



THE UNIVERSITY OF  
WESTERN AUSTRALIA

# CITS 4402 Computer Vision

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## Lecture 13 – Revision and Exam Discussion



## Overview of this lecture

- ↘ Revision
- ↘ Q & A
- ↘ Exam Discussion
- ↘ Computer Vision – the next step



## Revision and preparing for the exam

- ↘ Read the PDF lecture slides.
- ↘ Read the recommended books and reading material (links from unit website)
- ↘ If you don't understand any slide, watch the related lecture in LMS
- ↘ If you have a query, post your question on the CITS4402 help
- ↘ If you still have a problem, send me an email



## What will be included in your exam?

↘ All topics covered in the lectures.



## Exam 2018

- ↘ Time 2 hours (including reading time)
- ↘ Total Marks 100 (50% weight, 25% labs + 25% project)
- ↘ Total 30 Questions
  - Require short answers
  - No MCQs (Multiple Choice Questions)
- ↘ Total 14 pages
- ↘ Write answers on the space provided in the question paper



# Exam page 1



Department of Computer Science and Software Engineering

SEMESTER 1, 2018 EXAMINATIONS

CITS4402  
Computer Vision

FAMILY NAME: \_\_\_\_\_ GIVEN NAMES: \_\_\_\_\_

STUDENT ID: 

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 SIGNATURE: \_\_\_\_\_

This Paper Contains: **14** pages (including title page)  
Time allowed: **2:00** hours

**INSTRUCTIONS:**

This paper contains a total of 30 questions that require short answers. Please answer all questions.

Please write your answer in the space provided below each question. All answers must be written in this booklet in the spaces provided.

Calculators are not allowed. Notes and books are not allowed.

**TOTAL MARKS = 100**

Exam papers are to be collected.

**PLEASE NOTE**

*Examination candidates may only bring authorised materials into the examination room. If a supervisor finds, during the examination, that you have unauthorised material, in whatever form, in the vicinity of your desk or on your person, whether in the examination room or the toilets or en route to/from the toilets, the matter will be reported to the head of school and disciplinary action will normally be taken against you. This action may result in your being deprived of any credit for this examination or even, in some cases, for the whole unit. This will apply regardless of whether the material has been used at the time it is found.*

*Therefore, any candidate who has brought any unauthorised material whatsoever into the examination room should declare it to the supervisor immediately. Candidates who are uncertain whether any material is authorised should ask the supervisor for clarification.*

*Supervisors Only – Student left at:*



## Exam question paper breakdown

- ↘ Most questions have 3 or 4 marks
- ↘ Marks per question range from 2 to 7 marks
  - Marks should give you an idea of how much to write
- ↘ Some questions will ask you to draw diagrams
- ↘ Some questions may ask for standard/conceptual formulae
- ↘ Cumbbersome mathematical derivations will NOT be asked



## Your next step in computer vision

- ↘ Honours Project
- ↘ Masters Project
- ↘ Two topics
  - Pedestrian detection
  - Apparent age estimation from facial images
  - Bring your own topic
- ↘ PhD in computer vision
  - Discuss your preferred project with supervisor
    - Medical image analysis
    - Deep learning / Machine learning
    - Face recognition, object recognition, tracking, segmentation
  - Must contribute original knowledge
  - Fill a gap in solving a problem (e.g. better/faster algorithms for ...)





## Computer Vision on your own

- ↘ OpenCV libraries have realtime implementations of many algorithms
  - C++
  - Highly optimized implementation
  - Completely free
  - Version 3 is current one
  
- ↘ Deep learning
  - Tensor Flow
  - Caffe
  - Theano



## Project Demonstration

- ↘ Will be on Thursday for all groups
- ↘ Starting 2:00PM until finished or 5:00PM



## COMPUTER VISION: GIVING MACHINES THE ABILITY TO SEE

