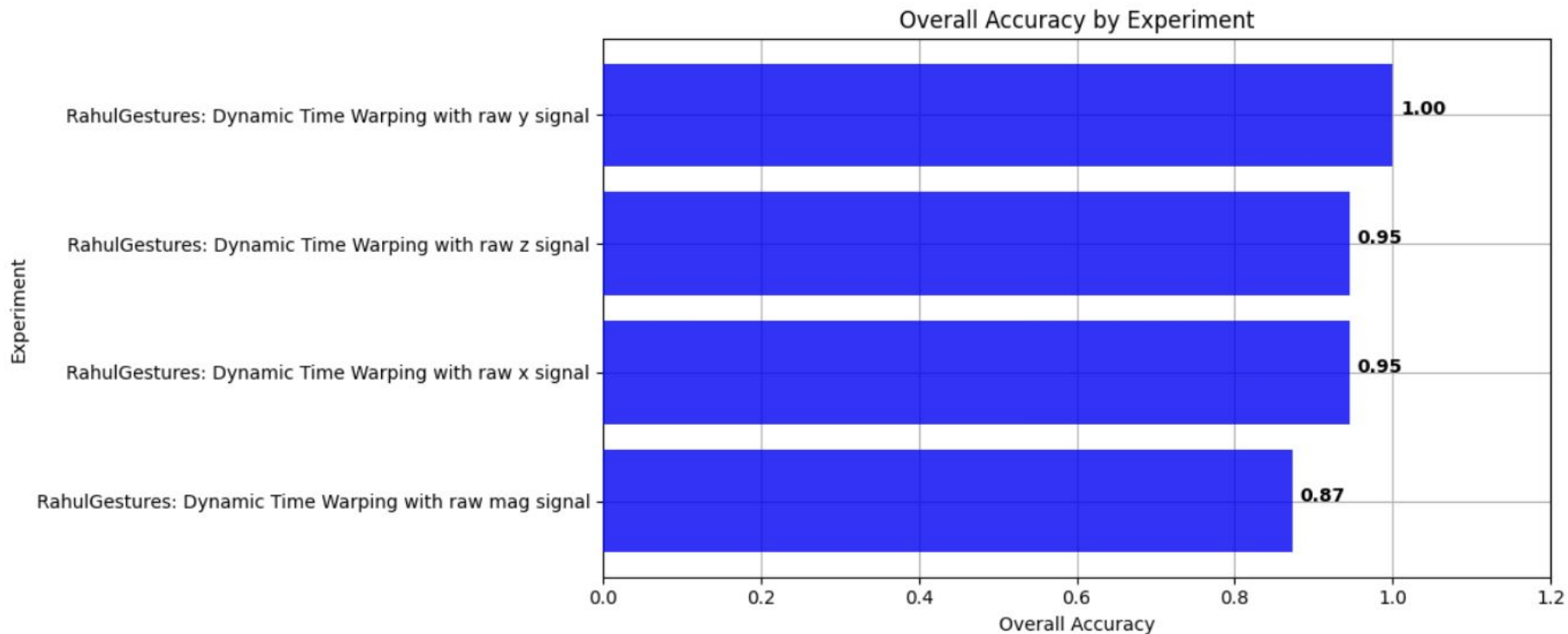# A3 Midpoint: Shape Matching

Rahul Surti, 2/13/24

Your algorithm design & evaluation process thus far

I followed the same skeleton as the provided similarity matching functions to start. I first mean-padded the signals to make them be of the same length. Then, I calculated the dynamic time warping distance between the signals using the `fastdtw` python library. For the euclidean distance parameter to the `fastdtw` function, I supplied a constant of 2. I appended the tuple of distance and the signal to an n-best list to fit into the experiment/result infrastructure.
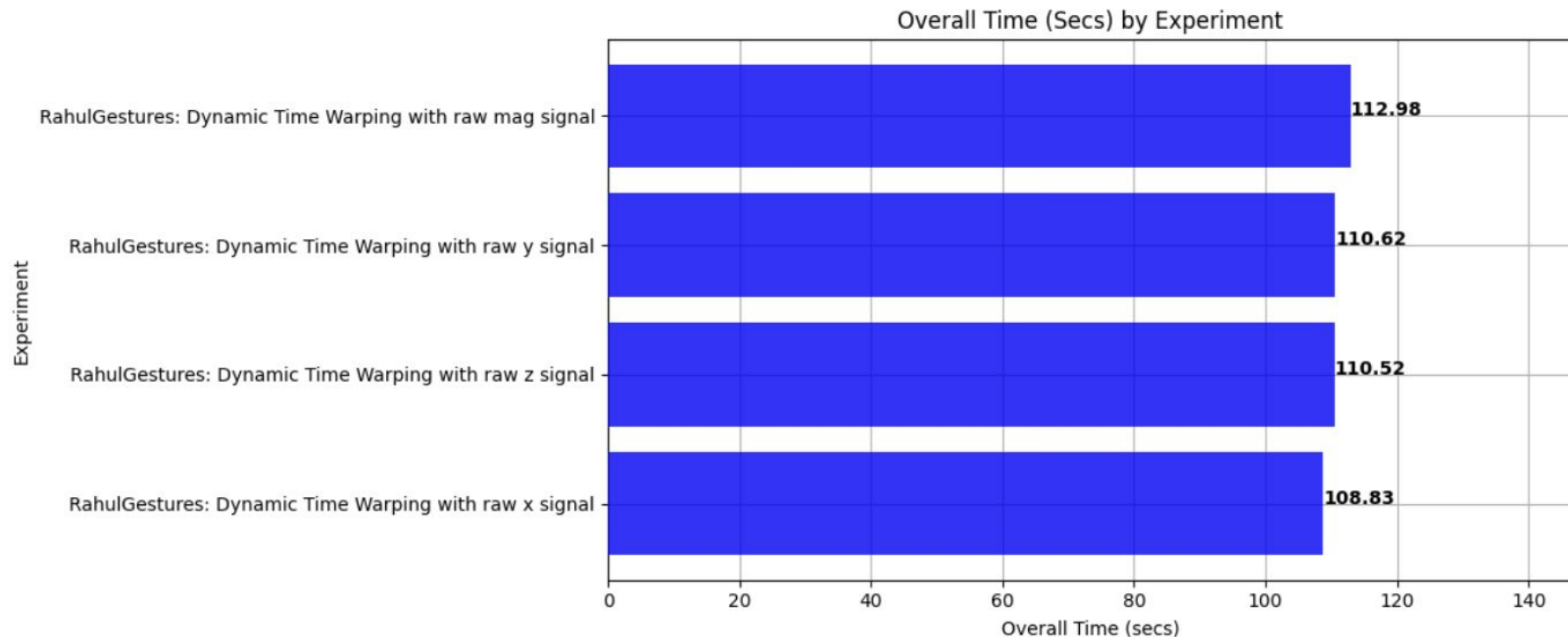
Your Gesture Results

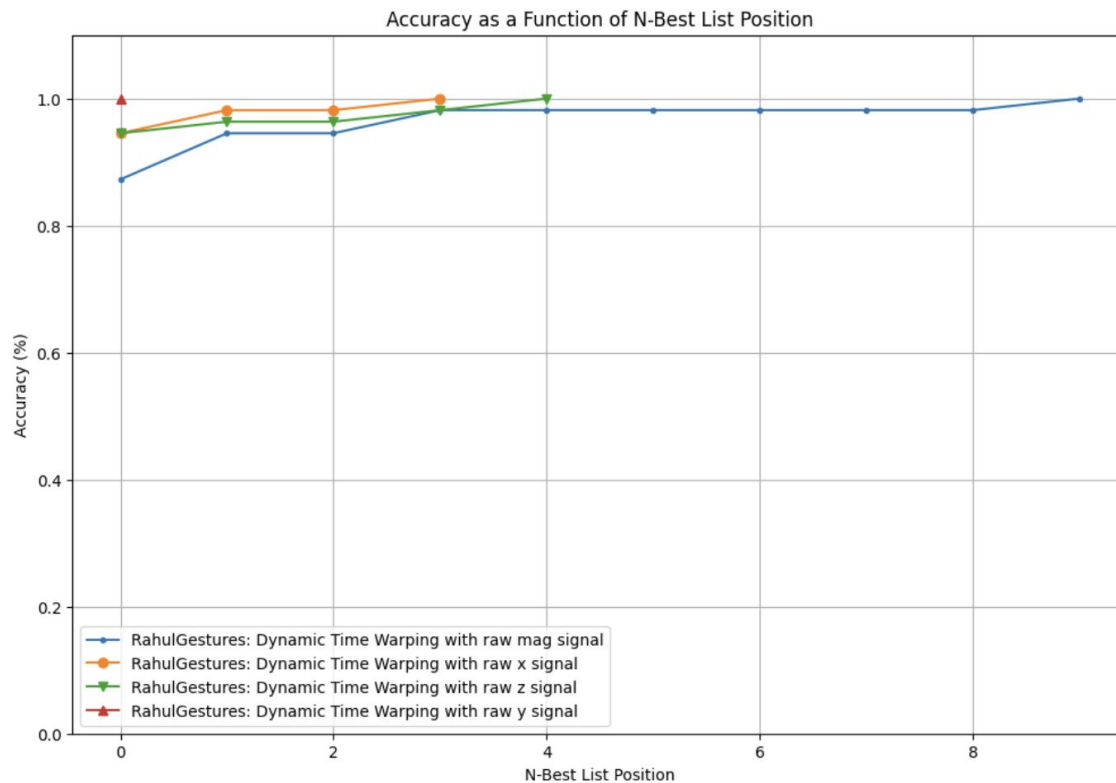Include graphs showing experiments and process

Overall **accuracy** by experiment

Overall Accuracy by Experiment

RahulGestures: Dynamic Time Warping with raw y signal — 1.00
RahulGestures: Dynamic Time Warping with raw z signal — 0.95
RahulGestures: Dynamic Time Warping with raw x signal — 0.95
RahulGestures: Dynamic Time Warping with raw mag signal — 0.87

Overall **time** per experiment

Overall Time (Secs) by Experiment

N-best list performance

Accuracy as a Function of N-Best List Position

Description of best-performing algorithm: 100.0%

The best results I achieved was dynamic time warping on the raw y signal, with 100% accuracy. I was generally impressed with the DTW approach as its accuracy was high across the board.

RahulGestures: Dynamic Time Warping with raw y signal: 55/55 (100.00%)