

MACQUARIE UNIVERSITY DEPARTMENT OF COMPUTING

TECH858 First Half 2002

Building Spoken Language Dialog Systems Using VoiceXML

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1 Staff

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2 Classes

TECH858 is a half-unit, with classes during the first six weeks of semester only.

Lectures: Tuesdays 6:00pm–9:00pm, E6A131

Lab Sessions: Tuesdays 9:00pm–10:00pm, E6A114

Consultation: By appointment.

3 Credit

This unit is worth 2 postgraduate credit points.

4 Unit Description

4.1 Overview

You may already have interacted with a spoken language dialog system: in Sydney, for example, you may have used one to book a taxi, to get a green slip quote, to trade shares, or to request a number from Telstra's directory assistance.

This unit provides an introduction to and overview of the field of spoken language dialog systems, widely regarded as the interface of the future. The unit covers both the theoretical background required in order to understand how these systems work and where the difficult issues and challenges are, and practical hands-on experience working with a number of voice recognition tools, with a particular focus on VoiceXML, a language that allows relatively easy construction of applications that together form what has been called the Voice Web. Along the way, we'll explore how dialogs with machines differ from dialogs with humans, and consider to what extent that gap might be bridged in the future.

4.2 Structure and Coverage

Session 1: An Introduction to Dialog Systems

Logistics; what the unit is about; what's inside a dialog system; Natural Language Processing—the broader context.

Session 2: Speech Recognition and the Makings of Good Dialog

What is a dialog all about? What makes a good dialog? The basics of speech recognition.

Session 3: Introducing VoiceXML

The commercial space; voice gateways; the essence of VoiceXML; dialog design.

Session 4: Grammars and Mixed Initiative Dialogs

Inside VoiceXML; mixed initiative dialogs; developing grammars.

Session 5: Handling Complex Dialog Phenomena

Handling anaphora; using context; recognising the user's intentions.

Session 6: The Future of Voice Interfaces

Multimodality; SALT; WAP and other related technologies.

5 Assessment

TECH858 assessment will be based on a VoiceXML programming assignment (40%) and a final examination (60%). Progress on the programming assignment will be paced via the lab sessions, with students expected to progress their application development week by week.

6 Resources: Web Site, Text Books and References

The unit home page is at <http://www.comp.mq.edu.au/courses/tech858>. All unit materials will be available via the unit home page.

A CD containing the relevant dialog system development tools will be made available at the beginning of the unit so that you can install the lab software at home.

Note: you will need to purchase a microphone headset to use in the labs. These are available from computer stores for between \$10 and \$20. You must bring your headset to each session, including the first session.

There are a number of books available on VoiceXML, but since these are hard to find locally, their purchase is not compulsory; see the web site for details. The provided course materials, in combination with attendance at the lectures, should be sufficient for satisfactory completion of the unit.

7 Code of Behaviour

The University Council has approved a set of rules governing access to and the use of the University's computing facilities (see the Macquarie University Handbook 2002). All users are bound by these rules. Students who break them may be suspended from using the systems and, in serious cases, may be referred to the Discipline Committee of the University.

The rules set out the rights and, conversely, the responsibilities of all users of the facilities. In particular, they are based on the principle that the files in an account are the owner's personal property and should be treated as such. Unauthorised use of someone else's account is a serious offence, whether it be copying their files (stealing), or changing them (damage), or merely gaining access to them (trespass).

8 Cheating (Plagiarism)

This unit is part of the Post-graduate Professional Development Program and applies the plagiarism standards of that program.

In working on assignments, you may collaborate on broad issues of interpretation and understanding and may discuss general approaches to a solution. However, conversion to a specific solution or to program code must be your own work. When working together, the general rule is therefore that you may “discuss but not write”. To put it another way, collaboration should stop when pen hits paper (or equivalently, when finger hits key). Copying another person’s work is cheating and will result in negative marks for all those involved; in extreme cases, those found guilty of plagiarism will be suspended from the unit.

Encouraging or assisting another person to commit plagiarism is a form of cheating (improper collusion) and may attract the same penalties. You must keep any copies of your own assignment work secure, so that others do not have an opportunity to copy or steal them. If another person copies your assignment without your knowledge you may still suffer the same penalty – be careful!

9 Special Consideration

If you have experienced circumstances that you believe have adversely affected your performance in the unit, then you may apply for Special Consideration as described in the Macquarie University Handbook 2002. You may apply for Special Consideration for assignments as well as for the final examination.

9.1 Special Consideration for the Final Examination

To be eligible for Special Consideration for the final examination you must have:

- satisfactorily completed all compulsory requirements of the unit (in particular, all homework and project work); *and*
- attached a completed Professional Authority Form to your request; *and*
- provided valid documentary evidence to substantiate your circumstances; *and*
- submitted your request in accordance with the University’s regulations (see the material at <http://www.registrar.mq.edu.au/index.html>).

If you do not satisfy **all** of these criteria, you cannot expect your request to be considered.

Where, in the view of the Division, you are to be granted Special Consideration for the final examination, you should note the following:

- You will be required to sit a Special Examination.
- Your performance in the final examination, if you sat it, will not be considered.
- Your final grade will be based on your assignment marks and your performance in the Special Examination.
- Failure to sit for the Special Examination will result in a grade of FA being recorded.

9.2 Process

When you request Special Consideration, you are telling us that your performance has not reflected your true ability. In advising us of these circumstances, you must ensure that you are readily available to be contacted *and* you must hold yourself

available to sit for the Special Examination at short notice on the date and time we set.

9.3 Purpose

The purpose of any special examination is to resolve the temporary difficulty caused by your illness or misadventure, and is not to give you an advantage over other students by allowing you extra time to study. We will, therefore, hold the special examination as soon as possible, and in determining your grade, we will take into account the possibility of extra study time available to you.

9.4 Further Information

The University regulations regarding Assessment are detailed in the Macquarie University Calendar 2001. More specific information and the required forms are available at: <http://www.registrar.mq.edu.au/Forms/APSCons.pdf>.

We expect you to read, understand and comply with these regulations.