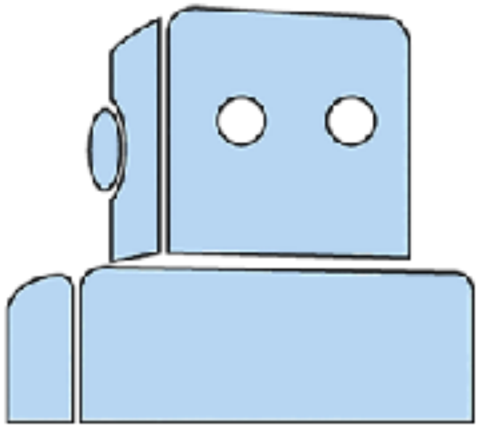
Build Your First Chatbot with Wit.ai

Kevin Bluer



Agenda

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- Brief Background
- Session Goals
- History + Status Quo
- Introducing Wit
- **Your First Bot (“Hello World”)**
- Interface Choices
- Using the APIs
- Further Tools and Resources

Background

Background

- CTO of Nest.vc
- Reason experience with Node, React, MEAN
- Teaching with General Assembly + independently
- Developing Chatbots for … years :)

Session Goals

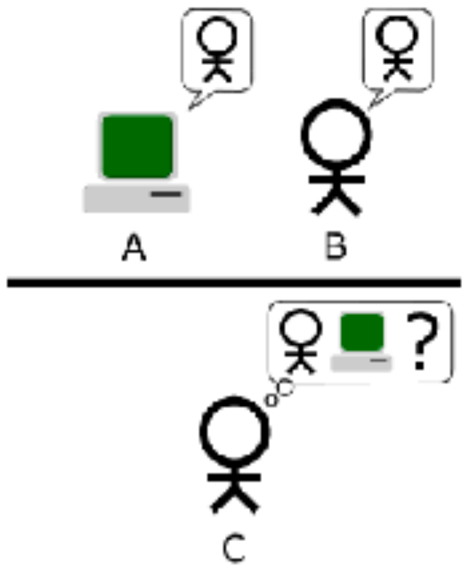
Session Goals

- To **know more** about chatbots than you did before
- Briefly explore the **major platforms**
- Appreciate some of the **current trends**
- Start **building your own** and review some code

History

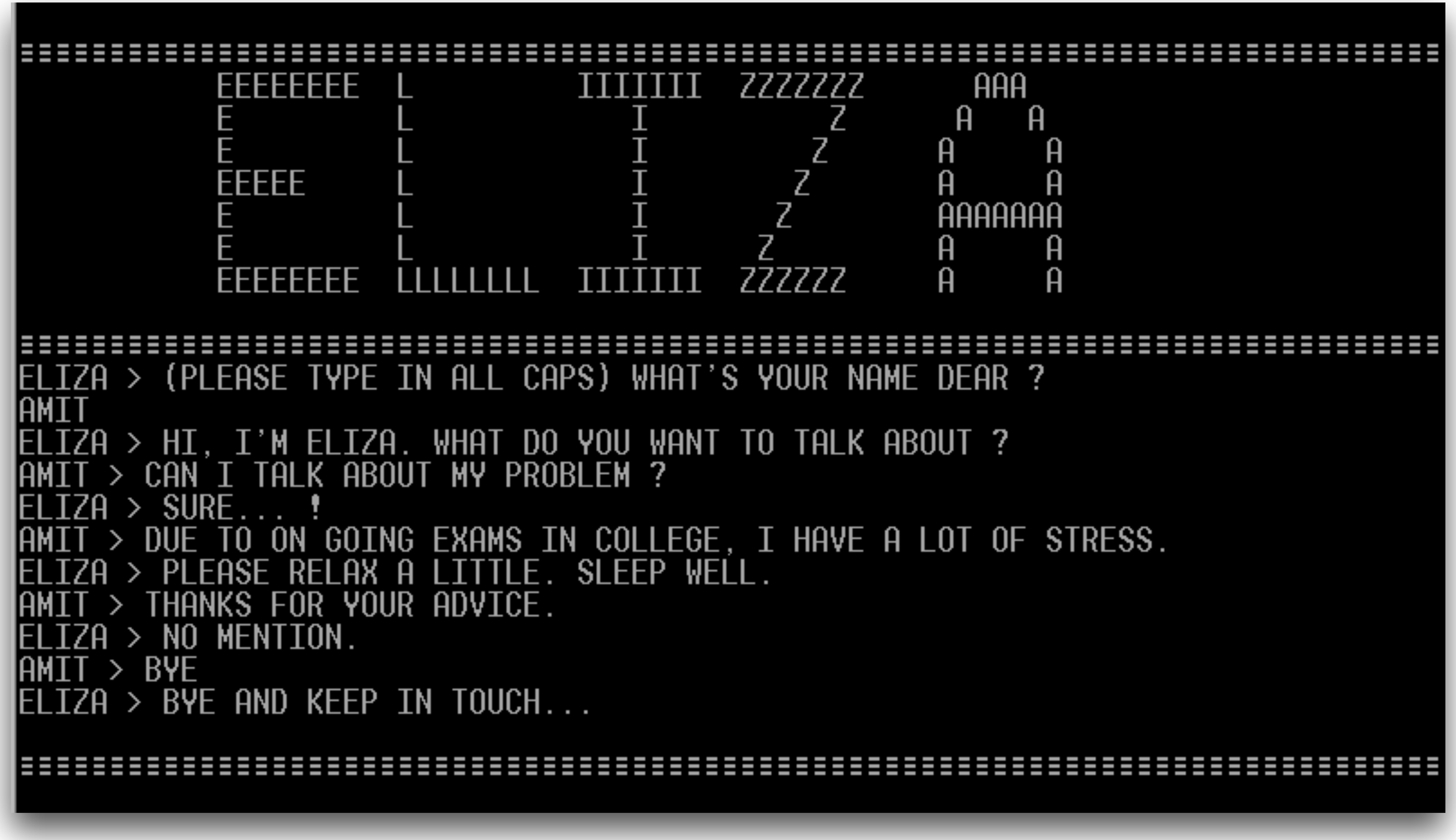
Turing Test (1950s)

“A test for intelligence in a computer, requiring that a human being should be **unable to distinguish the machine from another human being** by using the replies to questions put to both.”



ELIZA (1960s)

- Developed by MIT professor Joseph Weizenbaum
- Looked for certain patterns + keywords and asked an appropriate response
- Initial developed as a parody, the results were surprising in how deeply people engaged…
- Led to a small explosion in development (ALICE, Mitsuku, Albert One)



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===============================================================================
           EEEEEEEE  L         IIIIIII  ZZZZZZZ      AAA
           E         L            I          Z      A   A
           E         L            I         Z      A     A
           EEEEE     L            I        Z       A     A
           E         L            I       Z        AAAAAAA
           E         L            I      Z         A     A
           EEEEEEEE  LLLLLLLL  IIIIIII  ZZZZZZ     A     A

===============================================================================
ELIZA > (PLEASE TYPE IN ALL CAPS) WHAT'S YOUR NAME DEAR ?
AMIT
ELIZA > HI, I'M ELIZA. WHAT DO YOU WANT TO TALK ABOUT ?
AMIT > CAN I TALK ABOUT MY PROBLEM ?
ELIZA > SURE... !
AMIT > DUE TO ON GOING EXAMS IN COLLEGE, I HAVE A LOT OF STRESS.
ELIZA > PLEASE RELAX A LITTLE. SLEEP WELL.
AMIT > THANKS FOR YOUR ADVICE.
ELIZA > NO MENTION.
AMIT > BYE
ELIZA > BYE AND KEEP IN TOUCH...

===============================================================================
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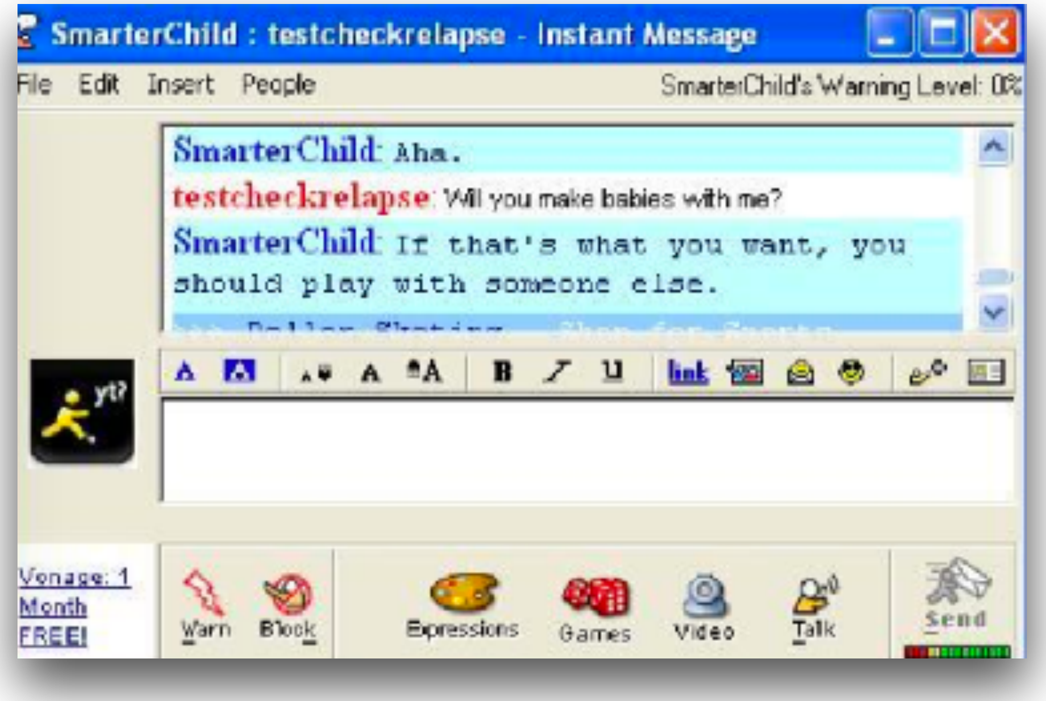
SmarterChild (2000)

- Rode on the back of the rising popularity of text messaging
- First platform to leverage **natural language processing** (and covered a wide range of topics)



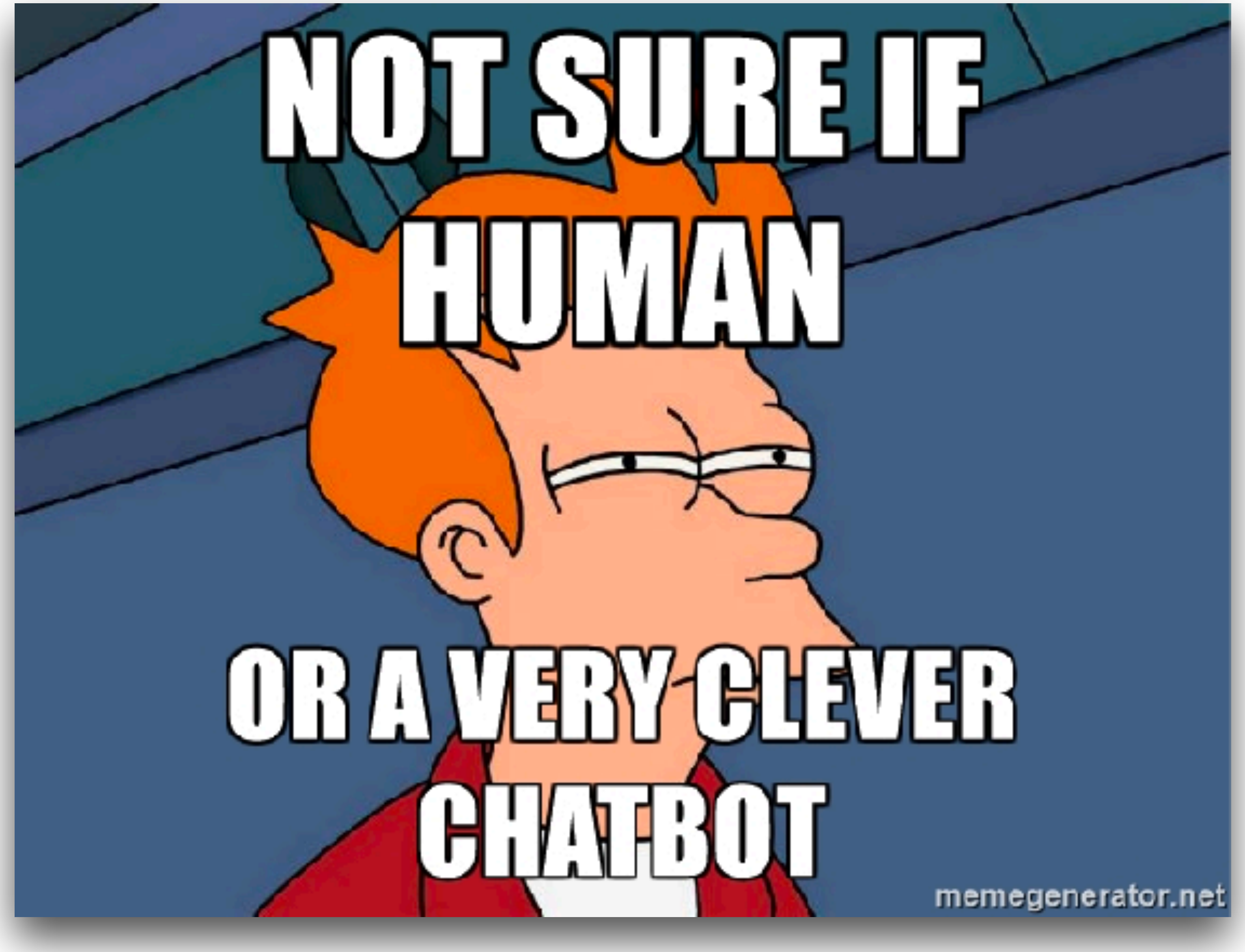
SmarterChild: Aha.

testcheckrelapse: Will you make babies with me?

SmarterChild: If that's what you want, you should play with someone else.

Status Quo

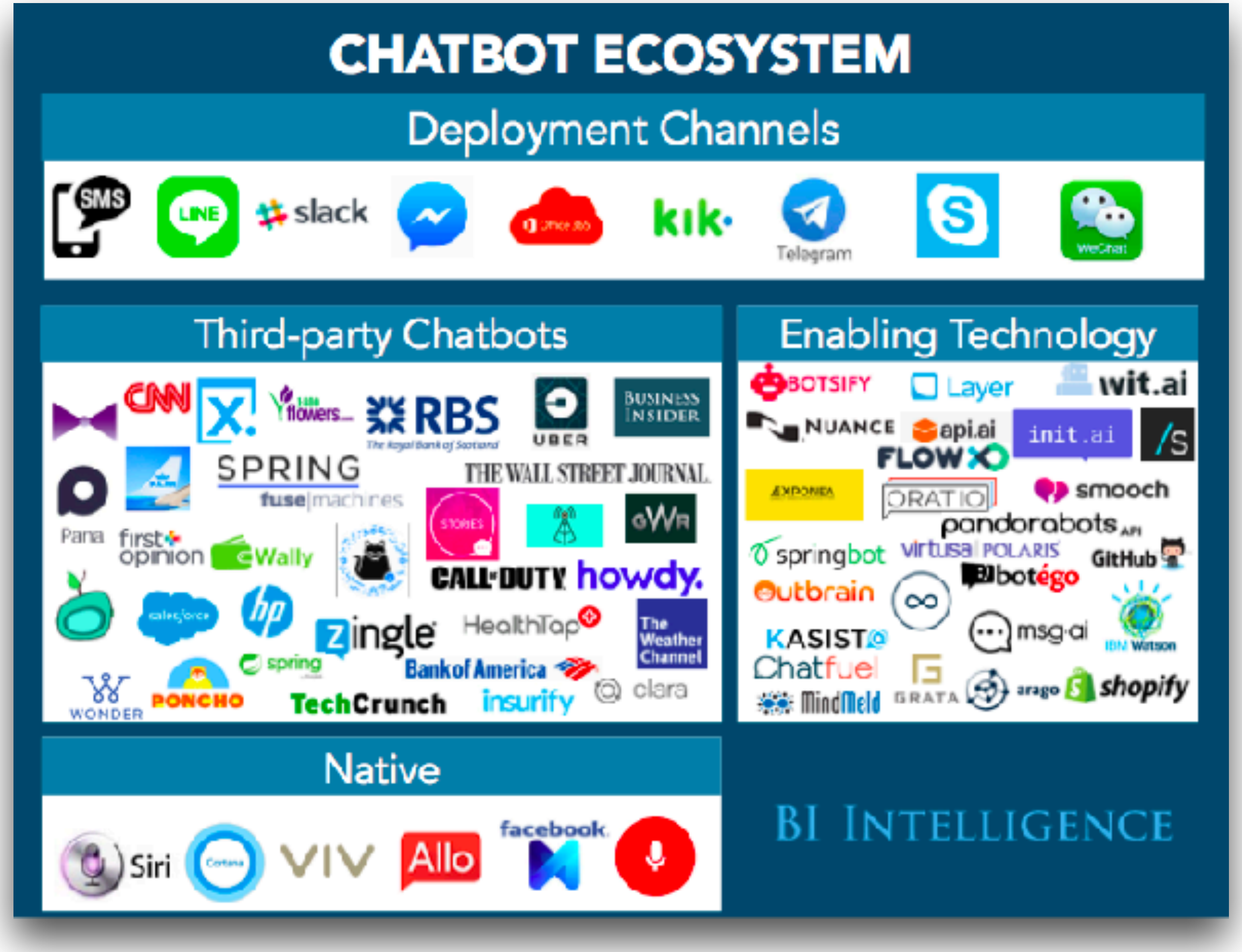
Status Quo


NOT SURE IF
HUMAN
OR A VERY CLEVER
CHATBOT
memegenerator.net

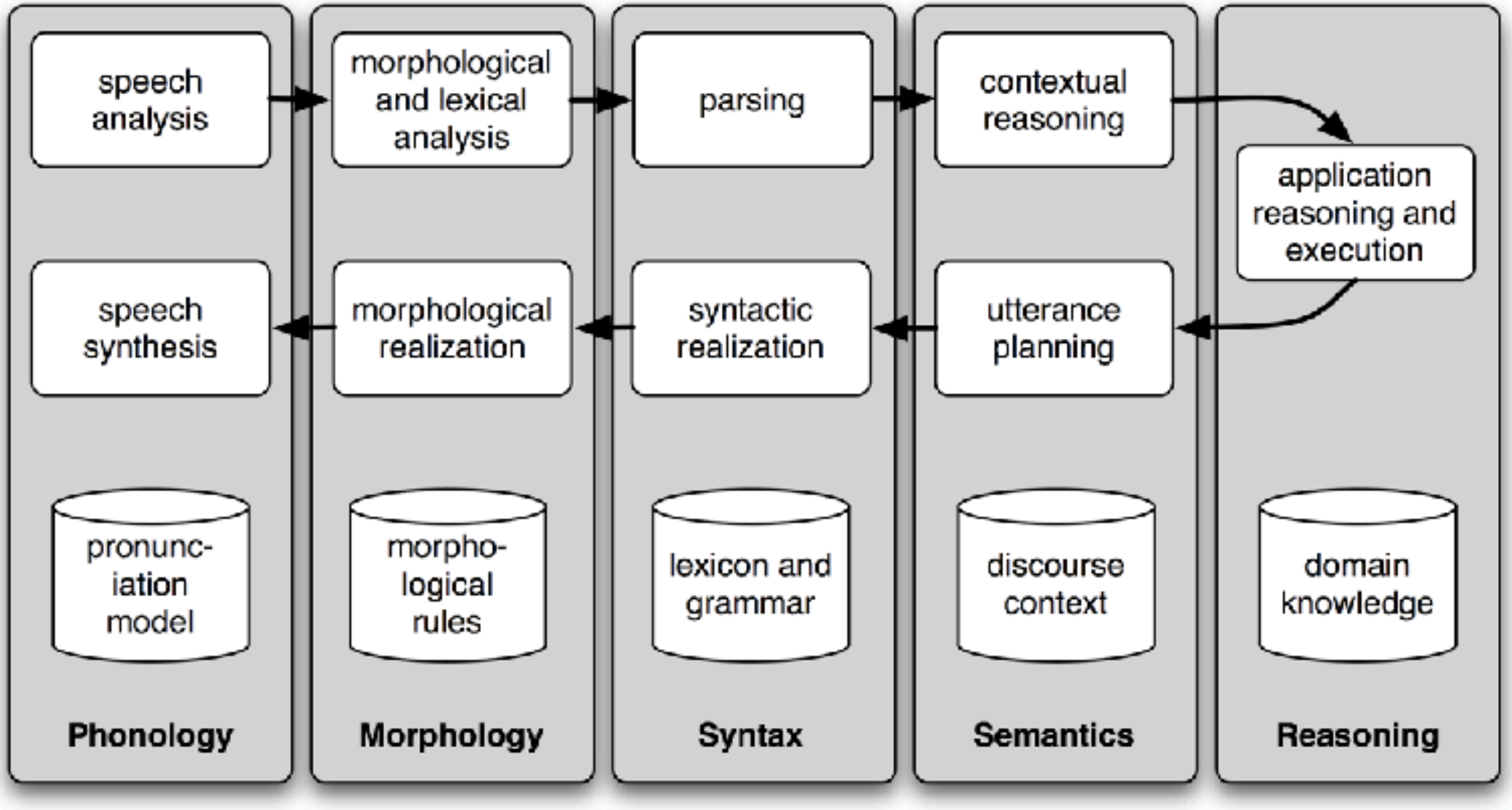
Status Quo

- Ever Increasing “Intelligence”
- Speech Recognition / Playback
- Increased Reach + Utility (via web, apps, voice, etc)
- Deep Platform Integration (Apple’s Siri, Google Assistant, Amazon Echo, etc)
- “Since launching the Messenger Platform at F8 in April, businesses and developers have built more than 33,000 bots to engage with people”, Facebook

Ecosystem


CHATBOT ECOSYSTEM
Deployment Channels
SMS
LINE
slack
kik·
Telegram
WeChat
Third-party Chatbots
CNN
X.
RBS
The Royal Bank of Scotland
UBER
BUSINESS INSIDER
SPRING
fuse|machines
THE WALL STREET JOURNAL.
Pana
first opinion
Wally
STORIES
CALL·DUTY
howdy.
salesforce
hp
zingle
HealthTap
The Weather Channel
spring
Bank of America
clara
WONDER
PONCHO
TechCrunch
insurify
Enabling Technology
BOTSIFY
Layer
wit.ai
NUANCE
api.ai
init.ai
FLOW XO
ORATIO
smooch
pandorabots
springbot
virtusa POLARIS
GitHub
Outbrain
botégo
KASISTO
msg·ai
IBM Watson
Chatfuel
GRATA
arago
shopify
MindMeld
Native
Siri
Cortana
VIV
Allo
facebook
BI INTELLIGENCE

An area of ongoing research



- Good news is a lot of the above is now abstracted…

When to use?

When to use?

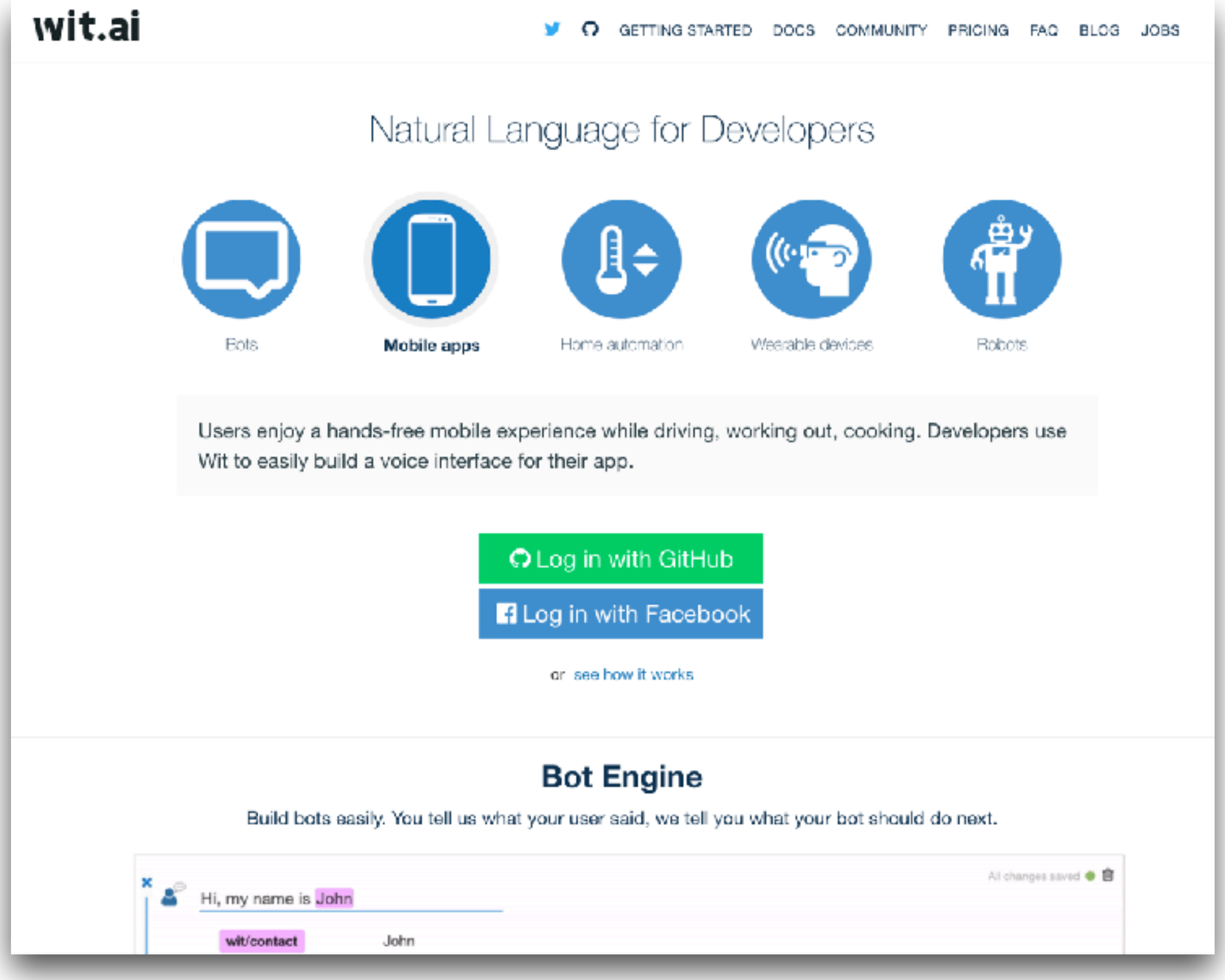
- As a compliment to your existing UI / UX
- Where would it add additional value?
  - Virtual Assistant
  - **Domain Expertise** (surfacing data / platform)
  - Customer Service
  - Sales and Business Development
  - Games and Toys

Major Platforms

Platforms (enabling)

- Amazon Lex (https://aws.amazon.com/lex)
- Bot Framework (https://dev.botframework.com/)
- Pandorabots (http://www.pandorabots.com/)
- Rebot (http://rebot.me/)
- Olabot (http://olabot.com/)
- API.ai (https://api.ai/)
- **Wit.ai** (https://wit.ai/)

Introducing Wit.ai



Natural Language for Developers

Users enjoy a hands-free mobile experience while driving, working out, cooking. Developers use Wit to easily build a voice interface for their app.

Bot Engine

Build bots easily. You tell us what your user said, we tell you what your bot should do next.

Hi, my name is John

wit/contact John

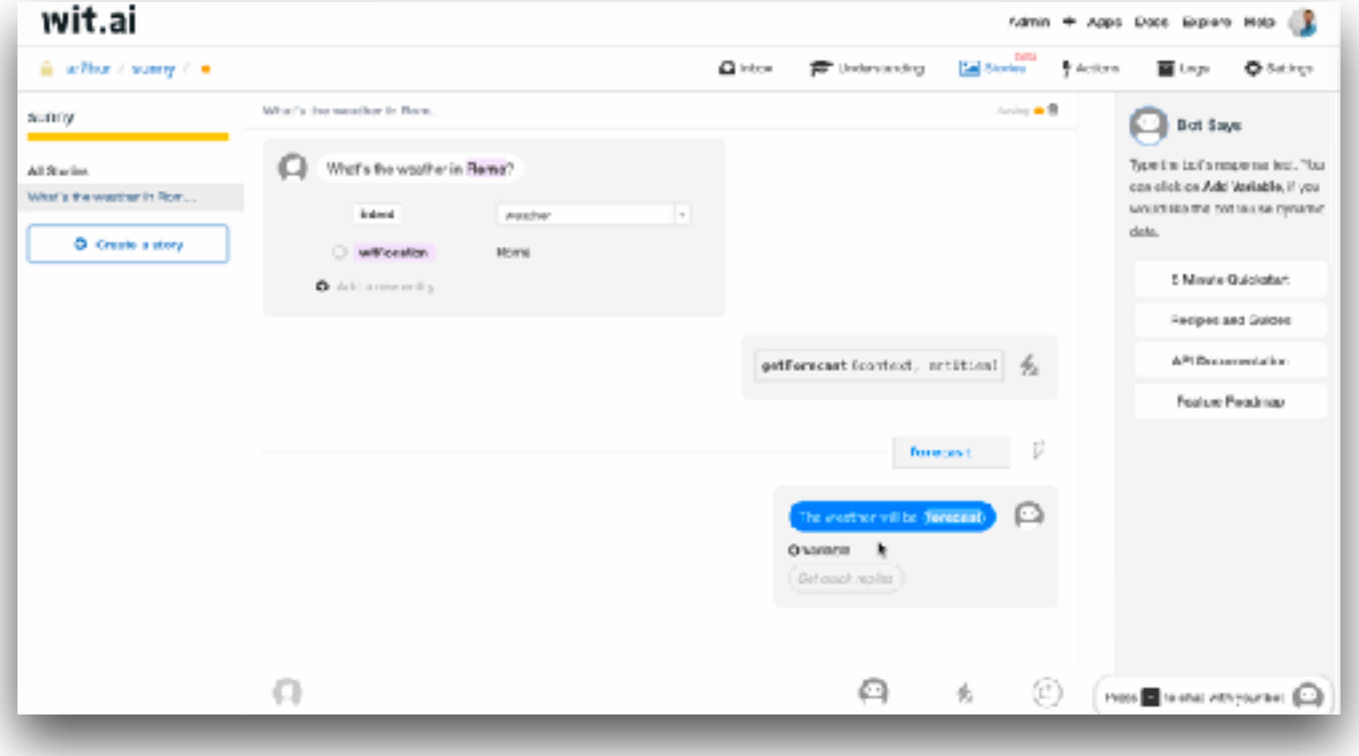
Background

- “Wit.ai makes it easy for developers to build applications and devices that you can talk or text to. Our vision is to empower developers with an open and extensible natural language platform.”
- Acquired by Facebook in 2015
- Backbone for Messenger Bots (although certainly not locked-in…yet)

Getting Started + “Hello World”

Stories

- Centered around the concepts of “stories”
- Wit.ai then handles the extraction of the intent which you then map to an entity



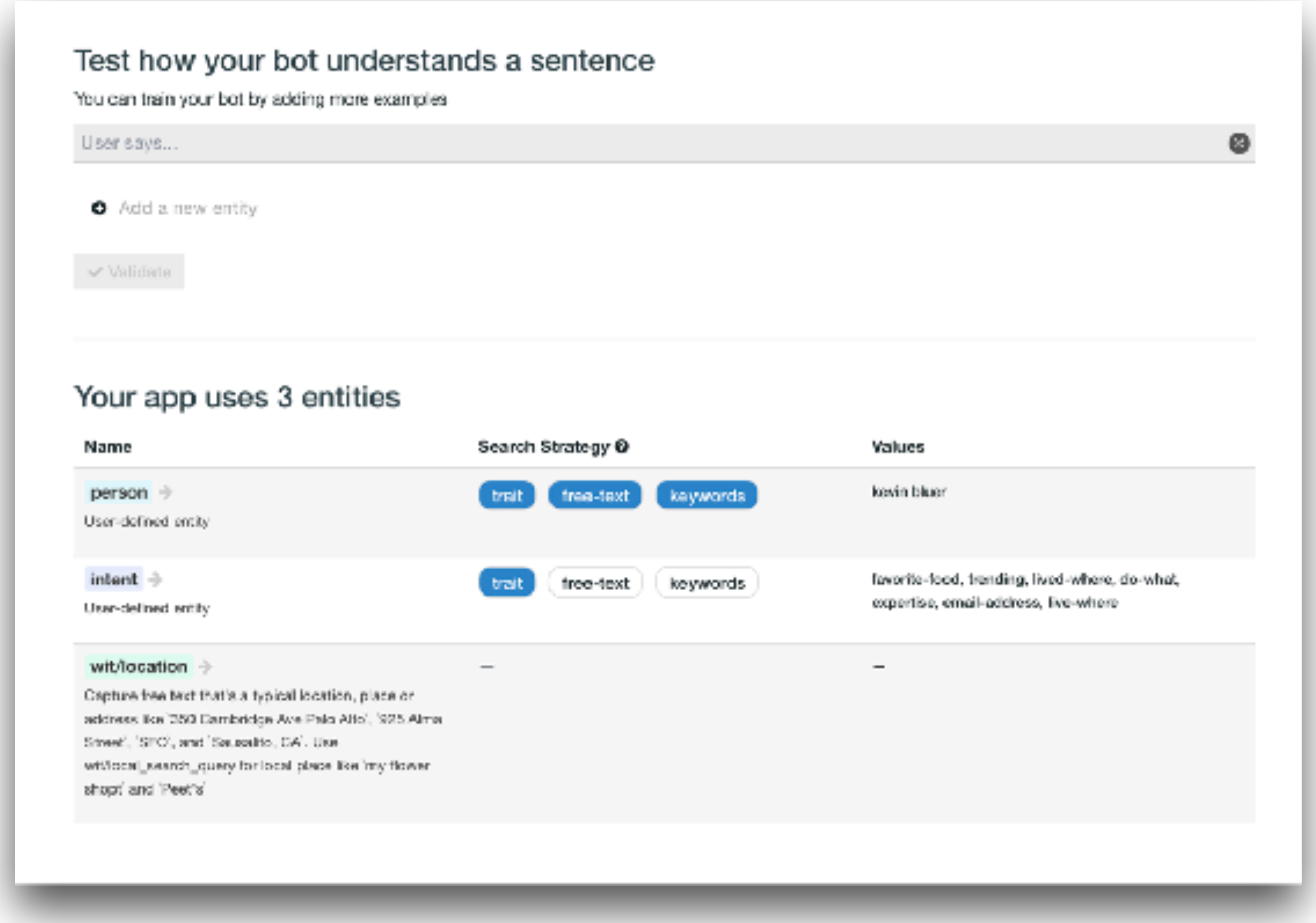
What's the weather in Rome?

getForecast (context, entities)

The weather will be {forecast}

Building Understanding

- You can then further train the bot with more examples



Test how your bot understands a sentence

You can train your bot by adding more examples

User says...

Add a new entity

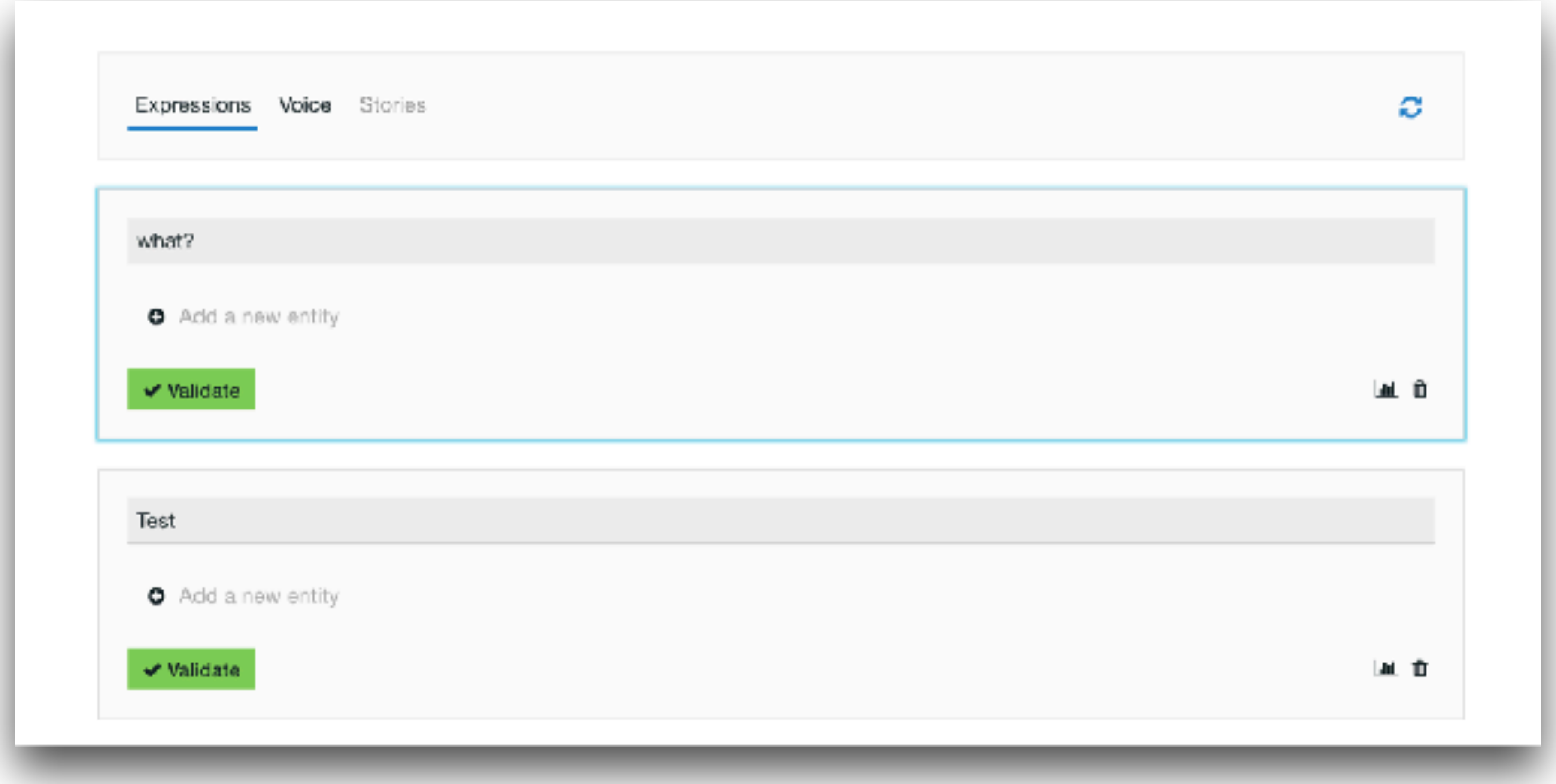
✓ Validate

Your app uses 3 entities

Name	Search Strategy	Values
person User-defined entity	trait free-text keywords	kevin bluer
intent User-defined entity	trait free-text keywords	favorite-food, trending, lived-where, do-what, expertise, email-address, live-where
wit/location Capture free text that's a typical location, place or address like '350 Cambridge Ave Palo Alto', '925 Alma Street', 'SFO', and 'Sausalito, CA'. Use wit/local_search_query for local place like 'my flower shop' and 'Peet's'	–	–

Inbox

- The Inbox shows expressions / audio snippets that allows for validation + mapping



“Hello World”

Your First App (Bot)

- Go to: https://wit.ai
- Sign-in Github or Facebook
- New Click “New App”
- Application Name
- Open or Private
- Create Your First Story
  - “What is your name?” (add an “name” intent)
  - Bot Sends > “My name is <your name>”
  - Click Save and wait while it “trains”
  - #fail

Testing + Training

- Go to Understanding and add some variations
  - “Name?”, “Who are you?”, etc
  - Back to stories and hopefully you see green
  - #success
- Test it Out (~)
- Add “What is your favorite food?”
  - “I love fish and chips”
- Keep training :)
- Also note Inbox + Logs

Middle Tier

Middle Tier

- WebTask :)
- WittyFiddle … demo this

Interfaces

Interfaces

- Messenger (or other existing chat platforms such as Line, Slack, Kik, WeChat, etc)
- **Web ***
- **App ***
- Voice

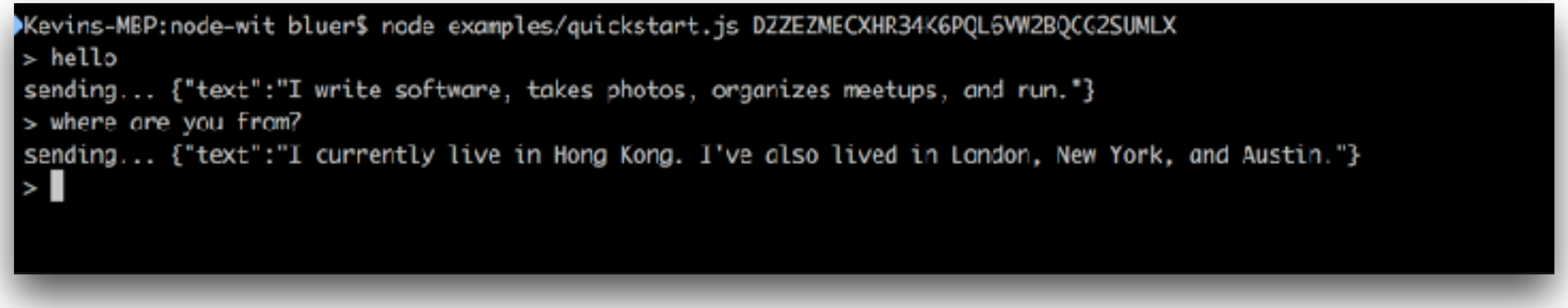
Available SDK’s

- Available for the following languages
  - **Node.js** (https://github.com/wit-ai/node-wit)
  - Python (https://github.com/wit-ai/pywit)
  - Ruby (https://github.com/wit-ai/wit-ruby)
  - And HTTP (https://wit.ai/docs/http/20160526)

Interfaces: Web

Hello World (node-wit)

- https://github.com/wit-ai/node-wit
- node examples/quickstart.js CUCTG6OEUUJQ7RM6DHTIRUYQFQLLBHTX

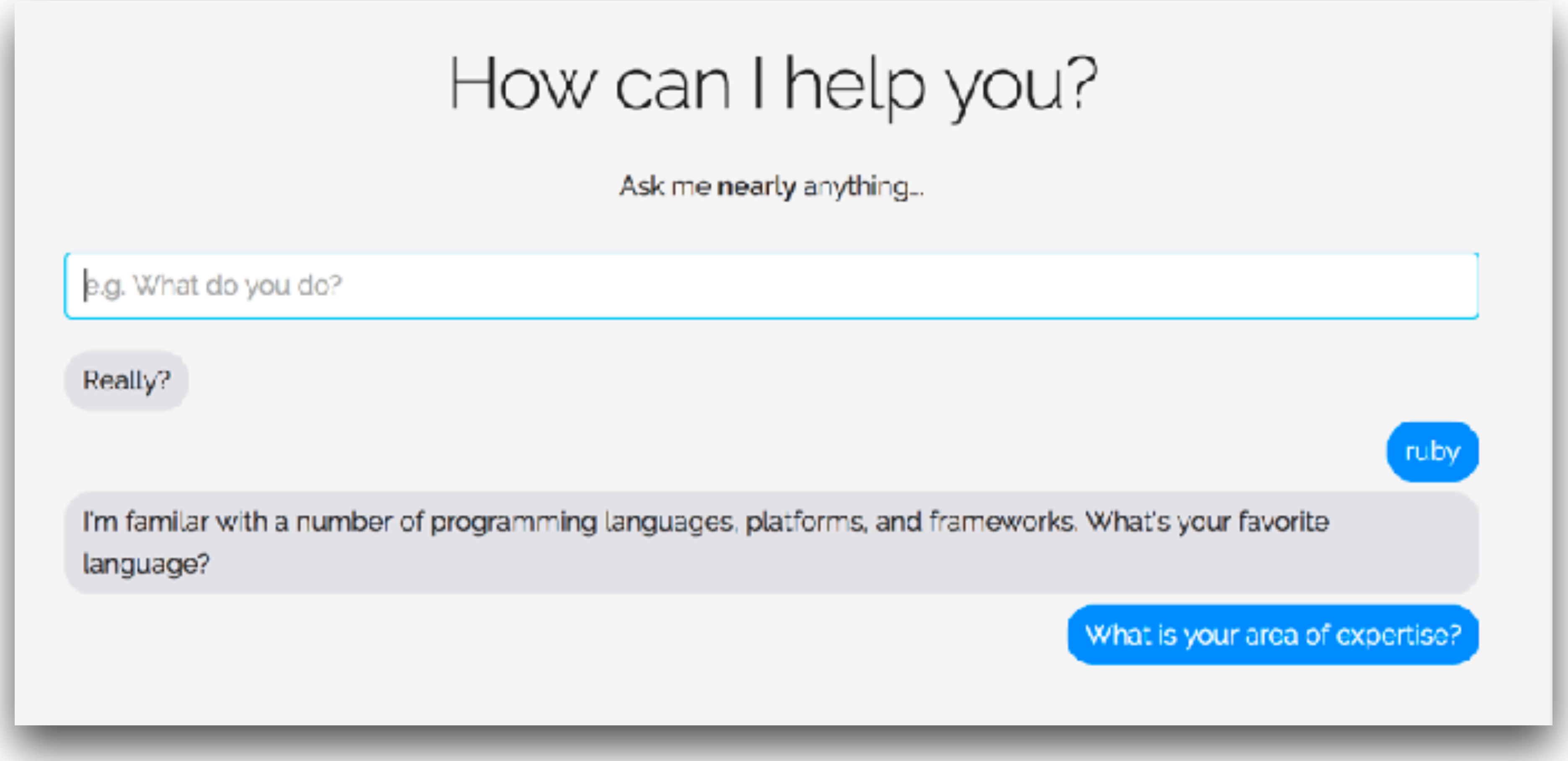


```
Kevins-MBP:node-wit bluer$ node examples/quickstart.js DZZEZMECXHR34K6PQL6VW2BQCG2SUMLX
> hello
sending... {"text":"I write software, takes photos, organizes meetups, and run."}
> where are you from?
sending... {"text":"I currently live in Hong Kong. I've also lived in London, New York, and Austin."}
> 
```

- Note the other examples in the quickstarts

Real-ish World

- Open kevin.bluer.com (note the “nearly”)



How can I help you?

Ask me **nearly** anything...

Really?

ruby

I'm familar with a number of programming languages, platforms, and frameworks. What's your favorite language?

What is your area of expertise?

How?

- Using **node-wit** + **WebTask** (note that other platforms such as Heroku would of course work too)
- Gives us the HTTP POST endpoint: https://wt-kevin-bluer_com-0.run.webtask.io/wit-ai/converse
- HTTP API directly?
  - Secrets may be visible in client-side code
  - No calls out to other API's / business logic

Adding a Backend

- Using **node-wit** + **WebTask** (note that other platforms such as Heroku would of course work too)
- Gives us the HTTP POST endpoint: https://wt-kevin-bluer_com-0.run.webtask.io/wit-ai/converse
- HTTP API directly?
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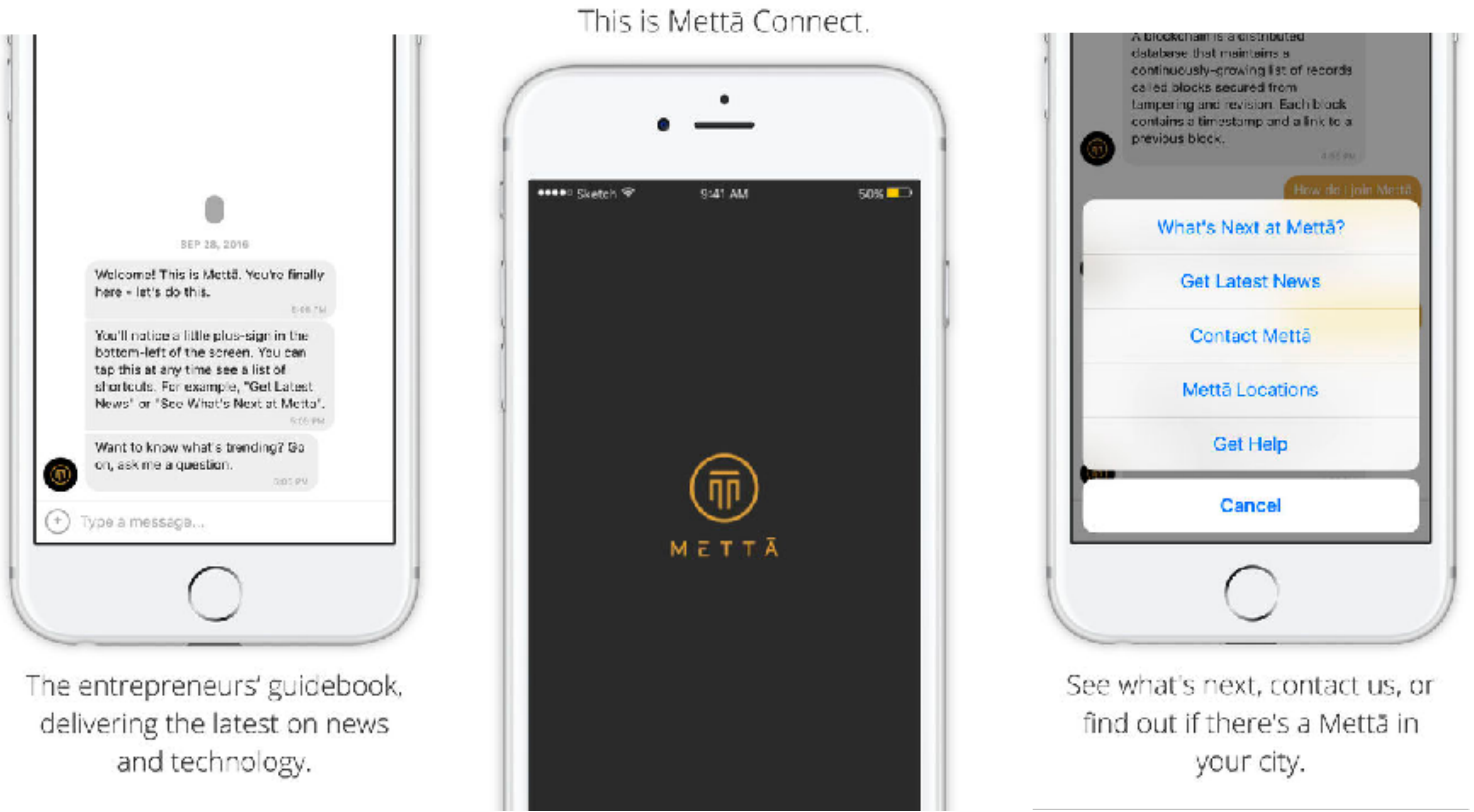
Quick Replies and …

- Quick replies allow you to provide user choices
- http://kevin.bluer.com and “what is your area of expertise” and “javascript”, “python”, or “ruby”
- These can then have individual responses (or jump to bookmarks within different stories)
- There’s a lot more sophistication that we’ll be saving for another session :)

Interfaces: App

Mettā Connect



This is Mettā Connect.

SEP 28, 2016

Welcome! This is Mettā. You're finally here - let's do this.

You'll notice a little plus-sign in the bottom-left of the screen. You can tap this at any time see a list of shortcuts. For example, "Get Latest News" or "See What's Next at Mettā".

Want to know what's trending? Go on, ask me a question.

The entrepreneurs' guidebook, delivering the latest on news and technology.

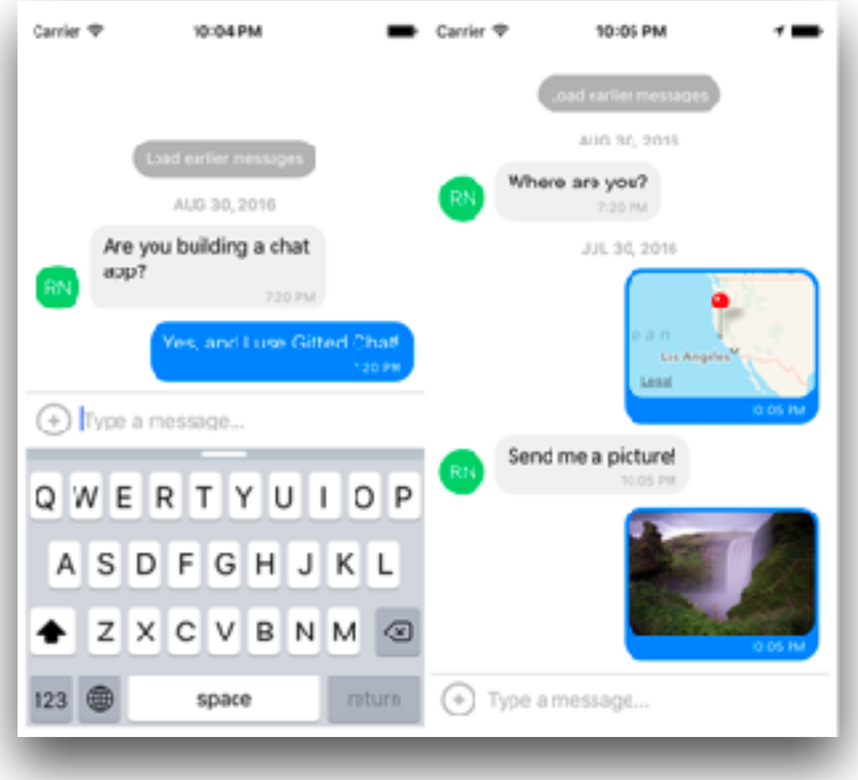
A blockchain is a distributed database that maintains a continuously-growing list of records called blocks secured from tampering and revision. Each block contains a timestamp and a link to a previous block.

How do I join Mettā

See what's next, contact us, or find out if there's a Mettā in your city.

Building Mettā Connect

- URL: https://itunes.apple.com/us/app/metta-connect/id1157360633?mt=8
- Leveraged the awesome GiftedChat



AUG 30, 2016

RN: Are you building a chat app? 7:20 PM

Yes, and I use Gifted Chat! 7:20 PM

AUG 30, 2016

RN: Where are you? 7:20 PM

JUL 30, 2016

10:05 PM

RN: Send me a picture! 10:05 PM

10:05 PM

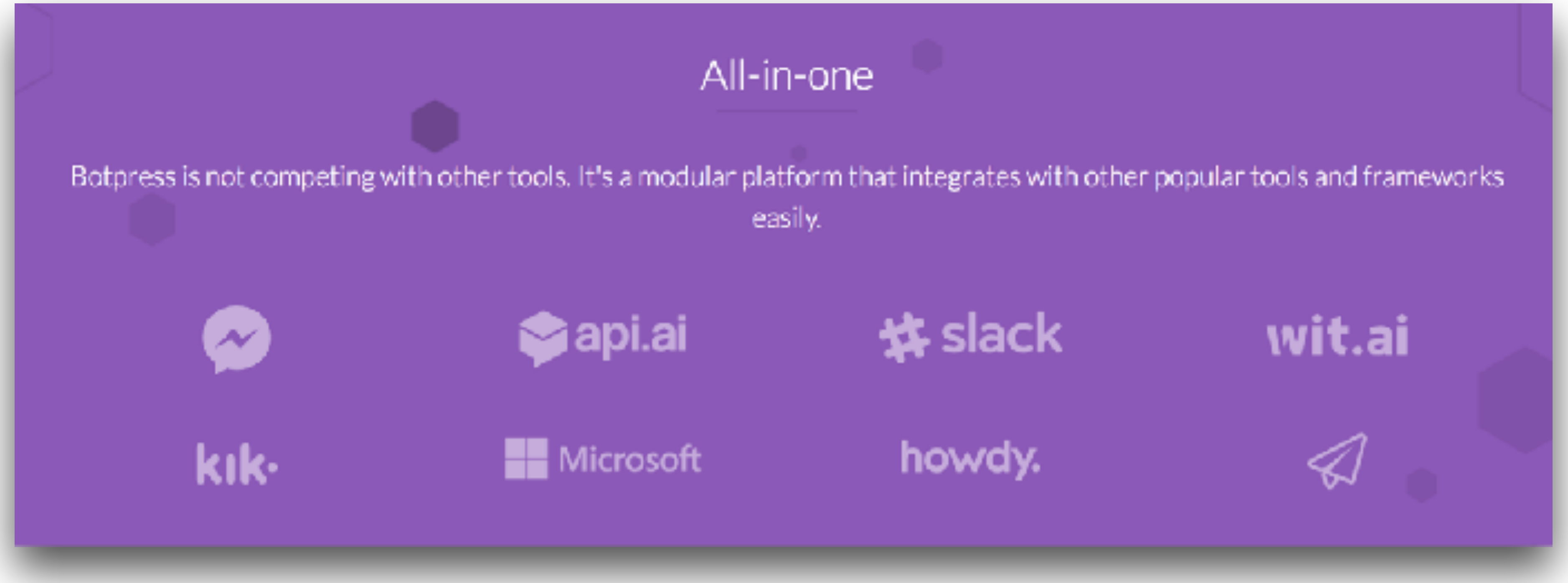
Related Tools

WittyFiddle

- Introducing WittyFiddle
- https://github.com/wit-ai/witty-fiddle
- “WittyFiddle is a sandbox that emulates a bot server, right inside your browser. You can connect Wit, start writing your actions immediately and test your bot right away. Once you’re done, you can either download the code, or deploy it to Heroku, and start testing on Messenger. You can then share and clone these fiddles with other developers!”

BotPress

- “The world's first CMS for bots. Easily create, manage and extend chatbots.”
- https://botpress.io



All-in-one

Botpress is not competing with other tools. It's a modular platform that integrates with other popular tools and frameworks easily.

Additional Resources

Food for Thought…

- https://medium.com/wk-ventures/11-f-k-ups-whilst-making-a-chatbot-10b71d837e2a?imm_mid=0e8e33&cmp=em-data-na-na-newsltr_ai_20161003#.fjfl1yjej
- https://chatbotsmagazine.com/cheat-sheet-all-facebook-chatbot-interactions-4b14e4e00178#.s3532379x

Q&A