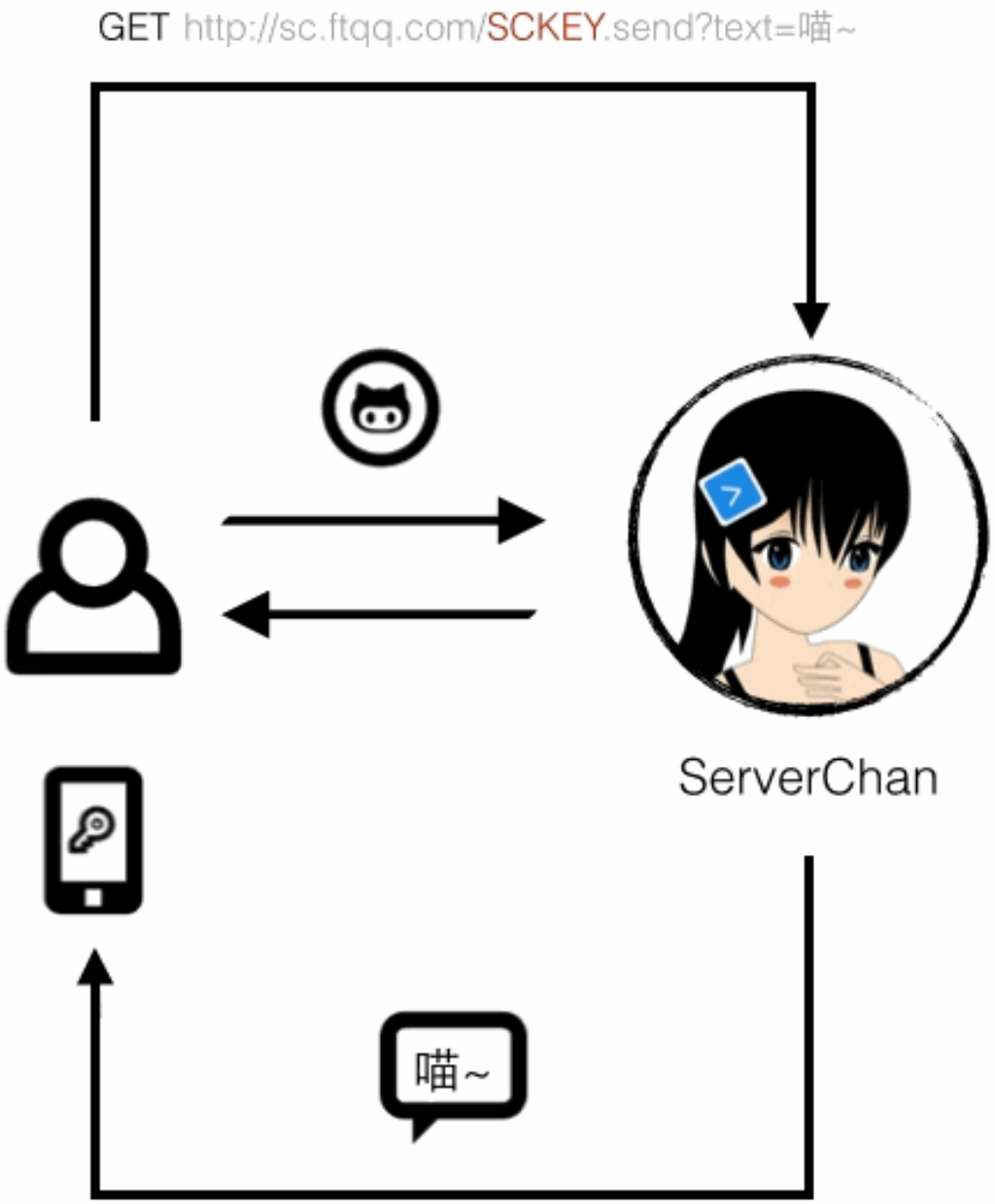
Related Q&A

- Queue
- ServerChan
- ChromeDriver
- Docker
- Unique Id
- Room/Contact.ready

ServerChan

Link: http://sc.ftqq.com/3.version

- ✓ Login with github account and get a SCKEY
- ✓ Bind wechat OA with your wechat by scaning the qrcode
- ✓ Send request to http://sc.ftqq.com/SCKEY.send.



ServerChan

```
.on('scan', (url, code) => {
  if (!/201|200/.test(String(code))) {
    let loginUrl = url.replace(/\/qrcode\//, '/l/')
    require('qrcode-terminal').generate(loginUrl)
  }
  serverJiang(bot_name+'scan','![logo]('+url+')')
  console.log(`${url}\n[${code}] Scan QR Code in above url to login: `)
})

function serverJiang(username,content){
  var request = require('request')
  var url = 'http://sc.ftqq.com/'+SCKEY+'.send'
  var propertiesObject = {text:username,desp:content}

  request({url:url, qs:propertiesObject}, function (error, response, body) {
    if (!error && response.statusCode == 200) {
      var testjson = JSON.parse(body)
    }
  })
}
```

桔子互动

Q&A

5. How to send mesage without onMessage?

Send message to one room

```
const r = await Room.find({topic: 'room name'})
r.say('hello room')
```

Send message to one contact

```
const c = await Contact.find({name: 'contact name'})
c.say('hello room')
```

See more example at https://github.com/Chatie/wechaty/wiki/Example

Related issues:

- #446 how to send mesage without onMessage
- #200 [new feature] Forward Message
- #89 Wechaty.send() error when send message to the room
- #41 [New Feature] send message by branding new method: say()

桔子互动

Thanks!

桔子互动