Oracle Digital Assistant

AI in practice

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Agenda

1. Digital Assistant Overview
2. Digital Assistant Demo
3. Conversation Design
1. Digital Assistant Overview
Conversational Interfaces

The most natural interfaces is no interface
OOW Pepper
Byron Experience

1. Welcome to Byron QuickPay! 👋
   Share your location and let's find the restaurant you're in today 📍
   Thanks! So you're in Beak St
   I need your table number to get your bill, please type it below 📝
   Thanks, I'll get the bill for table 17

2. Thanks, I'll get the bill for table 17
   Here's the latest details for your bill
   Coke
   Superfood Salad
   And 3 more
   Paid with Card
   Total
   £21.35
   You're paying: £21.35 + £2.66 (12.5%) tip
   £21.35 + £2.66 (12.5%) tip
   Send a message...
WELL IT'S 1 FOR THE MONEY, 2 FOR THE SHOW, 3 TO GET READY
4 FOR SALES, 5 FOR CUSTOMER SERVICE, OR PRESS 6 TO HEAR THESE OPTIONS AGAIN

Hint: this is not a Conversational Interface
Why language can be difficult

JA SAM SAMO VAGA,
BUNDO
Why language can be difficult

I'm a huge metal fan.

Me too!
Why language can be difficult

Would you like to me do that for you?

Yes no problem
Conversation is the most natural form of communication for humans.

7 – 38 - 55
Natural Language Processing

Natural Language Processing (NLP)

The art of distilling **intents** and associated information (**entities**) from user messages provided in the user's native tongue.
Oracle Digital Assistant

Channel Configurator

Dialog Flow Execution

Simplified Visual Development

Target Multiple Clients

Connectivity to Backend Systems

Enterprise Data Integration

Conversational AI Engine

Machine Learning, Cognitive Services and context management

Machine Learning, Cognitive Services and context management
Conversational AI Platform

**DOMAINS**
- FINANCIAL
- UTILITIES
- RETAIL
- HCM
- CX
- ERP

**INSIGHTS**
- INTENTS
- PATHING
- OPERATIONAL
- PERFORMANCE
- A/B

**TOOLING**
- INTENT DESIGNER
- DIALOG FLOW
- LIVE AGENT PLUGIN
- DATA VALIDATOR
- QNA BUILDER
- INSTANT APP BUILDER

**MACHINE LEARNING SERVICES**
- **NATURAL LANGUAGE UNDERSTANDING (NLU)**
  - Intent Detection
  - Entity Extraction
  - Learning / Prediction
  - Sentiment

- **COGNITIVE SERVICES**
  - Image Recognition
  - Speech Analysis
  - Multi Language
  - Video Processing

- **DIALOG & CONTEXT**
  - Dialog
  - QnA
  - Auto Complete
  - Transcript Analyzer

- **KNOWLEDGE SERVICES**
  - Knowledge Graph
  - Semantic model
  - Behavior
  - Recommendation

**ENTERPRISE**
- CUSTOM COMPONENTS
- USER MANAGEMENT
- LICE CYCLE MANAGEMENT
- SECURITY
- POLICY MANAGEMENT

**INTEGRATION**
- REST
- Oracle PaaS

**APIs**
- NLU API
- ML API
- Conversational API
- Webhook API
Understanding the Terminology of Chatbots

• Intents
• Utterances
• Entities
• Machine Learning/NLP
• Dialog Flow
“How much money do I have in my checking account?”
“How much money do I have in my checking account?”
“How much money do I have in my checking account?”
“How much money do I have in my checking account?”
2. Digital Assistant Demo
Digital Assistant Architecture

Node.js server
Custom Component

Admin
Oracle Digital Assistant
Bot
Skills
Flows
ML Conversation Engine

User
HTTPS
Facebook Messenger

PUBLIC INTERNET
ORACLE CLOUD
INTERNET

HNB Tečaj

REST
Digital Assistant Demo
Two Training Models in Intelligent Bots

**Trainer Ht (Sakura)**
- Fast & best suited for small set of utterances
- Good for new development
- Rules based

**Trainer Tm (Tamao)**
- Thrives on more and more data
- Higher accuracy (especially data outside your utterances
- Already training on “knowledge” of English language
- Therefore better resolution of colloquialism, slang, etc.
3. Conversation Design
Conversational design

• Business goals
• User personas
• User journey
• Channels
• Dialog design
• Backends
• Sample entities
Consider your bot personality

Your voice IS your brand
Consider your bot personality

- We have in-built expectation that a conversation should be engaging
- Decide on your bot persona
  - Formal? Hip? Reflection of your target audience?
- Give it a name and avatar, but not necessarily human
- Give a positive and welcoming introduction
- The voice and tone of your bot is your brand
- Words carry emotions
  - “You neglected to supply” vs “If you could tell us..”
Offer guidance & help
Including human help
Offer guidance and help

- Not always clear how to start a conversation
- The bot should give guidance on what services it can support
- Use “quick replies” to indicate most common options
- Remind & offer some sort of “help” or “reset” option
- Offer human hand off as required
Handle smalltalk

It’s part of a conversation
Handle smalltalk

• About 40% of conversations with a bot is “small talk”
• Prepare to handle smalltalk
  – Generically or specifically
  – Beware of controversial jokes or news
• A chance to manage the conversation BACK to the known use cases
  – “Ok, so that’s the best joke I’ve got, how about I get back to helping with your order”
• Every step in the conversation is a chance to reinforce the bot personality
Context is king

Ambiguous meaning
Context is king

• Context is implied in human conversation, we need to explicitly manage context in bots

• Meaning can change based on context
  – “Piece of cake”
  – “Who is his manager”
  – “What about Friday”
  – “Get me a taxi home”
  – “and 2019”
Limit the surface area for errors
Help the user make “right” decisions
Limit the surface area for errors

- Use quick replies, cards and carousels to select
  - Easier to read
  - Quicker and more accurate to select
- Guide the conversation back to the happy path
- Avoid open ended questions
  - “Do you want anything else”
  - “Do you want to order drinks, dips or cookies?”
- Ask before committing a transaction
  - Verbs and nouns instead of simple Yes/No
Fail gracefully
Or at least try your best
Fail gracefully

- Fail gracefully
  - Don’t blame the user
  - An opportunity to re-enforce the bot personality

- Be careful with language
  - “That order doesn’t exist” vs “I couldn’t find order”

- Give the user intelligent options to get back on track
  - Show the nearest resolving intents
  - Give an option to reset the conversation
  - Human agent hand-off
Handle the things you know you don’t know

More precisely handle failure
Handle the things you know you don’t know

- Create intents for the use cases you know you can’t handle
  - Your bot likely handles a subset of business functions
  - Gracefully handle the business function NOT supported by the bot
- Allows the bot to more precisely handle failure
  - User knows input was understood
Test, fix, repeat

Good data comes from testing
Test, fix, repeat

- NLP is only as good as the data you train it with
- Real data comes from real users
- 80/20 split training/test data
- Use batch testing
- Use analytics and insight
- Test, fix, repeat
Where to find out more

oracle.com/digital-assistant

cloud.oracle.com/digital-assistant

blogs.oracle.com/mobile

Social

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https://www.linkedin.com/groups/6707013/
https://www.youtube.com/oraclemobileplatform