

Finding the Shortest Path Through a Corn Maze

A UVA Data Science Case Study by Madeleine Ashby



Liberty Mills Corn Maze, Fall 2022

Problem: The Liberty Mills Corn Maze is owned and operated by a couple in Somerset, Virginia. Each year, the pair creates a unique design in the corn field, mapping out three mazes across 34 acres. Before opening the maze to the public, the couple walk through each of the three mazes to determine the shortest path and obtain a time estimate to give to their customers. This year, however, the couple are too old to walk through all three mazes before the opening date and have requested the help of UVA students.



Breakdown of Each Path

Deliverable: Produce an algorithm to determine the shortest path through each of the red, blue, and yellow trails. Hypothetically assuming that the yellow trail is 2.75 miles long, the red trail is 3.6 miles long, and the blue trail is 5.4 miles long, determine an estimate of the time it would take an average child, teenager, and adult to walk through each of the three mazes. Also produce a metric for evaluating performance of the algorithm. For more detail, see the rubric.