

Final Exam Information

Introduction to Deep Learning

Simon Fraser University

Spring 2024

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Topics Included

- Linear Classifiers
- Fully connected Neural Networks
- Backpropagation
- CNNs
- RNNs with gates (LSTM, GRUs)
- Encoder-Decoder architectures, about 20%
 - Transformer, attention, self-attention
- Embeddings
- Auto-Encoders
- Basic auto-associative, PCA (from slides)
 - Convolutional
- Generative Models
 - Variational auto-encoder
 - Generative adversarial network
- Reinforcement Learning
 - Markov Decision Processes
 - Value Function
 - Value Iteration, Monte Carlo, Temporal Difference
 - Policy Gradient
 - Actor-Critic

Take-home Format: Long Answer

- On-line.
- Time window: Thursday April 18 1 pm – Friday April 19 1 pm
- Time Limit 60 min.
- I post 6 questions
 - Your exam selects 2.
 - You upload the answers to your question.
- Open book but **not** open neighbour.
- Copying will lead to a mark of 0, you must give your own answers using your own words only.
- Kind of like conceptual parts in assignment
- Write answer in word processor, upload file.
 - Maybe review equation editor in Office, or Latex package.
- In addition to content, clarity of the answers will also be considered. Also legibility if you write the answers by hand (which I do not recommend).
- Press the submit button only when you have completed the quiz. Canvas will warn you if some questions are not answered.

Format: Short Answer

- Should take about 120 min, time limit set for 180 min
- Mix of
 - Multiple choice
 - Match the concept
 - Compute an answer
 - Short answer
 - Recognition (e.g. what does this piece of code do?)
- In-person in ~~AQ 3005~~ ASB 9838

Instructions for In-person Part

- You will enter your answers in Canvas during the in-person part from
- **Change of location:** To support Canvas use, we will go to the Computing Science Instructional Lab (CSIL), **Room ASB 9838**.
- Please bring the following.
 1. Student ID. **You cannot take the exam without student ID.**
 2. access card/fob for CSIL.
<https://www.sfu.ca/computing/about/support/tips/door-access.html#groundwork-01>. To enter the room, you need an access card. We can let you in without one but it makes it easier for everyone if you bring your card.
 3. Bring your own computing device (laptop, tablet) for backup (e.g. if you get a CSIL workstation with a problem, or can't log in etc.).

Potential Problems

- You can post on the canvas discussion board **Final Exam Questions**

The Cheat Sheet

- You may use 1 (one) 8.5 x 11 sheet of notes for reference, both sides.

Review Session

- May 21 10 am -11 am PST as on course schedule