CSCE 624 Sketch Recognition
Fall 2019
Assignment 2

Due: 10/1/2019 2pm CT

Overview

For the second assignment, we will consider an important step in the sketch recognition pipeline: **segmentation**. In particular, we will perform corner-finding, a form of segmentation which divides strokes into straight-line substrokes. You will need to implement a corner-finding algorithm, either one discussed in class or a novel approach. A few points will be awarded for creativity.

Setup/Usage Instructions

1. Download HW files from eCampus. Unzip the folder which contains the code files and data files.
2. Install NodeJS LTS (v10) from https://nodejs.org
3. Open a command line/terminal in the directory of the files and run the command

   ```
   node main.js
   ```

   This will load the data and create a local server at localhost:3000
4. Implement your segmentation algorithm in segment.mjs
5. Open a web browser and go to localhost:3000 to see the sketches
6. You can terminate the server by hitting Ctrl+c
7. Note that you do NOT need to restart the server if you make changes to the segment.mjs file. You simply need to reload the webpage.

Assignment Instructions

1. Inside “segment.mjs” you will be required to implement the “segment” function. This function takes in a single stroke (a list of points) and returns a list of substrokes associated with that stroke (a list of lists of points).

   Running the main.js file will start a local server which you can access at localhost:3000 in a web browser. This will show a list of the sketches, the existing substrokes, and the substrokes generated by your segment function in segment.mjs.

The viewer shows your substrokes and the substrokes originally generated for the sketch so you can compare the two.

2. Report

   Your report should be written in LaTeX (see www.overleaf.com for an easy to use, online LaTeX editor) and contain the following sections

   a. Explain your algorithm and discuss the intuition behind it.
   b. How might you improve your algorithm?
   c. Compare and contrast the ShortStraw algorithm with Sezgin's method. Give a scenario for when you might choose one over the other.

3. Submission

   You should submit a zip file of the following files. The zip should be named lastName_firstName_UIN_HW2.zip where you use your info. For example, John Smith with a UIN 123001234 would name their zip Smith_John_123001234_HW2.zip

   a. segment.mjs
   b. lastName_firstName_UIN_report.pdf

   Your submission should be made to eCampus by the due date at the top of these instructions.