**Northeastern University – Silicon Valley**

CS 5150 Game Artificial Intelligence

**Homework Set #2 Assigned: 9/9/18 Due: 9/17/18** [100 points]

Please submit your work online as a single PDF and a Python notebook or code file.

**PART A SNAKE AI: install PyGame, learn how to build basic Game AI ops [15 points]**

**PyGame:** **Making Games with Python & Pygame**

By Al Sweigart Study Chapter 2

Install and implement any 3 basic operations in PyGame

Download and run the code for the **Snake AI** using Pygame as shown in this tutorial:

https://pythonspot.com/snake-ai-in-pygame/

Add comments to this code to explain your understanding of what each major code segment is doing in the game. Show that you successfully ran the code and explain in your report how the game works and how it is designed.

**PART B Your own basic Pac-Man implementation in PyGame [35 points]**

Use the same code as a basis but build a different game with the following characteristics.

This is modeled after Pac-Man game: https://scratch.mit.edu/projects/141202320/

It should have one Human player (You) and one Monster.

It is NOT necessary to implement the entire, realistic Pac-Man in this question. Instead, just use Pac-Man as an inspiration and build a basic functionality in your game (similar to the Snake AI game above).

**PART C Game AI Algorithms: Basic Movement [50 points]**

For this question you can use the same code base from Questions 1 and 2 above.

Otherwise you can write separate, fresh code for this question 3. It is your choice.

Between the Human player and Monster, implement the following behaviors:

1. Seeking
2. Chasing
3. Evading (aka Fleeing)

Is seeking (Millington p.52) the same as chasing (Bourg Ch. 2)? Please explain.

**Resources for Part C**

https://www.phstudios.com/game-algorithm-series/

**Watching these tutorials and the game math tutorial before that would be very helpful.**

**PacMan basic**

https://github.com/gauravmittal1995/Pyman

**https://www.pygame.org/project-Pacman-426-4585.html**