

# **COMP9444**

# **Neural Networks and Deep Learning**

## **10a. Review**

# Assessment

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Assessment will consist of:

Assignment 1    30%

Assignment 2    30%

Final Exam      40%

The Final Exam will be available on Moodle.

You will have 2 hours to complete the exam, within the window of 14:00 to 17:00 (Sydney time) on Monday 24 August.

The exam will be open-book.

You **MUST** complete the exam **YOURSELF**, without assistance from others, and without assisting others.

# Examinable Topics

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- 1c. Perceptrons
- 1d. Backpropagation
- 2a. Probability & Backprop Variations
- 3a. Hidden Unit Dynamics
- 4a. Convolutional Networks
- 4b. Image Processing
- 5a. Recurrent Networks
- 5b. Word Vectors
- 7a. Reinforcement Learning
- 7b. Deep Reinforcement Learning
- 8a. Hopfield Networks & Boltzmann Machines
- 8b. Language Processing
- 9a. Autoencoders
- 9b. Generative Adversarial Networks

# Not Examinable

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These topics are NOT examinable:

- 1b. Neuroanatomy
- 3b. PyTorch

# Final Exam

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Part A: (12 Marks)

Multiple Choice Questions (1 mark each)

Part B: (28 Marks)

Structured Questions involving a combination of:  
selecting from multiple options, and/or entering numeric values

Part A Questions will be similar to the Quizzes.

Part B Questions will be similar to the Exercises.

Fractional Negative Marks for Incorrect Answers:

- –60% for Multiple Choice (Sub-)Question with Only Two Options
- –20% for Multiple Choice (Sub-)Question with Three or More Options
- No Negative Mark for Numerically Typed (Sub-)Question

# Sample Exam

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There is a Sample Exam available in Moodle.

Part A of the Sample Exam has only one Question.

(Part A of the real Final Exam will have 12 Questions.)

Part B of the Sample Exam is made up of Questions from the Exercises, converted to a suitable on-line format. (Part B of the real Final Exam will contain questions that are similar in style and scope, although the length, content and mark allocation of individual questions won't be exactly the same.)

# Related Courses

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- COMP3411/9414 Artificial Intelligence
- COMP9417 Machine Learning and Data Mining
- COMP4418 Knowledge Representation and Reasoning
- COMP3431 Robotic Software Architecture
- COMP9517 Machine Vision
- 4th Year Thesis topics

# Possible 4th Year Projects

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- generative models
- autoencoders, bidirectional GANs
- dimensionality reduction, deep PCA
- deep learning for signal processing
- deep learning combined with evolution
- other topics in deep learning, evolution, games



# UNSW myExperience Survey

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Please remember to fill in the UNSW myExperience Survey.

# Neural Networks and Deep Learning

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QUESTIONS?

# Neural Networks and Deep Learning

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GOOD LUCK!