

Service Oriented Architecture

Welcome to SIT737

Lecture 1

Dr. Alessio Bonti

A grayscale photograph of a person's hand pointing their index finger towards a large, white, stylized cloud icon. The background is dark.

# Welcome To Your First SIT737 class

Get comfortable, introduce yourself to the person next to you

# Welcome!



My name is **Alessio Bonti**  
I was **sitting in the same chair** you  
are now sitting until 2007.  
I completed my **PhD** at Deakin in  
2012

I worked for **IBM Research**  
Australia between 2012 and 2018

Things I like  
**Cloud Application Design**  
**Blockchain**  
**Create Great User Experiences**

# What will you learn?

1

## SOA Core Concepts

### Foundations and constituent technologies

*Service orientation, virtualisation, utility computing, Web 2.0 ...*

### SOA and Cloud computing characteristics

*Elastic scalability, ubiquity, pay-as-you-go, operational vs capital costs ...*

### Cloud computing reference model

*IaaS, PaaS, SaaS, XaaS, private cloud, public cloud, hybrid cloud ...*



# What will you learn?

2

## SOA Driven Development

### Application development

*Application design and architecture, service composition ...*

### Architecture patterns

*Stateless application, failure management, queue, ...*

### Development operations (DevOps) enablement

*Development toolchains, continuous delivery, build pipelines, ...*



# What will you learn?

3

## SOA and the IT industry

### Offerings and market segmentation

*Infrastructure, platform, software as a service and other solutions*

### Cloud computing major players

*Short overview of the different solutions available and markets*

### Uses of SOA

*Practical applications in different domains*



You  
Will

# At the **end** of the course ....

## **Understand what is SOA**

### **Be able to articulate its distinctive features**

*What defines SOA? ...what makes it different?*

### **Understand different SOA strategies**

*Which type of strategies are available? .. how do they differ?*

### **Identify the right solution for a given business case**

*What specific offering solves what problem?*



You  
Will

# At the **end** of the course ....

## **Develop SOA based applications**

### **Define the architecture of cloud applications**

*Define an application in terms of components and behaviour.*

### **Use service composition to build applications**

*Express applications and its features through service composition.*

### **Understand and apply Service architecture patterns**

*Know the key patterns, and which problem they address.*



# How is this course structured?

**Lectures**    **Introduction and discussion of the course topics**

*The theory and the key concepts are introduced and discussed with the students through questions and answers sessions.*

**Labs**    **Hands-on the technology and practice sessions**

*A closer and more detailed look to the technology introduced during the lectures is given and exercises and tutorial will be the primary mean to get practical skills.*

# How will you be assessed?

Mark	Breakdown
20%	<b>Assignment 1</b> - <i>Team based report</i>
20%	<b>Assignment 2</b> - <i>Team based, design and implement cloud application</i>
60%	<b>Final exam</b> - <i>2 hours, closed book, questions on topics discussed during the course</i>

# Timetable and Attendance

**Attendance is  
compulsory**

**It will be recorded**

Type/Stream	Day	Start/ End	Campus	Location	Teaching weeks
Class 1 01	Fri	13:00 - 13:50	Burwood	LT 7 (Y2.04)	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11
Practical 1 01	Tue	11:00 - 12:50	Burwood	T1.06	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11
Practical 1 03	Thu	12:00 - 13:50	Burwood	T1.01	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11
Practical 1 04	Fri	11:00 - 12:50	Burwood	T1.04	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11
Practical 1 02	Fri	14:00 - 15:50	Burwood	T1.06	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11
Practical 1 05	Fri	16:00 - 17:50	Burwood	T1.05	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11

# **Practical Work**

**Classes will be posted on Cloud Deakin**

Announcements

Discussion forums

Weekly laboratory tasks

**Objective will be given for each session**

**Only some will have solutions**

**Be proactive, class does not end when the bell rings, keep practising and exploring more at home**

# Plagiarism

No! Please don't do it.....

*Students should be aware of the seriousness of cheating and the penalties associated with it.*

*Cheating includes copying from another student's work or allowing another student to copy one's own work, allowing someone else to prepare your assignment in part or as a whole, consultation with any unauthorised person during an examination or test, and the use of unauthorised aids.*

*All material submitted for marking must be the student's original work.*

# Plagiarism

## Must Read!

*Students who obtain too much assistance without learning the material ultimately hurt themselves. These students usually do poorly in tests because they have not mastered the lecture topics or practical exercises. Although students are free to discuss ideas used to complete assignments, work that is handed in must be written independently by the student concerned.*

You **MUST** read and fully understand the implications of the Faculty's Notice on Plagiarism on CloudDeakin prior to submitting your assignments.





**Let's start – what is a web service?**

**Let's do the first thing an experienced developer would do ...**

# Google “What is a Web Service?”



“A **web service** is a service **offered** by an electronic device to another electronic device, **communicating** with each other via the **World Wide Web**”

Google



# Engineers are 1 || 0



**Technology is not an opinion.**

**People have opinions and are part of  
the technology.**

**People are users, users need solutions,  
solutions are obtained through technology**



# As a user I want to .....

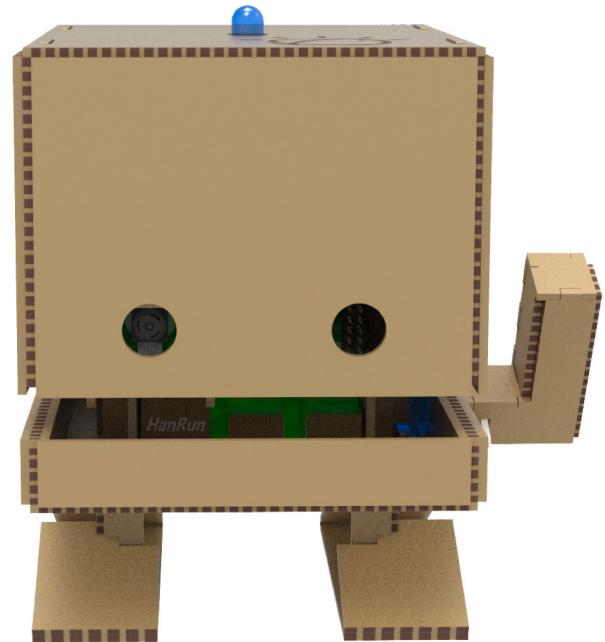
**Give life to my Tjbot!**

**I want him to speak**

**I want him to hear**

**I want him to see**

**I am not Frankenstein!**



# **Bring Tee to life!**



**By the end of this trimester, Tee should be able to satisfy our simplest tasks.**

**We will use web services to bring him to life!**

**Welcome again and enjoy your time here at Deakin, remember, learning does not stop outside these doors.**



# Any Questions?