

# Deep Learning CS583 Fall 2021

## Quiz 2

November 30, 2021

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- **Read these instructions carefully**
- Fill-in your personal info, as indicated above.
- You have 24 hours.
- There are two questions. Each question worths the same (1 point).
- Both computer-typed and hand-writing in the very clear form are accepted.
- This is an open-book test.
- You should work on the exam only by yourself.
- Submit your PDF/Doc/Pages **by 12:30 Dec 1st** on Canvas under Final exam.

good luck!

# 1 Question

- Tell the difference between supervised and unsupervised learning.
- Give the formula for the loss function used in multiclass classification problems (categorical cross-entropy).
- Is it possible to construct a single layer neural network with threshold activation function implementing XOR of two bits? Construct a neural network implementing XOR.
- Is it possible to construct a single layer neural network with threshold activation function implementing addition of two bits?
- Construct a single layer neural network (define architecture, activation function and give a vector of weights) with a single output implementing conjunction of n bits.