CSE514, Fall 2022, HW 3 Name: Student ID:
Note: This homework is worth a total of 15 points

Answers to the following questions should be based on your reading of a research paper. Pick one following:

OptCoNet: an optimized convolutional neural network for an automatic diagnosis of COVID-19
Downloadable from Canvas with file name: **HW3 Goel2021_CNN.pdf**

A Neural Language Model for Query Auto-Completion
Downloadable from Canvas with file name: **HW3 Park20217_RNN.pdf**

Please indicate which paper you chose (or just circle it above):

Q1 (5pts): What is the problem that the network is meant to solve?
What features of the problem motivated the authors to choose their proposed network structure (CNN or RNN)?

Q2 (5pts): Give a written or graphical description of the network's architecture.
For each unique substructure (e.g. MPL or LSTM), give a brief definition of its purpose.

Q3 (5pts): How was the network evaluated? Define at least two performance metrics used.
For one of the performance metrics, explain how it's calculated, and give an example case

e.g. For the performance metric of variance explained on evaluation data, the formula is 1 - MSE/Variance.

An example case would be predicting [1.2, 1.8, 4] when the actual data is [1, 2, 3]

The MSE = [(1 - 1.2)^2 + (2 - 1.8)^2 + (3 - 4)^2] / 3 = 0.27

The Variance = [(1 - 2)^2 + (2 - 2)^2 + (3 - 2)^2] / 3 = 0.67

The variance explained = 1 – (0.27/0.67) = 0.595