ΤΜΗΜΑ ΠΛΗΡΟΦΟΡΙΚΗΣ ቲ ΤΗΛΕΠΙΚΟΙΝΩΝΙΩΝ

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
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ΙΕΛ
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ATHENA
Research & Innovation
Information Technologies

M913 Dialogue Systems

Final Project: UniPal

University **Pal** – Academic Assistant

Kylafi Christina-Theano (Theatina) – LT1200012

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Introduction

Project Description

The task of the project at hand was to build a dialogue system (chatbot) focused on a specific domain, able to support functions (scenarios) with the use of domain-specific intents, slots and custom actions (web crawling, information extraction, text processing, etc.).

In our case, **UniPal** [1] – the chatbot that was built is an **academic assistant**, able to fetch various types of information from the University (National and Kapodistrian University of Athens) Department's (Department of Informatics & Telecommunications) website (web crawling using custom actions), perform processing functions on the acquired data and then present them in a user-friendly, simple and comprehensible way. Analysis on the system's specifications is performed in detail in the sections that follow.

File Structure

Core system files:

- config.yml :
- domain.yml :
- stories.yml :
- test_UniPal_stories.yml :
- nlu.yml :
- rules.yml :
- actions.py :

Other files:

- scripts/ :
- slack/ :
- output files/ :
- notes/ :
- results/ :

[1] GitHub Repository

System Configuration

Requirements

System Specifications

Features

Supported Scenarios (stories)

Custom Actions

NLU Pipeline

Intent Recognition

Feature Extraction

Dialogue Policy

DIET

Evaluation

The final system versions (parameter/configuration experiments) were evaluated based on both system tests (using test stories) and human evaluation (questionnaire after user-bot interaction/scenarios). There is no standardized way of measuring the quality of such virtual agents, therefore we have established our own standards specifically for this project, focusing on the system's task completion efficiency domain-specifically.

Keywords: Effectiveness, user satisfaction, functional simplicity, ambiguity, flow,

(https://www.researchgate.net/publication/348014085_Trends_Methods_in_Chatbot_Evaluation)

Test Stories

(create test stories and check results for different dialogue policies/configurations)

test_UniPal_stories.yml

1. Latest University Announcements
2. Classes Timetable
3. Exams Timetable
4. Contact / Location / Access information
5. University's Staff information
6. Psychological Support information

Human Evaluation - 1st Phase

Human Evaluation - 2nd Phase

Results

Conclusions

Future Work

Notes

1. Action uni class schedule: working well (due to different .xls format): 19-20, 20-21, 21-22

   Fix: add more if's to include them

2. Google calendar add reminders for exam/class
3. More stories – interactively to boost confidence and remove ambiguity

Notes

1. Intents: request exam/class timetable + inform programme/period/year/semester (the system is confused between request_exam_schedule and inform_programme – normal outcome of the stories I feed the system! – future work to correct it)

References

(Articles & Papers the project at hand was based on)

1. Trends & Methods in Chatbot Evaluation
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4. Medicare Locator
5. Connect your chatbot with google calendar | The Rasa Blog | Rasa
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7. NLU Training Data
8. SimGus/Chatette: A powerful dataset generator for Rasa NLU, inspired by Chatito
9. Chatbots Using Python and Rasa - GeeksforGeeks
10. How to create a FAQ Chatbot with Rasa?
11. Introducing DIET: state-of-the-art architecture that outperforms fine-tuning BERT and is 6X faster to train | The Rasa Blog | Rasa
12. Model Configuration
13. Testing Your Assistant