CS3606 Advanced Topics in Business Computing
Topic 3: Conversational Interfaces
Seminar 2021/22

Department of Computer Science

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INTRODUCTION

The main purpose of each seminar in the module is to give you an opportunity to further explore the topic covered in the corresponding lecture through a structured session that will facilitate the exploration and exchange of the main ideas and issues in the topic. The seminar activities are directly related to the way that the topics will be covered in the examination, so preparing for the seminars, and engaging fully with them, will be an important first phase in your exam preparation.

BEFORE THE SEMINAR

You must prepare for the seminar; it will only be effective if you do. You have a professional obligation to yourself and your colleagues to prepare. In order to appropriately prepare for the seminar, you should spend around 16 hours undertaking the following tasks:

- Review the relevant lecture (Panopto recording, slides);
- Undertake research that you need to in order to clarify any issues that you do not understand;
- Read the core references given on BBL and at the bottom of the seminar sheet;
- Study the provided seminar material;
- Prepare answers to the starter questions given in this seminar sheet.

We will discuss your answers in your seminar group, giving you the chance to show what you have learned, present and argue your position, listen to others and appraise their arguments, ask questions, and reflect on how your understanding has changed as a result of the activity. As well as being important for developing your understanding of a topic in the module, this activity will give you a chance to practise core skills of information gathering, critical analysis of data/evidence, formulation and justification of argument, presenting and communicating ideas to others, listening, and reflecting on your learning.

ATTENDANCE AND PARTICIPATION

It is in your interest to prepare for, attend and participate in the seminar, as it will help you to prepare for the examination. You are reminded that attendance and participation in the seminars will be monitored, and if you do not participate in enough sessions, you will not be able to pass the module. Please refer to the study guide for more information.

ABOUT CONVERSATIONAL INTERFACES

This seminar session covers one of the two Business Computing only topics: Conversational Interfaces (CIs). In this seminar, we will consider key issues covered in the lecture and work with two dialogue extracts to develop your understanding of some of the core conceptual issues in developing CIs. This seminar activity is directly related to the way that the topic will be covered in the examination, so preparing for it, and engaging fully with it, will be a critical first phase in your exam preparation.

The seminar will be a team-based learning activity which will have three parts:

(i)   a Poll Everywhere quiz, done individually then in teams, after which we will discuss the answers to clarify any issues and to address any questions that you have about the material that is covered;

(ii)   the analysis of dialogue extract A (below) which is concerned with frame-based dialogues;

(iii)   the analysis of dialogue extract B (below) which will consider issues in the design of more complex, general purpose dialogue systems.

As well as being important for developing your understanding of the topic, the seminar activity will give you a chance to practice core skills of information gathering, critical analysis of data/evidence, formulation and justification of argument, presenting and communicating ideas to others, listening, and reflecting on your learning.

STARTER QUESTIONS

The starter questions relate to two dialogue extracts, given below.

Dialogue Extract A

User: Hey. I want to book theatre tickets for a West End musical straight after work.

System: I suggest *Cats.*

User: I've seen that already.

System: Have you seen *Earl de Grey*? It is on at the Lyric Theatre.

User: That sounds good. Brian will be coming, too.

System: Do you want stalls or circle?

User: The best you can get.

System: I've booked two tickets in the stalls for this evening performance. It starts at 8 p.m.

Review the Panopto recording of the lecture and apply what you have learned about frame-based dialogues to dialogue extract A to answer the following questions, which will be discussed in the second part of the seminar.

(i)   Identify the domains and the intents in dialogue extract A;

(ii)   Identify the slots and the values in dialogue extract A.

Dialogue Extract B

1. *Bob*: Book a table at Zingari's after my last meeting, and let Tom and Brian know to meet me there.

2. *PA*: Sorry, but there aren't any tables open until 9 p.m. Would you like me to find you another Italian restaurant in the area at about 6:30 p.m.?

3. *Bob*: Can you find a table at a restaurant with a good wine list?

4. *PA*: Barbacco has an opening. It's in the Financial District, but the travel time is about the same.

5. *Bob*: OK. Sounds good.

Read the Ortiz, Jr. (2014) source (details below) and make sure you understand the concepts within it that will allow you to address the following questions in relation to dialogue extract B (which is taken from Ortiz, Jr.'s paper). This set of questions will be discussed in the third part of the seminar:

(i) analyse the dialogue, identifying and extracting key words/concepts and grouping them into actions, entities, types and properties (Note: it is not important to use DRT to represent your classification. The aim here is to think about what is represented in the dialogue and how you can logically structure the information so that dialogues can be 'understood' and managed).

(iii) give an example of an indirect speech act and an example of any of Grice's maxims from the dialogue.

(iv) give examples of the concepts of inference and assumption being made by the system in the dialogue excerpt?

REFERENCES/READINGS

Read the following sources as background to the area. As noted above, the Ortiz, Jr. (2014) paper will be explicitly used in the seminar, so you should ensure that you have a copy of to refer to during the seminar. The Ortiz, Jr. (2014) and Zue and Glass (2000) papers are fully accessible only from within the Brunel University London network.

Badiu, R. and Laubheimer, P. (2018). Intelligent Assistants Have Poor Usability: A User Study of Alexa, Google Assistant, and Siri. Available at: https://www.nngroup.com/articles/intelligent-assistant-usability/. Accessed 18 February 2022).

Brownlee, J. (2016). Conversational Interfaces, Explained. Available at: https://www.fastcodesign.com/3058546/conversational-interfaces-explained (Accessed 18 February 2022).

Mielke, C. (2016). Conversational Interfaces: Where Are We Today? Where Are We Heading? *Smashing Magazine*. Available at: https://www.smashingmagazine.com/2016/07/conversational-interfaces-where-are-we-today-where-are-we-heading/ (Accessed 18 February 2022).

Ortiz, Jr., C. L. (2014). The Road to Natural Conversational Speech Interfaces. *IEEE Internet Computing*, 18(2), 74-78. Available at: http://ieeexplore.ieee.org/document/6777502/#full-text-section (Accessed 18 February 2022).

Zue, V. W. and Glass, J. R. (2000). Conversational Interfaces: Advances and Challenges. In Proceedings of the IEEE, 88(8): 1166-1180. Available at: http://ieeexplore.ieee.org/document/880078/ (Accessed 18 February 2022).