THE **NATURE** OF **CODE**

DANIEL SHIFFMAN

SESSION 3 RESOURCES

STEERING FORCES ASSIGNMENT INSTRUCTIONS

1: Project Specifications

Create your own simulation using steering forces. Combine them using weights. Feel free to start from the examples provided. Some ideas are:

• Try implementing a Craig Reynolds' steering behavior that I did not demonstrate. One example is seeking a moving target, also known as "pursuit." In this case, your desired velocity doesn't point towards the object's current location, rather its "future" location as extrapolated based on its current velocity.

• Create a sketch where a vehicle's maximum force and maximum speed do not remain constant, but rather vary according to environmental factors.

• Create a flow field that changes over time.

• Create a flow field based on a data source.

• Create a flocking simulation where all of the parameters (separation weight, cohesion weight, alignment weight, maximum force, maximum speed) change over time. They could be controlled by Perlin noise or by user interaction.

• Build a creature with countless steering behaviors (as many as you can reasonably add). Think about ways to vary the weights of these behaviors so that you can dial those behaviors up and down, mixing and matching on the fly. How are creatures' initial weights set? What rules drive how the weights change over time?

• Complex systems can be nested. Can you design a single creature out of a flock? And can you then make a flock of those "flocks"?

2: Submission Instructions

• Create a zip file with the following components:

• Sketch File named sketch.js
• Include all p5 libraries used

• Submit your file to the Assignment 3 Steering Forces Assignment Coursework.
• After submitting, go to the Course Gallery for Assignment 3: Steering Forces and leave a constructive comment on at least one other student's work.

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